

BURNOUT AND ENGAGEMENT OF TEACHERS IN THE NORTH WEST PROVINCE

Leone Trodrich Basie Jackson, MA., MBA

Thesis submitted in fulfilment of the requirements for the degree Philosophiae Doctor in
Industrial Psychology at the Potchefstroom Campus of the North-West University

Promoter: Prof. S. Rothmann

Potchefstroom

2004

REMARKS

The reader is reminded of the following:

- § The references as well as the editorial style as prescribed by the *Publication Manual (4th edition)* of the American Psychological Association (APA) were followed in this thesis. This practice is in line with the policy of the Programme in Industrial Psychology at the North-West University to use APA style in all scientific documents as from January 1999.
- § The thesis is submitted in the form of five research articles. The name of the promoter appears on each research article as it was submitted for publication in national and international journals.

ACKNOWLEDGEMENTS

I wish to extend my gratitude to various individuals who, at various stages during the writing of this thesis, were prepared to help, guide and support me to complete this research successfully.

- I am deeply grateful to my Creator, Lord and Saviour, who gave me the talent, opportunity and strength to complete this research.
- I owe a special debt of gratitude to Prof. S. Rothmann, my mentor, for his persistent and competent guidance as well as his motivation, insight and faith in me throughout the writing of this thesis.
- I am very grateful to my wife, Sharon, and daughters, Shanice, Leonie and Chelsea for all their love, support, motivation and comfort.
- I owe a special debt of gratitude to my parents, Benjamin (late) and Lorna Jackson, for their continuous prayers, love, sacrifices and support through all these years.
- A special word of thank to officials of the North West Education Department for their assistance and help in conducting this research and for making this study possible.
- A special word of thanks to all teachers who completed the questionnaires.
- I extend my grateful appreciation to Prof Annette Combrink and Mr. J. Blaauw for the professional manner in which they conducted the language editing.
- Thank you to my family, friends and colleagues for all their love and support.

The financial assistance of the National Research Foundation (NRF) towards this research is hereby acknowledged. Opinions expressed and conclusions arrived at are those of the author and are not necessarily to be attributed to the National Research Foundation.

TABLE OF CONTENTS

	Page
List of Figures	v
List of Tables	vi
Summary	viii
Opsomming	x
 CHAPTER 1: INTRODUCTION	
1.1 Problem statement	1
1.2 Research objectives	12
1.2.1 General objective	12
1.2.2 Specific objectives	12
1.3 Research method	12
1.3.1 Literature review	13
1.3.2 Research design	13
1.3.3 Sample	13
1.3.4 Measuring battery	14
1.3.5 Statistical analysis	17
1.4 Division of chapters	18
1.5 Chapter summary	19
16. References	20
CHAPTER 2: RESEARCH ARTICLE 1	28
CHAPTER 3: RESEARCH ARTICLE 2	59
CHAPTER 4: RESEARCH ARTICLE 3	89
CHAPTER 5: RESEARCH ARTICLE 4	121
CHAPTER 6: RESEARCH ARTICLE 5	151

TABLE OF CONTENTS (continued)

	Page
CHAPTER 7: CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS	
7.1 Conclusions	178
7.2 Limitations	188
7.3 Recommendations	190
7.3.1 Recommendations to solve the research problems	190
7.3.2 Recommendations for future research	192
References	193

LIST OF FIGURES

Figure	Description	Page
	Research Article 3	
Figure 1	A model of occupational stress and ill-health	109
	Research Article 5	
Figure 1	A casual model of work wellness	169

LIST OF TABLES

Table	Description	Page
CHAPTER 1: INTRODUCTION		
Table 1	Characteristics of the Participants	16
Research Article 1		
Table 1	Characteristics of the Participants	39
Table 2	Goodness-of-Fit Statistics for the Hypothesised MBI-GS Model for Teachers from Different Language Groups	43
Table 3	Goodness-of-Fit Statistics for the new Hypothesized 3-factor MBI-GS model for Teachers from Different Language Groups	44
Table 4	Goodness-of-Fit Statistics for Tests of Factorial Invariance of the Adapted MBI-GS for Teachers from Different Language Groups	45
Table 5	Descriptive Statistics, Alpha Coefficients and Inter-Item Correlations of the Adapted MBI-GS for Teachers from Different Language Groups	46
Table 6	MANOVAs – Differences in Burnout Levels of Demographic Groups	47
Table 7	ANOVAs – Differences in Burnout Levels of Different Types of Schools	48
Table 8	ANOVAs – Differences in Burnout Levels Based on Considerations to Quit the Profession	48
Table 9	ANOVAs – Differences in Burnout Levels of Different Age Categories	49
Research Article 2		
Table 1	Goodness-of-Fit Statistics for the Hypothesised 3-factor UWES Model for Teachers from Different Language Groups	73
Table 2	Goodness-of-Fit Statistics for Tests of Factorial Invariance of the UWES for Teachers from Different Language Groups	75
Table 3	Descriptive Statistics, Alpha Coefficients and Inter-Item Correlations of the UWES	77
Table 4	MANOVAs – Differences in Engagement Levels of Demographic Groups	78
Table 5	ANOVAs – Differences in Engagement Levels based on Qualifications	79
Table 6	ANOVAs – Differences in Engagement Levels based on Type of School	79

LIST OF TABLES (Continued)

	Research Article 3	Page
Table 1	Characteristics of the Participants	97
Table 2	The Goodness-of-Fit Statistics for the Hypothesised ASSET Model	100
Table 3	Descriptive Statistics, Alpha Coefficients and Inter-Item Correlations of the ASSET	101
Table 4	Product-Moment Correlation Coefficients of the ASSET dimensions	104
Table 5	ANOVAs – Difference in Occupational Stress, Organisational Commitment and Ill Health of Teachers in Different Types of Schools	105
Table 6	ANOVAs – Differences in Occupational Stress, Organisational Commitment and Ill Health of Teachers with Different Qualifications	106
Table 7	ANOVAs – Differences in Occupational Stress, Organisational Commitment and Ill Health of Teachers in Different Age Categories	107
Table 8	ANOVAs – Differences in Occupational Stress, Organisational Commitment and Ill Health of Teachers with Different Years of Experience	108
	 Research Article 4	
Table 1	Characteristics of the participants	130
Table 2	Goodness-of-Fit Statistics for the Hypothesized MBI-GS Model	134
Table 3	Goodness-of-Fit Statistics for the Hypothesized Health Model	134
Table 4	Factor Loadings, Communalities (h^2), Percentage Variance and Covariance for Principal Factor Extraction and Varimax Rotation on the Job Characteristics Index (JCI) Items	135
Table 5	Factor Loadings, Communalities (h^2), Percentage Variance and Covariance for Oblique Factor Extraction and Promax Rotation for the Affectometer (AFM) Items	137
Table 6	Descriptive Statistics, Alpha Coefficients and Inter-Item Correlations of the Dimensions of the Different Measuring Instruments (MBI-GS; Health Questionnaire of the ASSET; Job Characteristics Index and the Affectometer)	138
Table 7	Correlation Coefficients between the Dimensions of the Measuring Instruments	139
Table 8	Stepwise Multiple Regression Analysis with Emotional Exhaustion, Cynicism and Professional Efficacy as Dependent Variables	140
Table 9	Stepwise Multiple Regression Analysis with Physical and Psychological Ill Health as Dependent Variables	141

LIST OF TABLES (Continued)

	Research Article 5	Page
Table 1	Characteristics of the Participants	160
Table 2	Descriptive Statistics and Cronbach Alpha Coefficients of the Measuring Instruments	166
Table 3	Correlation Coefficients between the Measuring Instruments	167

SUMMARY

Topic: Burnout and work engagement of teachers in the North West Province.

Key terms: Burnout, work engagement, work wellness, health, occupational stress, teachers, schools, education, validity, reliability, job demands, job resources, commitment, affectivity, ill-health

Continuous exposure to things like high job demands, lack of job resources, change, competitiveness and rivalry, can result in stress and burnout. Stressful events may lead to ill-health and might impact negatively on the work-related well-being of employees. Because of the emergence of positive (organisational) psychology, the study of positive aspects of health and well-being are increasingly popular in Occupational Health Psychology. One of these positive aspects is work engagement, which is considered to be the antipode of burnout. Successful diagnoses of work stress, burnout and work engagement is the first step in facilitating the work-related well-being of employees. To measure stress, burnout and work engagement, it is important to use reliable and valid instruments. However, there is a lack of empirical research systematically investigating burnout and work engagement in South Africa, as well as serious limitations, including poorly designed studies, a lack of sophisticated statistical analyses and poorly controlled studies. South Africa is a multicultural society and therefore, when burnout and work engagement measures are applied to different cultural groups, issues of construct equivalence becomes important. Furthermore, little information exists regarding the causes and effects of work stress, burnout and work engagement of teachers in South Africa.

The general objective of this research is to standardise the Maslach Burnout Inventory-General Survey (MBI-GS) and the Utrecht Work Engagement Scale (UWES) for teachers in the North West Province, to determine causes of occupational stress for teachers, to assess the relationship between occupational stress, organisational commitment and ill-health, and to develop and test a causal model of work-related well-being for teachers in the North West Province.

A cross-sectional survey design was used. Random, stratified samples of teachers in the North West Province ($N = 1177$) were taken. An adapted version of the Maslach Burnout Inventory – General Survey (MBI-GS), the Utrecht Work Engagement Scale (UWES), An Organisational Stress Screening Tool (ASSET), the Affectometer 2, the Job Characteristics Inventory (JCI), and a biographical questionnaire were administered. Descriptive statistics, Cronbach alpha coefficients, inter-item correlations, exploratory and confirmatory factor analyses, Pearson correlations, multivariate analysis of variance, one-way analysis of variance and t-tests were used to analyse the data. Structural equation modelling was used to test causal models of work-related well-being.

Structural equation modelling confirmed a three-factor model of burnout (Exhaustion, Mental Distance and Professional Efficacy). All three factors showed acceptable internal consistencies and construct equivalence for two language groups. Structural equation modelling also confirmed a three-factor model of work engagement, consisting of Vigour, Dedication and Absorption. Two of the sub-scales, namely Vigour and Dedication showed acceptable internal consistencies. Both the MBI-GS and the UWES showed acceptable construct equivalence. The results showed that practically significant differences exist between demographic groups in their experience of burnout and work engagement.

The results confirmed the construct validity and internal consistency of the ASSET. Occupational stress and low individual commitment to the organisation explained 31% of the variance in physical and psychological ill-health. Commitment from the individual to the organisation moderated the effects of occupational stress on physical and psychological health of teachers.

The results showed that role overload, unfavourable task characteristics, a lack of control and low positive affect predicted exhaustion. Favourable task characteristics, positive affect and low negative affect predicted professional efficacy. Burnout was related to physical and psychological ill-health. Regarding a model of work-related well-being, the results showed that job demands, a lack of job resources and low positive affect contributed to burnout. Burnout mediated the relationship between job demands and ill-health, while positive affect moderated the relationship between burnout and ill-health. Job resources predicted work engagement. Work engagement mediated the relationship between job resources and organisational commitment.

Recommendations for future research were made.

OPSOMMING

Onderwerp: Uitbranding en werksbegeestering van onderwysers in die Noordwes Provinsie.

Sleuteltermes: Uitbranding, werksbegeestering, werkswelstand, gesondheid, beroepstressore, onderwyser, skole, onderwys, geldigheid, betroubaarheid, werkseise, werks hulpsbronne, toewyding, affektiwiteit, swak gesondheid

Voortdurende blootstelling aan aspekte soos hoë werkeise, te min werk hulpsbronne, veranderinge, kompetisie en vyandigheid kan lei tot die ervaring van stres. Stresvolle gebeure kan lei tot swak gesondheid en kan die welstand van werknemers negatief beïnvloed. As gevolg van die ontstaan van die positiewe sielkunde, word die bestudering van positiewe aspekte van gesondheid en welstand toenemend populêr in Beroepsgesondheid. Een van hierdie positiewe konsepte is werksbegeestering, wat as die teenpool van psigiese uitbranding beskou word. Suksesvolle diagnosering van werkstres, psigiese uitputting en werksbegeestering is die eerste stap in die fasilitering van werkverwante welstand. Betroubare en geldige meetinstrumente is belangrik vir die meting van psigiese uitbranding, werkstres en werksbegeestering. Dit word egter bemoeilik deur die afwesigheid van empiriese navorsing in Suid-Afrika wat uitbranding en werksbegeestering in Suid-Afrika sistematies ondersoek asook ernstige beperkinge, wat insluit swak ontwerpte studies, 'n gebrek aan die gebruik van gesofistikeerde statistiese tegnieke en swak gekontroleerde studies. Omdat Suid-Afrika 'n multikulturele land is, is die meting van konstrukekwivalensie ook belangrik wanneer meetinstrumente vir verskillende kultuurgroepe gebruik word. Verder is min informasie beskikbaar oor die oorsake en gevolge van werkstres, psigiese uitbranding en werksbegeestering van onderwysers in Suid-Afrika.

Die algemene doelstellings van hierdie navorsing was om die Maslach Uitbrandingsvraelys-Algemene Opname (MBI-GS) en om die Utrecht Werkbegeestering Skaal (UWES) te standaardiseer vir onderwysers in die Noordwes Provinsie, om die oorsake van werkstres vir onderwysers te bepaal, om die verband tussen werkstres, organisasieverbondenheid en gesondheid te bepaal, en om 'n oorsaaklike model van werkwelstand te ontwikkel en te toets.

'n Dwarssnee opname-ontwerp is gebruik. 'n Ewekansige, gestratifiseerde steekproef ($n = 1177$) van onderwysers in die Noordwes Provinsie is geneem. Die Maslach Uitbrandings-vraelys - Algemene Opname (MBI-GS), die Utrechtse Werkbegeesterings-skaal (UWES), die Affectometer 2, 'n Organisasiestresgraderingsinstrument (ASSET), die Werkkenmerke Vraelys (JCI) en 'n biografiese vraelys is afgeneem. Beskrywende statistiek, Cronbach alfa koëffisiënte, inter-item korrelasies, verkennende en bevestigende faktorontleding, Pearson korrelasies, meerveranderlike variansie-analise, eenrigting variansie-analise en t-toetse is gebruik om die data te ontleed. Strukturele vergelykingsmodellering is gebruik om oorsaaklike modelle van werkverwante welstand te toets.

Strukturele vergelykingsmodellering het 'n drie-faktormodel van uitbranding (uitputting, mentale afstand en professionele doeltreffendheid) bevestig. Al drie die faktore het aanvaarbare interne konsekwenheid getoon. Strukturele vergelykingsmodellering het ook die drie-faktormodel van die UWES (energie, toewyding en absorpsie) bevestig. Twee van die subskale, naamlik Energie en Toewyding het aanvaarbare interne konsekwenheid getoon. MBI-GS en UWES het beide aanvaarbare interne konsekwenheid getoon. Beide die MBI-GS en die UWES het aanvaarbare konstrukekwivalensie vir verskillende taalgroepe getoon. Die resultate het prakties betekenisvolle verskille tussen demografiese groepe in hulle ervaring van psigiese uitputting en werksbegeestering, aangetoon.

Die resultate het die konstruk geldigheid en interne konsekwenheid van die ASSET bevestig. Beroepstres en individuele verbondenheid tot die organisasie het 31% van die variansie in swak gesondheid verklaar. Individuele verbondenheid tot die organisasie het die effek van werkstres op swak gesondheid gematig. Die resultate het aangetoon dat roloorlading, ongunstige taakkenmerke, 'n gebrek aan kontrole en lae positiewe affek tot uitputting aanleiding gee. Gunstige taakkenmerke, positiewe affek en lae negatiewe affek het professionele doeltreffendheid voorspel. Uitbranding was verwant aan fisieke gesondheid en psigologiese welstand.

Die resultate het aangetoon dat werkseise, 'n gebrek aan werks hulpsbronne en lae positiewe affek tot psigiese uitbranding bydra. Psigiese uitbranding het die verwantskap tussen werkseise en swak gesondheid gemedieer. Werks hulpsbronne het werksbegeestering voorspel. Werksbegeestering het die verwantskap tussen werks hulpsbronne en organisasie-verbondenheid gemedieer.

Aanbevelings vir toekomstige navorsing is aan die hand gedoen.

CHAPTER 1

INTRODUCTION

This thesis focuses on the work wellness of teachers in the North West Province in South Africa.

Chapter 1 focuses on the problem statement, research objectives and research methodology. The chapter starts out with a problem statement, giving an overview of previous related research conducted on work wellness and specifically burnout and work engagement in the education fraternity, linking it with this research project and its research objectives. A discussion of the research method follows, with details regarding the research design, study population, measuring instruments and statistical analyses. It concludes with an overview of the chapters that comprise this thesis.

1.1 PROBLEM STATEMENT

Today's workplace is indeed undergoing immense and permanent changes. Organisations are being 'reengineered' for greater speed, efficiency, and flexibility. Command and control management is giving way to participative management and empowerment (Oliver, 1998). South African organisations are going through a process of transformation. These organisations are struggling with complex interventions such as affirmative action, democratisation of the workplace, job creation, the improvement of quality of products and services, international competition, to keep up with the pace of technological development and to acknowledge the importance of diversity in the workplace (Booth, 1995; Human, 1995; Wood, 1995).

Prior to 1994, there were 17 different Education Departments responsible for schools alone, in South Africa. In 1994 the expenditure varied between R5 403 in the House of Assembly schools and R1 053 in the Transkei, a more than five-fold difference. Repetition and pass rates showed clear correlations with these differences in per capita expenditure (Department of Education, 1996). In 1993 the under-resourced DET and 'homeland' schools accounted for 80% of all pupils (Erasmus, 1995). In 1993 the 60% of the school-age population in the poorest 40% of households received 40% of all education spending, while 8% in the

wealthiest 20% of households received 23% of public spending. The 34% of children in the poorest 20% received 21% of the spending (Castro-Leal, 1996). This state of affairs regarding inequalities in the Education system inevitably necessitated enormous changes to the South African Public Education system.

Among other demands, teachers have to cope with were the rationalisation of personnel, specialisation that is increasing, the growing scope of syllabuses and an increasingly higher number of learners per class (Niehaus, Myburgh & Kok, 1996). The unstable nature of the teaching profession constantly challenges teachers to cope with and adapt effectively to the changes encountered in their profession (Ngwezi, 1989).

Teachers enter the profession with high expectations, a vision for the future, and a mission to educate children. The demands, pressures and conditions they work under can stifle this zeal and present obstacles to achieving their mission. There are a variety of factors which contribute to stress, demoralisation, and dropout of teachers. These include student discipline and apathy, lack of professional support, insufficient financial support, pressure from unions, education departments and school governing bodies, lack of community support, poor image of the profession and role ambiguity (Gold & Roth, 1993). This leads to disillusionment and eventually even *burnout* (Mesthrie, 1999).

Burnout is an increasing problem in the teaching profession (Mesthrie, 1999). Some of the most creative and talented teachers leave the profession due to burnout. These teachers were once enthusiastic and excited about teaching. Initially they experience personal rewards during their training and first few months of teaching. Soon, however, they are faced with criticism, overcrowded classrooms, the impact of teacher shortages, lack of mobility, lack of rewards, difficult assignments, poor working conditions, disruptive students, difficult administrators, lack of respect, little or no social support, and other negative conditions (Gold & Roth, 1985). Faced with these types of situations, many teachers feel angry and discouraged. When conditions do not improve and they do not receive support, teachers begin to feel a sense of hopelessness, they feel they have not been effective in their work, and they are unable to give their students what they have once hoped they could and even believed they would. They begin to lose their self-esteem and depression sets in after experiencing guilt and repressed anger. This leads to disillusionment and ultimately burnout (Gold & Roth, 1993). A high incidence of burnout has been observed in education managers and the

educators, at large, in South Africa as a result of the introduction of curriculum 2005. The innovation overload, according to the report, has led to increased levels of burnout and uncertainty (NCCRD, 2000).

Van der Linde, van der Westhuizen and Wissing (1999) found that female teachers with 16-20 years experience, with Afrikaans as home language, in schools using Afrikaans as the medium of instruction, and those in urban and semi-urban schools, experience a higher degree of burnout than their colleagues in other biographic and demographic categories. They argued that the responsibilities of married teachers (16-20 years experience) towards their children and family constitute a more demanding burden to bear together with their school duties, than would be the case with younger teachers. Another reason why this group experienced significantly higher levels of burnout was because they have reached a stage in their career where few things are experienced as new and exciting. Afrikaans speaking teachers in Afrikaans-medium schools experienced and more higher levels of burnout because of the double and parallel medium teaching which has been introduced in many schools, the adjustment of personnel numbers, enlarged teacher-learner ratio's, larger class groups and general uncertainty. Pupils from semi-urban schools are more inclined towards misbehaviour, which constitutes an important contribution towards burnout of teachers. This was confirmed by research conducted by Farber (1991).

Schaufeli and Enzmann (1998, p. 36) 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". Burnout has been recognised as a serious threat, particularly for employees who work with people (Van Dierendonck, Schaufeli & Buunk, 1993). It is the end result of consistently unmoderated or unsuccessful attempts at mediating stressors in the environment on the part of the individual (Levert, Lucas & Ortlepp, 2000). Burnout is in general viewed as a syndrome consisting of three dimensions, namely emotional exhaustion, mental distance (depersonalisation and/or cynicism) and reduced professional efficacy (Schaufeli & Enzmann, 1998).

Burnout among teachers has been investigated by a number of researchers in South Africa (De Witt, 1987; De Jager, 1988; van der Linde, van der Westhuizen and Wissing, 1999) by using either the Maslach Burnout Inventory (MBI) or the "Pines Tedium Measure" or both.

Practically speaking almost all burnout research uses the MBI, which originally has two versions, one for employees working in the human services (Human Services Survey – HSS) and one for educators (Educators Survey – ES). The main difference being that 'recipients' in the former is replaced by 'students' in the latter. The MBI-HSS/ES assesses three burnout dimensions: emotional exhaustion; depersonalisation (a callous, indifferent and cynical attitude towards recipients or students); and personal accomplishment (reversed score) (Schaufeli, 2003).

The apparent need for an instrument that measures burnout in contexts other than the service profession was met by the introduction of the *Maslach Burnout Inventory – General Survey* (MBI-GS) (Maslach, Jackson & Leiter, 1996). The MBI-GS assesses parallel dimensions (Exhaustion, Cynicism, and lack of Professional Efficacy) to those contained in the original MBI, except that the items do not explicitly refer to working with people (Schaufeli, Leiter, Maslach & Jackson, 1996), but to work in general. The broadening of the burnout concept with the introduction of the MBI-GS changed the meaning of the depersonalisation dimension in a fundamental way. By definition, depersonalisation involves other people so that its meaning cannot be broaden beyond the social relationship in which it occurs whereas cynicism, as operationalised by the MBI-GS reflects an indifferent or distant attitude towards work instead of other people. This problem can be overcome by viewing depersonalisation as a special case of *mental distance*. A recent study by Salanova, Llorens, García-Renedo, Burriel, Bresó and Schaufeli (in press), showed that one could empirically discriminate between cynicism and depersonalisation. Therefore, one should not assume that depersonalisation is measured when the MBI-GS is used for the assessment of teacher burnout.

To date, an empirical test of the distinctiveness of MBI-depersonalisation and MBI-cynicism in relation to both other burnout dimensions still stands out (Salanova, Llorens, García-Renedo, Burriel, Bresó & Schaufeli, in press). However, the MBI-GS is not yet standardised for teachers in South Africa and little information is available on its reliability and construct validity (see Rothmann, 2002), which makes it difficult to place the research results into context. Therefore, the first research problem is that the MBI-GS is not validated and standardised for teachers in South Africa. This makes it difficult to assess the levels of burnout of teachers and to compare the levels of burnout of teachers in various demographic groups.

Research over the past two decades has shown that burnout is not only related to negative outcomes for the individual, including depression, a sense of failure, fatigue, and loss of motivation, but also to negative outcomes for the organisation, including absenteeism, turnover rates and lowered productivity. According to Levert et al. (2000), burned-out workers show a lack of commitment and are less capable of providing adequate services, especially along dimensions of decision making and initiating involvement with clients (Fryer, Poland, Bross & Krugman, 1988). Burned-out workers are also too depleted to give of themselves in a creative, co-operative fashion (Sammur, 1997).

A new trend recently emerged in burnout research which both boils down to a broadening of the traditional concept and scope (Maslach, Schaufeli & Leiter, 2001). Burnout research seems to shift towards its opposite: *work engagement*. Researchers recently extended their interest to the positive pole of employees' well-being, instead of looking exclusively to the negative pole. Seen from this perspective, burnout is rephrased as an erosion of engagement with the job. This development indicates an emerging trend towards a 'positive psychology' that focuses on human strengths and optimal functioning rather than on weaknesses and malfunctioning (Seligman & Csikszentmihalyi, 2000).

Maslach and Leiter (1997) state that *engagement* is characterised by energy, involvement and efficacy, which are considered the direct opposites of the three burnout dimensions namely exhaustion, cynicism and lack of professional efficacy (three dimensions of burnout according to the Maslach Burnout Inventory – General Survey – MBI - GS). Employees who are engaged in their jobs have a sense of energetic and effective connection with their job activities and see themselves as able to deal totally with their job demands. According to Maslach and Leiter (1997), engagement is indicated by the opposite pattern of scores on the three MBI dimensions. According to these authors, low scores on exhaustion and cynicism and high scores on efficacy are indicative of engagement. By using the MBI to measure the level of engagement it makes it impossible to study the relationship between burnout and engagement empirically, since both these concepts are considered to be opposite poles of a continuum that is covered by one single instrument.

Schaufeli et al. (in press) describe burnout and engagement as opposite concepts that should be measured independently with different instruments. They define *engagement* as "a positive, fulfilling, work-related state of mind that is characterised by *vigour*, *dedication* and

absorption". Engagement refers to a more persistent and pervasive affective-cognitive state that is not focused on any particular job, event, individual or behaviour. Vigour refers to high levels of energy and mental resilience while working as well as a willingness to exert effort in and persistence even through difficult situations. Dedication is described as a sense of significance, enthusiasm, inspiration, pride and challenge. Absorption refers to a tendency to be fully concentrated and deeply engrossed in work, whereby time passes quickly and one has difficulty detaching oneself from work. Absorption includes focused attention, clear minds, mind and body unison, effortless concentration, complete control, loss of self-consciousness, distortion of time, and intrinsic enjoyment (Csikszentmihalyi, 1990). Schaufeli et al. (in press) developed the Utrecht Work Engagement Scale (UWES) and found acceptable reliability and validity for it in a study in Spain.

The above-mentioned discussion shows that teachers' adaptation at work could be studied in a positive way by focusing on the concept of engagement. However, only one study (Schaufeli et al., in press) was found which focused on engagement and its relationship with burnout. The UWES is not yet standardised for teachers in South Africa and no information is available on its reliability and construct validity (see Rothmann, 2002), which makes it difficult to place the research results into context. Therefore, the second research problem is that the UWES is not validated for teachers in South Africa. This makes it difficult to assess the levels of engagement of teachers and to compare the levels of engagement of teachers in various demographic groups.

South Africa is a multicultural society and the provincial education departments employs individuals of diverse cultural backgrounds. Within the South African context it cannot be taken for granted that scores obtained in one culture can be compared across cultural groups. Two closely related concepts play an essential role in cross-cultural comparisons, namely, equivalence and bias (Poortinga, 1989). In line with this view, Van de Vijver and Tanzer (1997) argue that when measurers are applied to different cultural groups, issues of measurement equivalence become important. In fact equivalence of measuring instruments should be computed in each study that takes place in a multicultural or cross-cultural context. The literature distinguishes among three types of equivalence. When an instrument measures different constructs in two cultures, no comparison can be made. Construct equivalence indicates the extent to which the same construct is measured across all cultural groups studied. The same construct is measured in the case of construct equivalence (also labelled

structural equivalence), even though not necessarily operationalised in the same way across cultures. The next (and higher) level of equivalence is known as measurement unit equivalence and is obtained when two metric measures have the same measure unit but have different origins. The last (and highest) level of equivalence has been called scalar equivalence or full score comparability and can be achieved when the measurement instrument is on the same ratio scale in each cultural group. It can also be achieved when scores on an instrument have the same interval scale across cultural groups. Equivalence cannot be assumed but should be established and reported in each study (Van de Vijver & Leung, 1997). Construct equivalence is the most frequently studied type of equivalence. Although no studies of construct equivalence of alternative-factor models of burnout and work engagement of teachers in South Africa were found, it is expected that its construct equivalence will be acceptable.

When people are placed in conditions where they cannot control events, especially where the events have negative consequences, responses include depression, rigidity, and an inability to make plans (Rowe, 2000). These are the very same behaviours exhibited by those experiencing a decreased psychological well-being, i.e. burnout (Keane, Ducette & Adler, 1985). It seems therefore reasonable to argue that the cause of burnout or decreased wellness has something to do with the relationship between stress and the experience of burnout (Rowe, 2000).

Mesthrie (1999) highlights the following changes in the South African environment that contribute to the experience of stress of teacher: increasing changes in education and society, teachers having to make a variety of modifications in their personal and professional lives. These changes include among others: population increases, diversity in school populations, increases in cost of living, crime and its effect on student behaviour, conditions of service, new rules and regulations of the Department of Education, curriculum changes, performance appraisal systems and demands of unions.

Gold and Roth (1993) has organised the causes of teacher stress into two categories, namely:

- *Professional stressors* such as disruptive students, excessive paperwork, complex scheduling, burdensome workload, lack of mobility, environmental pressures, administrative entanglement, and situational factors such as role conflict and role

ambiguity have been reported to effect significant job satisfaction for many teachers. Difficulty in carefully defining the duties of teachers can also be stressful and contribute to a lack of personal accomplishment of these teachers, which diminishes their feeling of success.

- *Personal stressors* includes five major reasons that cause teachers to be stressed such as health, relationships, financial, recreational and living conditions add to the many sources of stress with which teachers are constantly try to deal.

In general, stressful events lead to a strain reaction, and persistent or chronic strain may lead to exhaustion and psychological or physical distress, potential consequences of burnout (Maslach, 1978). Feelings of burnout have also been found to correlate with many occupational stressors and occupational strain variables and might be considered a type of occupational strain (Cordes & Dougherty, 1993; Lee & Ashforth, 1996).

In order to explain the causal pattern or relationship between occupational stresses and the outcomes thereof, several theoretical models have been developed. One such a model is the Job Demands-Control Model. The Job Demands-Control Model of Karasek (1979) is based on the proposition that the interaction between job demands and job control (decision latitude) are the key in explaining strain-related outcomes. In other words, jobs that combine high levels of demand with low levels of autonomy, control or decision latitude are the most stressful (Winefield, Gillespie, Stough, Dua & Hapuararchchi, 2002).

According to Siu (2002) and Winefield et al. (2002) there is significant evidence to suggest that chronic and high levels of occupational stress, left unchecked, be related to mental and physical wellbeing, job dissatisfaction, absenteeism, stress related injuries turnover and intention to quit. Matheny, Gfroerer and Harris (2000) also indicate that when work stress leads to burnout, it has serious consequences for a person's health. It is therefore of utmost importance to identify potential occupational stressors as well as variables, which have beneficial consequences for both employees and their organisations (Siu, 2002).

It is possible that certain variables might moderate the effects of occupational stress. Cooper , Dewe and O'Driscoll (2001, p. 117) define a moderator as "a variable that affects the

direction and/or strength of the relation between an independent or predictor variable and a dependent or criterion variable".

Studies have shown that the possible causes of burnout can be categorised into organisational, biographical and personality factors:

- The organisational factors that contribute to burnout include work overload (Adams, 2001; Ivancevich & Matteson, 1990; Landsbergis, 1998), role conflict and role ambiguity (Melzer & Nord, 1981; Miller, Ellis, Zook & Lyles, 1990), poor collegial support (Golembiewski & Munzenrider, 1988), and career concerns such as lack of career progress (Ivancevich & Matteson, 1990).
- The biographical factors that could relate to burnout are age, work experience and gender. Burnout is said to be more prevalent among younger workers and negatively related to work experience. Kunzel and Schulte (1986) explain the prevalence of burnout among the younger work force and less experienced workers in terms of reality shock. Cherniss (1980a), however, relates it to identity crisis due to unsuccessful occupational socialisation. Maslach, Jackson and Leiter (1996) have observed that symptoms of burnout reduce with growing age or work experience. Women are prone to emotional exhaustion, while men are prone to depersonalisation. Schaufeli and Enzmann (1998) explained this in terms of sex role-dependent stereotypes. That is, men hold instrumental attitudes, whereas women are more emotionally responsive, and seem to disclose emotions and health problems more easily. Again, due to additional responsibilities at home, working women carry higher workloads compared to men. Schaufeli and Enzmann (1998) found that unmarried people, especially men, seem to be more prone to burnout when compared with those who are married. Cash (1988) has found that people with higher level of education tend to be more prone to burnout than less educated ones. This, according to Schaufeli and Enzmann (1998) could be attributed to the higher expectations of the educated workers, or that the more educated workers more often tend to hold higher positions of responsibility.
- Personality traits of employees correlate with burnout according to Schaufeli and Enzmann (1998). The tendency to perceive events and circumstances as stressful, ways of

coping with them and how failure in coping is dealt with, depend in part on the *dispositional characteristics* of a person. These characteristics involve one's beliefs about the world and the possibilities of dealing with them (Semmer, 1996). In this research, the dispositional causes of stress and burnout are studied from a salutogenic paradigm (which focuses on the origins of health) (Antonovsky, 1987; Strümpfer, 1990) or fortigenic paradigm (which focuses on the origins of strengths) (Strümpfer, 1995).

Organisational approaches to work wellness are usually descriptive in nature. That is, instead of explaining work wellness they describe what types of organisational variables are related to wellness (Schaufeli, 2003). Such heuristic models have received some empirical support (e.g., Golembiewski et al., 1996). An exception has to be made for the recently developed Job Demand-Resources (JD-R) model that assumes that two underlying psychological processes play a role in burnout (as one aspect of wellness at work): an effort-driven process in which excessive job demands lead to exhaustion and a motivation-driven process in which lacking resources lead to disengagement (Demerouti, Bakker, Nachreiner & Schaufeli, 2001b).

Schaufeli and Bakker (2004) extended the JD-R model by including engagement and by adding indicators for health impairment and organisational withdrawal in the Comprehensive Burnout and Engagement (COBE) Model. The COBE-model assumes two psychological processes, namely an energetic and a motivational process. The energetic process links job demands with health problems via burnout. The motivational process links job resources via work engagement with organisational outcomes. Job resources may play either an intrinsic motivational role (by fostering the employee's growth, learning and development), or they may play an extrinsic motivational role (by being instrumental in achieving work goals). Schaufeli and Bakker (2004) confirmed the model in an empirical study in the Netherlands. Job demands were associated with exhaustion, whereas job resources were associated with work engagement. Burnout was related to health problems as well as to turnover intentions, and mediated the relationship between job demands and health problems, while work engagement mediated the relationship between job resources and turnover intentions. In light of the above-mentioned, it seems vital that a holistic and integrated model of work wellness be determined within the South African environment and specifically within the teaching fraternity.

Variables such as organisational commitment, positive and negative affectivity are therefore considered as moderators of the stress-strain process in this research.

- **Organisational commitment.** Two approaches can be followed when defining organisational commitment (Blau & Boal, 1987). In the first approach, commitment is seen as a behaviour during which the individual is viewed as committed to an organisation because it is too costly for him or her to leave. In the second approach the individual is committed to the organisation because of shared goals and the wish to maintain membership (Blau & Boal, 1987, p. 290). However, organisational commitment has recently been expanded to a more comprehensive view, consisting of three components, affective, continuance and normative commitment (Meyer, Stanley, Herscovitch & Topolnytsky, 2002; Siu, 2002). "Affective commitment denotes an emotional attachment to, identification with and involvement in the organisation. Continuance commitment denoting the perceived cost associated with leaving the organisation, and normative commitment, reflecting a perceived obligation to remain in the organisation" (Meyer et al., 2002, p. 21).

Recently, organisational commitment has been identified as a significant moderator of stress (Siu, 2002) and was linked to work engagement (Lee et al., 2002). Siu's (2002) results showed that organisational commitment was not only related to most of the physical and psychological outcomes among workers, but also to the moderating effects on the stressor-health relationship. Organisational commitment, therefore, interacts with sources of stress at work to determine the outcomes thereof. Sui (2002) argued that this indirect or moderating effect of commitment protects individuals from the negative effect of stress, due to the fact that it enables them to attach direction and meaning to their work. Organisational commitment can also provide people with stability and a feeling of belonging. However, the opposite can also be true.

- **Positive and negative affect.** Cropanzano, James and Konovsky (1993) showed that there are two general dimensions of affective responding, namely positive and negative affect. Positive affect, which is one aspect of employees' happiness, may moderate the effects of demands and resources on burnout and ill health. Positive affect, which can be assessed as a short-term state or a long-term trait (Watson, 2002), is part of the approach-

oriented behavioural facilitation system. This system directs organisms toward situations and experiences that potentially may yield pleasure and reward and ensures the procuring of resources that are essential to the survival of the individual. Individuals with high positive affect can be described as confident, exhilarated, excited and enthusiastic. They feel good about themselves and their world and therefore, report greater satisfaction with aspects of their lives. On the other hand individuals low on positive affectivity are characterised as lethargic, listless, and apathetic. These scores reflected on absence of positive feelings, rather than negative feelings (Cropanzano, James & Konovsky, 1993). Negative affectivity is the tendency for an individual to experience negative emotions, such as anxiety or depression, across a wide variety of situations (Spector, 2000). Researchers (Cropanzano et al., 1993; Judge, 1993; Levin & Stokes, 1989; Moyle, 1995) have extended the negative affectivity idea to the workplace. The idea was that individuals with high negative affect would respond to their jobs negatively and would be likely to develop exhaustion and strain (Levin & Stokes, 1989).

It is clear from the above-mentioned discussion that occupational stressors as well as variables such as organisational commitment might be related to the health of teachers. However, no studies including these factors in a causal model of occupational stress of teachers were found in the literature. Therefore, the third research problem is that there is a lack of a causal model of occupational stress for teachers in South Africa.

From a "positive psychology" paradigm (Seligman & Csikszentmihalyi, 2000), it is possible that work, and more specifically goal-directed, structured activity, could translate directly into well-being (Kelloway & Barling, 1991). In contrast to the pathological interest in "what can go wrong", this paradigm requires attempts to discover "what can go right" (Strümpfer, 2002), which implies a radically different set of assumptions and attributions about health and potential. According to Schaufeli and Bakker (2001), research on burnout showed that some individuals, regardless of high job demands and long working hours, were not burned out. Instead, it seemed that they found pleasure in working hard and dealing with job demands. From a positive psychology perspective, such individuals could be described as engaged in their work.

Rothmann (2003) recommended that burnout and work engagement (being aspects of work-related well-being) be integrated into one model. Situational causes (e.g. job demands and job

resources) and individual causes of well-being, as well as outcomes of well-being (e.g. ill health and organisational commitment) could then be included in this model

Furthermore, no information is available regarding the relationships between occupational stressors, biographical factors, personality traits that might be related to burnout and work engagement of teachers. Accordingly, no studies including these factors in a causal model of burnout and work engagement of teachers were found in the literature. Therefore, the fourth research problem is that there is a lack of a causal model of burnout and work engagement among teachers in South Africa.

This research will make the following contributions to Industrial Psychology as a science:

- It will result in a measuring instrument for burnout of teachers, which has been proven to be reliable, valid and structurally equivalent.
- It will result in a measuring instrument for engagement of teachers, which has been proven to be reliable, valid and structurally equivalent.
- It will result in a measuring instrument for occupational stress of teachers, which has been proven to be reliable, valid and structurally equivalent.
- A causal model of occupational stress will exist, which could be used to predict occupational stress of teachers.
- A causal model of burnout will exist, which could be used to predict burnout of teachers.
- A causal model of work wellness will exist, which could be used to predict burnout, work engagement, ill-health and commitment of teachers.

1.2 RESEARCH OBJECTIVES

1.2.1 General objective

The general objective of this research is to standardise the Maslach Burnout Inventory-General Survey (MBI-GS) and the Utrecht Work Engagement Scale (UWES) for teachers in the North West Province, to determine their levels of occupational stress, organisational commitment and ill-health and to develop and test a causal model of work-related well-being for teachers in the North West Province.

1.2.2 Specific objectives

- To determine the psychometric properties of an adapted version of the Maslach Burnout Inventory-General Survey (MBI-GS) for teachers in different language groups and to determine the differences between the burnout of different demographic groups.
- To determine the psychometric properties of the Utrecht Work Engagement Scale (UWES), to assess its construct equivalence for South African teachers in different language groups, and to determine the differences between the work engagement of different demographic groups.
- To validate An Organisational Stress Screening Tool (ASSET) for teachers, to assess the relationship between occupational stress and health, and to determine whether organisational commitment moderates the effects of occupational stress on ill-health.
- To assess the relationship between burnout, health, job characteristics and affect of teachers in a district of the North West Province in South Africa.
- To develop and test a causal model of work-related well-being for teachers in the North West Province of South Africa.

1.3 RESEARCH METHOD

The research method consists of a literature review and an empirical study.

1.3.1 Literature review

The literature review focuses on previous research on burnout, work engagement and stress and the measurement of these constructs. An overview is given of the conceptualisation of these constructs in the literature, and on the findings in terms of measuring burnout, work engagement and strain.

1.3.2 Empirical study

1.3.2.1 Research design

A cross-sectional design with a survey as technique of data collection is used to achieve the research objectives. Cross-sectional designs are used to examine groups of subjects in various

stages of development simultaneously, while the survey describes a technique of data collection in which questionnaires are used to gather data about an identified population (Burns & Grove, 1993). Information collected is used to describe the population at that time. This design can also be used to assess interrelationships among variables within a population. According to Shaughnessy and Zechmeister (1997), this design is best suited to addressing the descriptive and predictive functions associated with correlational design, whereby relationships between variables are examined. Structural equation modelling was used to address the problems associated with this design (Byrne, 2001).

1.3.2.2 Sample

Approximately 28 000 teachers are employed by the North West Education Department. Seven school districts were randomly sampled from a group of 12 in the North West Province in South Africa. Two school circuits were randomly sampled from the district. A circuit could consist of up to 40 schools. Five thousand teachers (representing 17,9% of the population) in randomly selected circuits received questionnaires. One thousand three hundred completed questionnaires were received. However, because of missing data, only 1177 (23,54%) of the questionnaires were included in the data analysis.

The sample consisted mainly of permanent (89,42%) Setswana speaking (45,88%) females (69,48%), who are married (46,25%), possess a Grade 12 certificate and an Education Diploma/B.Degree (45,68%), that have not experienced a major stressful event over the last six months (56,69%) and are members of a trade union (91,25%). Table 1 presents some of the characteristics of the participants.

Table 1

Characteristics of the Participants

Item	Category	Percentage
Position	Post level 1 – teacher	76,28
	Post level 2 – Head of Department	15,06
	Post level 3 – Deputy Principal	6,66
	Post level 4 – Principal	1,64
Education	Grade 12 + Education Diploma	33,16
	Grade 12 + Higher Education Diploma or B. Degree	45,68
	Grade 12 + Education Diploma + Honours Degree	18,51
	Grade 12 + Education Diploma + Masters Degree	2,64
Gender	Male	30,52
	Female	69,48
Marital status	Single	21,34
	Engaged	4,18
	Married	46,25
	Separated/Divorce/Death	3,22
	Remarried	1,57

1.3.2.3 Measuring battery

The Maslach Burnout Inventory – General Survey, the Utrecht Work Engagement Scale, An Organisational Stress Screening Tool, the Job Characteristics Scale, the Affectometer and a biographical questionnaire are used in this study.

The *Maslach Burnout Inventory - General Survey (MBI-GS)* is used to measure the Exhaustion (5 items), Cynicism (5 items) and Professional efficacy (6 items) dimensions of burnout. The Depersonalisation (5 items) dimension of the Maslach Burnout Inventory – Educator Survey (MBI – ES) is also included in the questionnaire. On this scale the word 'recipients' (MBI - GS), found on the original scale was replaced by 'student' (ES). Responses, to 21 items, are made on a frequency scale which varies from 0 (*never occurs*) to 6 (*occurs everyday*). Internal consistencies (Cronbach coefficients alphas) for the MBI – GS reported by Maslach et al. (1996) varied from 0,87 to 0,89 for Exhaustion, 0,73 to 0,84 for Cynicism and 0,76 for Professional Efficacy. Internal consistencies of 0,90, 0,79 and 0,71 were reported for Exhaustion, Depersonalisation and Personal Accomplishment respectively using the MBI – ES (Maslach & Jackson, 1986).

The *Utrecht Work Engagement Scale* (UWES) (Schaufeli, Salanova, González-Romá & Bakker, 2002) is used to measure the levels of work engagement of the participants. The UWES includes three dimensions, namely Vigour, Dedication and Absorption. The questionnaire consists of 17 questions and includes questions like "I am bursting with energy every day in my work"; "Time flies when I am at work" and "My job inspires me". The items of the questionnaire are scored on a frequency-rating scale, varying from 0 (*never*) to 6 (*every day*). The alpha coefficients for the three sub-scales varied between 0,68 and 0,91. Alpha coefficients between 0,78 and 0,89 were obtained for the three sub-scales. Storm (2002) obtained the following alpha coefficients for the UWES in a sample of 2 396 members of the South African Police Service: Vigour: 0,78; Dedication: 0,89; and Absorption: 0,78.

The *ASSET* (which refers to An Organisational Stress Screening Tool) was developed by Cartwright and Cooper (2002) as an initial screening tool to help organisations assess the risk of occupational stress in their workforce. It measures potential exposure to stress in respect to a range of common workplace stressors. It also provides important information on current levels of physical health, psychological well-being and organisational commitment and provides data to which the organization can be compared. The ASSET is divided in four questionnaires. The first questionnaire (37 items) measures the individual's perception of his or her job. This sub-scale includes questions relating to eight potential sources of stress, namely: work relationship; work-life balance; overload; job security; control; resources and communication; job overall; and pay and benefits. The second questionnaire (9 items) measures the individual's attitude toward his or her organisation, and includes questions relating to perceived levels of commitment both from and to the organisation. The third questionnaire (19 items) focuses on the individual's health, aimed at specific outcomes of stress, and includes questions relating to both physical and psychological health. The fourth questionnaire (24 items) focuses on supplementary information, i.e. the background information, and includes questions relating to factors, which can affect stress. The first three questionnaires of the ASSET is scored on a six point scale with 1 (*strongly disagree*) to 6 (*strongly agree*). The fourth questionnaire is scored on a four point scale with 1 (*never*) to 4 (*often*).

The ASSET has an established set of norms from a database of responses from 9188 workers in public and private sector (non-higher education institutions) organisations in the UK. Validity is still to be completed (Cartwright & Cooper, 2002). 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 (Cartwright & Cooper, 2002). Johnson and Cooper (2003) found that the Psychological Well-being sub-scale has good convergent validity with an existing measure of psychiatric disorders, the General Health Questionnaire (GHQ – 12; Goldberg & Williams, 1988). Tytherleigh (2003) used the ASSET as an outcome measure of job satisfaction in a nationwide study of occupational stress levels in 14 English higher education institutions. A series of Cronbach's alphas was carried out on each of the questions for the five ASSET sub-scales to identify the reliability of the ASSET questionnaire with these data. The results ranged from 0,64 – 0,94, showing good reliability.

The *Job Characteristics Inventory (JCI)* has been developed for the purpose of this study to measure job demands and job resources for employees. The JCI consists of 48 items. Various demands and resources in the organisation were identified and measured on a 4-point scale ranging from 1 (*never*) to 4 (*always*). The dimensions of the JCI include pace and amount of work, mental load, emotional load, work variety, opportunities to learn, work independence, relationships with colleagues, relationship with immediate supervisor, ambiguities at work, information, communications, participation, contact possibilities, uncertainty about the future, remuneration and career possibilities. The internal consistency and construct validity of the scale are determined for the purposes of this study.

The *Affectometer 2 (AFM)* is used to measure negative and positive affect. The AFM is a 40-item self-report scale measuring the balance of positive and negative feelings in recent experience. The scale has separate items for measuring positive and negative affect (PA, NA). Questions are rated on a scale ranging from 1 (*not at all*) to 5 (*all the time*). The instruction to report feelings "over the past few weeks" does not rule out the possibility that happiness is a rapidly changing state, or alternatively a stable trait lasting for years. The overall level of well-being is conceptualised as the extent to which good feelings predominate over bad feelings, and this is reflected in the balance formula for calculating the total score, namely PA – NA. In a sample of 110 random New Zealand adults, the scale gives an alpha of 0,95, which indicates high reliability. The Affectometer 1 shows correlations of 0,74 with the General Well-Being Schedule, - 0,62 with an ad hoc list of somatic complaints, -0,70 with EPI Neuroticism and 0,74 with 7-Step Happiness, all of which indicate high validity (Kammann & Flett, 1983).

A biographical questionnaire is used to gather information about the demographic characteristics. Other information that was gathered included type of school, job level, age, gender, considerations to quit, possession of the right equipment to teach effectively.

1.3.5 Statistical analysis

The statistical analysis is carried out with the help of the SAS-program (SAS Institute, 2000), the SPSS-program (SPSS Inc., 2003) and the AMOS-program (Arbuckle, 1997). Descriptive statistics (e.g. means, standard deviations, skewness and kurtosis) are used to analyse the data. Cronbach alpha coefficients and inter-item correlations are used to determine the internal consistency, homogeneity and unidimensionality of the measuring instruments (Clark & Watson, 1995). Coefficient alpha contains important information regarding the proportion of variance of the items of a scale in terms of the total variance explained by that particular scale. According to Clark and Watson (1995), the mean inter-item correlation (which is a straightforward measure of internal consistency) provides useful information in conjunction with the alpha coefficient of a scale (which is an indication of homogeneity of a scale), but as such cannot ensure unidimensionality of a scale.

In terms of statistical significance, it was decided to set the value at a 95% confidence interval level ($p \leq 0,05$). Effect sizes (Steyn, 1999) are used to decide on the practical significance of the findings. Pearson product-moment correlation coefficients are used to specify the relationship between the variables. A cut-off point of 0,30 (medium effect, Cohen, 1988) is set for the practical significance of correlation coefficients.

Structural equation modelling (SEM) methods as implemented by AMOS (Arbuckle, 1997) are generally used to test the factorial model of the various measuring instruments, using the maximum likelihood method. Structural equation modelling 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). The term "structural equation modelling" (SEM) conveys two important aspects of the procedure, namely that the causal processes under study represented by a series of structural (i.e. regression) equations, and that these structural relations can be modelled pictorially to enable a clear conceptualisation of the theory under study. Several aspects of SEM set it apart from the older generation of

multivariate procedures (Byrne, 2001). First, it takes a confirmatory rather than an exploratory approach to data analysis. Furthermore, by demanding that the pattern of inter-variable relations be specified a priori, SEM lends itself well to the analysis of data for inferential purposes. Second, although traditional multivariate procedures are incapable of either assessing or correcting for measurement error, SEM provides explicit estimates of these error variance parameters. Third, SEM procedures can incorporate both unobserved (latent) and observed variables. Hypothesised relationships are tested empirically for goodness of fit with the sample data.

Multivariate analysis of variance (MANOVA) is used to determine the significance of differences between the burnout and work engagement of demographic groups. MANOVA tests whether mean differences among groups on a combination of dependent variables are likely to have occurred by chance (Tabachnick & Fidell, 2001). In MANOVA a new dependent variable that maximises group differences is created from the set of dependent variables. Wilk's lambda was used to test the significance of the effects. Wilk's lambda is a likelihood ratio statistic that tests the likelihood of the data under the assumption of equal population mean vectors for all groups against the likelihood under the assumption that the population mean vectors are identical to those of the sample mean vectors for the different groups. When an effect was significant in MANOVA, one-way analysis of variance (ANOVA) was used to discover which dependent variables were affected.

T-tests are used to determine differences between the groups in the sample. Effect sizes (Cohen, 1988; Steyn, 1999) are used in addition to statistical significance to determine the significance of relationships. Effect sizes indicate whether obtained results are important (while statistical significance may often show results which are of little practical relevance). A cut-off point of 0,50 (medium effect) (Cohen, 1988) is set for the practical significance of differences between means.

1.4 DIVISION OF CHAPTERS

The chapters are presented as follows in this thesis:

- | | |
|-----------|---|
| Chapter 1 | Introduction. |
| Chapter 2 | An adapted model of burnout for teachers in the North West Province. |
| Chapter 3 | The validation of the Utrecht Work Engagement Scale for teachers in the North West Province. |
| Chapter 4 | Occupational stress, organisational commitment and ill-health of teachers in the North West Province. |
| Chapter 5 | A model of work-related ill-health of teachers in a district of the North West Province. |
| Chapter 6 | A model of work-related well-being for teachers in the North West Province. |
| Chapter 7 | Conclusions, limitations and recommendations. |

1.5 CHAPTER SUMMARY

Chapter 1 focuses on the problem statement, objectives and research method in this study.

Chapter 2 encompasses the construct equivalence of an adapted version of the Maslach Burnout Inventory in the North West Education Department.

REFERENCES

- Adams, E. (2001). A proposed causal model of vocational teacher stress. *Journal of Vocational Education and Training*, 53(2) 223. (<http://www.triangle.co.uk>)
- Antonovsky, A. (1987). *Unraveling the mystery of health*. San Francisco, CA: Jossey-Bass.
- Arbuckle, J.L. (1997). *Amos user's guide version 3.6*. Chicago: Smallwaters.
- Blau, G.J. & Boal, K.B. (1987). Conceptualizing how job involvement and organizational commitment affect turnover and absenteeism. *Academy of Management Review*, 12, 288-300.
- Booth, P. (1995). PR in the IT industry. *South African Public Relations Journal*, 1(5), 16.
- Burns, N. & Grove, S.K. (1993). *The practice of nursing research, conduct, critique, and utilization* (2nd ed.). Philadelphia: W.B. Saunders.
- Byrne, B.M. (2001). *Structural equation modeling with Amos: Basic concepts, applications and programming*. Mahwah, NJ: Lawrence Erlbaum.
- Cartwright, S. & Cooper, C.L. (2002). *ASSET: An Organisational Stress Screening Tool – The Management Guide*. Manchester: RCL Ltd.
- Cash, D. (1988). A study of the relationship of demographics, personality, and role stress to burnout in intensive care unit nurses. *Dissertation Abstracts International*, 49, 22585A.
- Castro-Leal, F. (1996). *Poverty and inequality in the distribution of public education spending in South Africa*. Poverty and Social Policy Department Discussion Paper Series. Washington: World Bank.
- Cherniss, C. (1980). *Staff burnout*. Beverly Hills, CA: Sage.
- 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* (2nd ed.). Orlando, CA: Academic Press.
- Cooper, C.L., Dewe, P.J. & O'Driscoll, M.P. (2001). *Organisational stress: A review and critique of theory, research, and applications*. Thousand Oaks, CA: Sage.
- Cordes, C.L. & Dougherty, T.W. (1993). A review and an integration of research on job burnout. *Academy of Management Review*, 18, 621-656.
- Cropanzano, R., James, K. & Konovsky, M.A. (1993). Dispositional affectivity as a predictor of work attitudes and job performance, *Journal of Organizational Behavior*, 14, 595-606.
- Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. New York: Harper.

- De Jager, F. (1988). Die uitbrandingsindroom. *Lyra Academica*, 3, 36-49.
- De Witt, J.T. (1987). Die professionele uitbrandingsindroom: 'n Onderwysbestuurperspektief. *Suid-Afrikaanse Tydskrif vir Opvoedkunde*, 7, 264-271.
- Demerouti, E., Nachreiner, F., Bakker, A.B. & Schaufeli, W.B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology*, 56, 499-512.
- Department of Education. (1996). *Interim policy for early childhood development*. Pretoria.
- Erasmus, J. (1995). *South Africa's nine provinces: A human development profile*. Development Bank of Southern Africa: Halfway House.
- Farber, B.A. (1991). *Crisis in education: Stress and burnout in the American teacher*. San Francisco: Jossey-Bass.
- Fryer, G., Poland, J., Bross, D. & Krugman, R. (1988). The child protective service worker: A profile of needs, attitudes and utilisation of professional resources. *Child Abuse & Neglect*, 12, 481-490.
- Gold, Y. & Roth, R. A. (1993). *Teachers managing stress and preventing*. London: Falmer.
- Goldberg, D.P. & Williams, P. (1988). A user's guide to the GHQ. London: NFER, Nelson.
- Golembiewski, R.T. & Munzenrider, R.F. (1998). *Phases of burnout: Development in concepts and applications*. New York: Praeger.
- Greenberg, S. (1984). *Stress and the teaching profession*. Baltimore: PH Brooks.
- Human, L. (1995) Multiculturalism and managing diversity: Are they the same? *Human Resource Management*, 11(4), 8-9.
- Ivancevich, J.M. & Matteson, M.T. (1990). *Organizational behavior and management* (2nd ed.). Boston: Irwin.
- Johnson, S. & Cooper, C. (2003). *The construct validity of the ASSET stress measure*. Manuscript made available by authors.
- Judge, T.A. (1993). Does affective disposition moderate the relationship between job satisfaction and voluntary turnover? *Journal of Applied Psychology*, 78, 395-401.
- Kammann, R. & Flett, R. (1983). Affectometer 2: A scale to measure current level of general happiness. *Australian Journal of Psychology*, 35, 259-265.
- Karasek, R.A. (1979). Job demands, job decision latitude, and mental strain: Implications for job redesign. *Administrative Science Quarterly*, 24, 285-308.
- Keane, A., Ducette, J. & Adler, D.C. (1985). Stress in ICU and non-ICU nurses. *Nursing Research*, 34, 231-236.
- Kunzel, R. & Schulte, D. (1986). Burn-out and reality shock among clinical psychologists. *Zeitschrift für Klinische Psychologie, Forschung und Praxis*, 15, 303-320.

- Landsbergis, P.A. (1988). Occupational stress among health care workers: A test of the job demands-control model. *Journal of Organizational Behaviour*, 9, 217-239.
- Lee, R.T. & Ashforth, B.E. (1996). A meta-analytic examination of the correlates of the three dimensions of job burnout. *Journal of Applied Psychology*, 81, 123-133.
- Levert, 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, 36-43.
- Levin, I. & Stokes, J.P. (1989). Dispositional approach to job satisfaction: Role of negative affectivity. *Journal of Applied Psychology*, 74, 752-758.
- Maslach, C. (1978). The client role in staff burnout. *Journal of Social Issues*, 34(4), 111-124.
- Maslach, C. & Jackson, S.E. (1986). *The Maslach Burnout Inventory* (2nd ed.). Palo Alto, CA: Consulting Psychologists Press.
- Maslach, C. & Leiter, M.P. (1997). *The truth about burnout*. San Francisco: Jossey Bass.
- Maslach, C., Jackson, S.E. & Leiter, M. (1996). *Maslach Burnout Inventory: Manual* (3rd ed.). Palo Alto, CA: Consulting Psychologists Press.
- Maslach, C., Schaufeli, W.B. & Leiter, M.P. (2001). Job burnout. *Annual Review of Psychology*, 52, 397-422.
- Matheny, K.B., Gfroerer, C.A. & Harris, K. (2000). Work stress, burnout, and coping at the turn of the century: An individual psychology perspective. *Journal of Individual Psychology*, 56(1), 74-87.
- Meltzer, H. & Nord, W.R. (1981). *Making organizations humane and productive: A handbook for practitioners*. New York : Wiley.
- Mesthri, R. (1999). The role of principals in the management of stress and burnout. *Education Practice*, 3, 19-23.
- Meyer, J.P., Stanley, D.J., Herscovitch, L. & Topolnytsky, L. (2002). Affective, continuance and normative commitment to the organization: A meta-analysis of antecedents, correlates, and consequences. *Journal of Vocational Behavior*, 61, 20-52.
- Miller, K.I., Ellis, B.H., Zook, E.G. & Lyles, J.S. (1990). An integrated model of communication, stress, and burnout in the workplace. *Communication Research*, 17, 200-326.
- Moyle, P. (1995). The role of negative affectivity in the stress process: Tests of alternative models. *Journal of Organizational Behavior*, 16, 647-668.
- NCCRD (2000). Teachers understanding of C2005. (<http://education.pwv.gov.za>)

- Ngwezi, A.A. (1989). *Stress levels and coping styles amongst teachers*. Unpublished MA dissertation, University of Pretoria, Pretoria.
- Niehaus, L., Myburgh, C.P.H. & Kok, J.C. (1995). Selfhandhawingsvermoë van hoërskool-onderwysers. *Suid-Afrikaanse Tydskrif vir Opvoedkunde*, 15(2), 71-78.
- Oliver, R.W. (1999). *The shape of things to come*. New York: McGraw-Hill.
- Poortinga, Y.H. (1989). Equivalence of cross-cultural data: An overview of basic of basic issues. *International Journal of Psychology*, 24, 737-756.
- Rothmann, S. (2002, March). *Burnout research in South Africa*. Paper presented at the 1st South African Conference on Burnout, Potchefstroom.
- Rothmann, S. (2003). Burnout and engagement: A South African Perspective. *South African Journal of Industrial Psychology*, 29(4), 16-25.
- Rowe, M. (2000). Skills training in the long-term management of stress and occupational burnout. *Current Psychology*, 19, 215-229.
- Salanova, M., Llorens, S., García-Renedo, M., Burriel, R., Bresó, E. & Schaufeli, W.B. (in press). *Are cynicism and depersonalization different dimensions of burnout?*
- Sammut, R.G. (1997). Psychiatric nurses' satisfaction: The effect closure of a hospital. *Journal of Advanced Nursing*, 26, 20-24.
- SAS Institute. (2000). *The SAS System for Windows: Release 8.01*. Cary, NC: SAS Institute Inc.
- Schaufeli, W.B. & Bakker, A.B. (2001). Werk en welbevinden: Naar een positieve benadering in de Arbeids- en Gezondheidspsychologie [Work and well-being: Towards a positive occupational health psychology]. *Gedrag en Organizaatie*, 14, 229-253.
- Schaufeli, W.B. & Bakker, A.B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behaviour*, 25, 1-23.
- Schaufeli, W.B. (2003). Past performance and future perspectives of burnout research. *South African Journal of Industrial Psychology*, 29(4), 1-15.
- 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., Salanova, M., González-Romá, V. & Bakker, A.B. (2002). The measurement of engagement and burnout: A confirmative analytic approach. *Journal of Happiness Studies*, 3, 71-92.
- Seligman, M. E. P. & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist*, 55, 5-14.
- Semmer, N. (1996). Individual differences, work stress and health. In M.J. Schabracq, J.A.M. Winnubst & C.L. Cooper (Eds.), *Handbook of work and health psychology*. New York: Wiley.
- Shaughnessy, J.J. & Zechmeister, E.B. (1997). *Research methods in psychology* (4th ed.). New York: McGraw-Hill.
- Siu, O.L. (2002). Occupational stressors and well-being among Chinese employees: The role of organisational commitment. *Applied Psychology: An International Review*, 51, 527-544.
- Spector, P.E. (2000). *Industrial and organizational psychology: Research and practice* (2nd ed.). New York: John Wiley.
- SPSS Inc. (2003). *SPSS 12.0 for Windows*. Chicago, IL: Author.
- Steyn, H.S. (1999). *Praktiese beduidendheid: Die gebruik van effekgroottes. (Practical significance: The use of effect sizes.)* Wetenskaplike bydraes – Reeks B: Natuurwetenskappe Nr. 117. Potchefstroom: PU vir CHO.
- Storm, K. (2002). *Burnout and work engagement in the South African Police Service*. Unpublished doctoral thesis, PU for CHE, Potchefstroom.
- Strümpfer, D.J.W. (1990). Salutogenesis: A new paradigm. *South African Journal of Psychology*, 20, 265-276.
- Strümpfer, D.J.W. (1995). The origins of health and strength: from 'salutogenesis' to 'fortigenesis'. *South African Journal of Psychology*, 25, 81-89.
- Tabachnick B.G. & Fidell, L.S. (2001). *Using multivariate statistics* (4th ed.). Boston, MA: Allyn & Bacon.
- Tytherleigh, M.Y. (2003). What employers may learn from English higher education institutions: A fortigenic approach to occupational stress. *SA Journal of Industrial Psychology*, 29(4), 101-106.
- Van de Vijver, F. & Leung, K. (1997). *Methods and analysis for cross-cultural research*. Thousand Oaks, CA: SAGE Publications.
- Van de Vijver, F. & Tanzer, N.K. (1997). Bias and equivalence in cross-cultural assessment: An overview. *European Review of Applied Psychology*, 47, 263-279.

- Van der Linde, A.H., Van der Westhuizen, P.C. & Wissing, M.P. (1999). Burnout in female teachers. *South African Journal of Education*, 19(3), 192-197.
- Van Dierendonck, D., Schaufeli, W.B. & Buunk, B. P. (1993). The evaluation of an individual burnout intervention program: The role of inequity and social support. *Journal of Applied Psychology*, 83, 392-407.
- Watson, D., Pennebaker, J.W. & Folger, R. (1986). Beyond negative affectivity: Measuring stress and satisfaction in the work-place. *Journal of Organizational Behavior Management*, 8, 141-157.
- Winefield, A.H., Gillespie, N., Stough, C., Dua, J. & Hapuararchchi, J. (2002). *Occupational stress in universities: A national survey*. Melbourne: National Tertiary Education Union.
- Wood, R. (1995). Black managers in a white corporation: Some dilemmas. *Human Resource Management*, 11(4), 12-14.

CHAPTER 2

ARTICLE 1

AN ADAPTED MODEL OF BURNOUT FOR TEACHERS IN SOUTH AFRICA*

L.T.B. JACKSON

S. ROTHMANN

*WorkWell: Research Unit for People, Policy and Performance, Potchefstroom Campus,
North-West University*

ABSTRACT

The objectives of this study were to determine the psychometric properties of an adapted version of the Maslach Burnout Inventory-General Survey (MBI-GS) for South African teachers in different language groups and to determine the differences between burnout of different demographic groups. A cross-sectional survey design was used. Stratified random samples ($N = 1177$) were taken of teachers in the North West Province in South Africa. An adapted version of the MBI-GS and a biographical questionnaire were administered. Structural equation modelling confirmed a three-factor model of burnout, consisting of Exhaustion, Mental Distance and Professional Efficacy. All three factors showed acceptable internal consistencies and construct equivalence for two language groups. The results showed that practically significant differences exist between aspects of burnout in demographic groups.

OPSOMMING

Die doelstellings van hierdie studie was om die psigometrie eienskappe van 'n aangepaste weergawe van die Maslach Uitbrandingsvraelys – Algemene Opname (MBI-GS) vir Suid-Afrikaanse onderwysers te bepaal en om verskille tussen die uitbrandingsvlakke van verskille demografiese groepe vas te stel. 'n Dwarsnee opname-ontwerp is gebruik. Gestratifiseerde ewekansige steekproewe ($N = 1177$) is van onderwysers in die Noordwes Provinsie in Suid-Afrika geneem. 'n Aangepaste weergawe van die MBI-GS en 'n biografiese vraelys is afgeneem. Strukturele vergelykingsmodellering het 'n drie-faktor model van uitbranding, bestaande uit Uitputting, Mentale Afstand en Professionele Doeltreffendheid bevestig. Al drie faktore het aanvaarbare interne konsekwentheid en konstruekwivalensie vir twee taalgroepe getoon. Die resultate het prakties betekenisvolle verskille tussen aspekte van uitbranding in demografiese groepe aangetoon.

* This material is based upon work supported by the National Research Foundation under Grant number 2053917.

The World Competitive Report continues to rank South Africa poorly in respect of Human Resource Management and Development (Pons & Daele, 2002). The World Economic Forum (2002) ranked South Africa 34th position on a list of 75 countries in 2001. The South African education system accommodates among others more than 12,3 million learners, 29 386 primary and secondary schools, 375 000 educators, 5 000 inspectors and subject advisers, and 68 000 officials, managers and support personnel. A number of initiatives have been taken since 1994 to improve education in the country such as a significant increase in education expenditure from R31,8 billion to R51,1 billion in 2000 (Department of Education, 2001). However, racism, violence and other manifestations of antisocial values and behaviour are evident in some schools, disruption by learner boycotts and teacher strikes, shortage of skilled and capable personnel, the number of Senior Certificate passes with endorsement for university entrance drop by 14% between 1995 and 2001 (Department of Education, 2001). The role of teachers in public schools is thus important in eradicating the abovementioned problems, but there are a number of individual and situational factors that determine the effectiveness of teacher, including burnout.

A report on employment and working conditions of teachers (ILO) already in 1981 concluded that job-related stress was a growing problem facing teachers. The executive summary of the 1995 Sectoral Activities Programme working paper of the salaried employees and professional workers branch identified burnout as a major problem in the teaching fraternity (ILO, 1995). A number of studies have shown that burnout, job dissatisfaction, depression, anxiety, and a number of physical health consequences are prominent in today's teachers (Pomaki & Anagnostopoulou, in press). These negative outcomes are also evident in the South African education system. Recent newspaper headings have identified the recruitment of new teachers and the retention of them as a major challenge for the Department of Educational – *Most SA teachers ready to quit* (Citizen, 19 Apr. 1999); *Many good teachers have quit in despair because of the OBE system* (Star, 13 Aug. 2001); *Profoundly sad so many teachers are quitting* (Citizen, 25 Jul. 2002); *Stress takes big toll on teachers* (Pretoria News, 2 Dec. 2002). It seems thus, important and relevant to investigate the burnout of South African teachers.

The term 'burnout' was first introduced in the late sixties and early seventies of the past century in the United States as a metaphor to describe a 'state or process of mental exhaustion' (Schaufeli, 2003). The Maslach Burnout Inventory (MBI) dominates the field of

burnout research. The model underlying the MBI holds that burnout is a multidimensional syndrome that consists of three cognitive/affective components: emotional exhaustion; depersonalisation or becoming callous towards and withdrawn from clients or colleagues; and a sense of lack of personal accomplishment at work. In its strongest form the model maintains that the entire component parts of the syndrome are necessary and relevant for defining burnout (Leiter, 1988a).

Critics of the burnout model underlying the MBI (e.g. Garden, 1991; Shirom, 1989) have suggested that a unidimensional concept of burnout consisting of emotional and physical exhaustion is a better alternative on both logical and empirical grounds. It emerges as the first factor in factor analysis of the scale (Maslach & Jackson, 1981) and it also corresponds to other concepts in stress management literature whereas depersonalisation in particular does not (Garden, 1987, 1989, 1991). Depersonalisation and lack of personal accomplishment are less likely to correlate with work-related causes of burnout (Shirom, 1989). These arguments are basically constant to those offered by Salanova et al. (in press), who argued that exhaustion is the basic individual stress component of the syndrome which comes close to an orthodox job strain variable (Maslach, 1993), whereas personal accomplishment is akin to the concept of efficacy beliefs (Bandura, 1999). This leaves depersonalisation as the most innovative component of burnout. They further argued that validity of depersonalisation has been questioned from the outset, because it measures several distinct attitudes, including distancing, hostility, rejection, and unconcern (Garden, 1987), therefore the internal consistency of the sub-scale is often found to be relatively low, compared to other sub-scales of the MBI that measure emotional exhaustion and personal accomplishment (Lee & Ashforth, 1996).

The association of depersonalisation and lack of personal accomplishment with the burnout construct represents an artefact of the human service sample used to create the MBI scale. Both the depersonalisation and accomplishment scales of the MBI are made up, in part, of items assessing attitudes and feelings of human service providers about the recipients of their service (Garden, 1987, 1989). In measuring burnout of human service professionals (teachers) the inclusion of these dimensions becomes a necessity.

Consistent with the definition of burnout offered by Maslach and Jackson (1981), Supek (1981) has described teachers as prone to "emotional exhaustion, cynicism towards students,

negative self-evaluation, and a general inclination to professional minimalism". Friedman (1991) argues that burnout relates to teachers and teaching more than in any other professional arena. Burnout was first observed and originally almost entirely studied as an occupational issue for people working in service professions. Schaufeli and Enzmann (1998) calculated that the largest single occupational groups studied are teachers (22%), nurses (17%), and social workers (7%). However years of research and practice suggested that burnout seems not to be a typical helper syndrome.

Although initially burnout was restricted to the helping professions it was later broadened and defined as a crisis in one's relationship with work in general and not necessarily as a crisis in one's relationship with people at work (Maslach, Schaufeli & Leiter, 2001). The three original burnout dimensions were redefined and an alternative version of the MBI – the General Survey (MBI-GS) – was developed that can also be used outside the human services (Schaufeli, Leiter, Maslach, & Jackson, 1996). Exhaustion as operationalized in the MBI-GS refers to severe fatigue irrespective of its cause; cynicism reflects an indifferent or distant attitude towards work instead of other people; and lack of professional efficacy encompasses both social and non-social aspects of occupational accomplishment.

Except for the substitution of "students" with "recipients" the basic difference between the two versions is that the cynicism scale (MBI-GS) substituted the depersonalisation scale (MBI-ES). These changes are also consistent with the previously mentioned conceptualisation of Leiter (1988a) who considers burnout as a syndrome consisting of depersonalisation or (cynicism) adopting a callous attitude towards and withdrawn from clients or colleagues. The questions that arise from these developments in burnout research is whether it is possible to get a clear picture of the syndrome when burnout is measured in the teaching profession by using the MBI-GS and not including the depersonalisation scale because depersonalisation involves other people so that its meaning cannot be broadened beyond the social relationships in which it occurs. Are cynicism and depersonalisation the same dimensions of burnout? Are they different components of the same dimension? Is it possible to experience both (neither, either) depersonalisation and (nor, or) cynicism because one relates to negative attitudes against recipients of service whereas the latter refers to a negative attitude towards your work in general when you are a human service professional?

Another question that may arise because of other developments in burnout research, is whether mean scores can be compared across various group without testing equivalence of the construct. Such information is psychometrically critical since non-invariance of the instrument across groups reduces the credibility of findings from substantive multigroup research that has assumed equivalent factorial structure (Byrne, 1993). South Africa is a multicultural society and it cannot be taken for granted that scores obtained in one culture can be compared across cultural groups. Before comparing scores across cultural groups, the construct equivalence of measuring instruments should be tested (Van de Vijver & Leung, 1997). Without a test of equivalence it is impossible to know to what extent scores or constructs underlying an instrument can be compared across cultures.

The lack of empirical research that systematically investigates teacher burnout in South Africa is a concern. The limitations of burnout research in South Africa include poorly designed studies, a lack of sophisticated statistical analyses and poorly controlled studies (Rothmann, 2003). The objectives of this study were to determine the psychometric properties of an adapted version of the Maslach Burnout Inventory-General Survey (MBI-GS) for teachers in different language groups and to determine the differences between the burnout of different demographic groups.

The Maslach Burnout Inventory

Practically speaking almost all burnout research uses the MBI, which originally has two versions, one for employees working in the human services (Human Services Survey – HSS) and one for educators (Educators Survey – ES). The main difference being that 'recipients' in the former is replaced by 'students' in the latter. The MBI-HSS/ES assesses three burnout dimensions: emotional exhaustion; depersonalisation (a callous, indifferent and cynical attitude towards recipients or students); and personal accomplishment (reversed). In fact, these represent an energetic (e.g., feeling used up), attitudinal (e.g., being cynical) and evaluative (e.g., doubting one's competence) component, respectively (Schaufeli, 2003). One would anticipate that the factorial structure and the underlying constructs of the MBI-HSS and MBI-ES should be comparable – an expectation that was realised in a paper by Gold, Batchelor and Michael (1989) with a sample of 147 fifth-year students in a teacher training program at the elementary school level (Holland & Michael, 1994). However, the psychometric results were rather disappointing when slightly adapted versions of the MBI-

HSS/ES were used outside the intended professions ("people work") (Boles, Dean, Ricks, Short & Wang, 2000).

Most exploratory factor analyses of the MBI have yielded three burnout factors representing emotional exhaustion, depersonalisation and reduced personal accomplishment for human service professionals in general (Green & Walkey, 1988; Maslach & Jackson, 1981b) and for teachers in particular (Beck & Gargiolo, 1983; Gold, 1984; Gold, Bachelor & Michael, 1989; Pierce & Molloy, 1989). Three confirmatory factor analyses of the MBI also found a three-factor solution to be optimal (Evans & Fischer, 1989; Gold et al., 1989). Nonetheless, some researchers have concluded that it has a two-factor (Brookings, Bolton, Brown & McEvoy, 1985) or four-factor (Firth, McIntee, McKeown & Britton, 1985; Iwanicki & Schwab, 1981; Powers & Gose, 1986) structure.

The apparent need for an instrument that measures burnout in contexts other than the service profession was met by the introduction of the *Maslach Burnout Inventory – General Survey* (MBI-GS) (Maslach, Jackson & Leiter, 1996). The MBI-GS assesses parallel dimensions (Exhaustion, Cynicism, and lack of Professional Efficacy) to those contained in the original MBI, except that the items do not explicitly refer to working with people (Schaufeli et al., 1996), but to work in general. Like the original MBI, the psychometric properties of the MBI-GS are encouraging. More particularly, the hypothesised three factor structure of the MBI has been confirmed in numerous (South African) studies (Naudé, 2003; Rothmann, Jackson & Kruger, 2003; Storm & Rothmann, 2003). The only more or less systematic exception to the supremacy of the three-factor structure is a two-factor model in which exhaustion and depersonalisation collapse fit better (or equally well) to the data (Holland, Micheal & Kim, 1994). Therefore, Green, Walkley and Taylor (1991) have called exhaustion and depersonalisation the 'core of burnout'. A systematic negative finding with the use of the MBI-GS is that one particular item (item 13, *I just want to do my job and not be bothered*) seems to be unsound and did not load on the sufficiently on the cynicism factor (Rothmann, Jackson & Kruger, 2003; Storm & Rothmann, 2003).

The broadening of the burnout concept with the introduction of the MBI-GS changed the meaning of the depersonalisation dimension in a fundamental way. By definition, depersonalisation involves other people so that its meaning cannot be broaden beyond the social relationship in which it occurs whereas cynicism, as operationalised by the MBI-GS

reflects an indifferent or distant attitude towards work instead of other people. This problem can be overcome by viewing depersonalisation as a special case of *mental distance*. That is, where depersonalised human service professionals exhibit a psychological distance towards the recipients of their service, cynical non-human service employees show a similar psychological distance regarding their work environment. In other words the target of mental distance differs: recipients for human service professionals and the job itself for non-human service employees (Salanova, Llorens, García-Renedo, Burriel, Bresó & Schaufeli, in press).

This argument is consistent with idea of Dean, Brandes and Dharwadkar (1998), who argue that organisational cynicism has different targets: the work organisation at large, organisational change, the work environment, and the persons at the job (i.e., other employees and recipients). These last two types of cynicism correspond with MBI-depersonalisation and MBI-cynicism, respectively. Recently, in a study among customer services representatives, Abraham (2000) discriminated empirically between these types of organisational cynicism and showed that each of them was related in a slightly different way to several outcomes such as job satisfaction, organisational commitment, and organisational citizenship behaviour. Or put differently, it seems that depersonalisation and cynicism, as measured with the MBI, are distinct constructs but yet they can be considered manifestations of the broader concept of organisational cynicism.

From a theoretical point of view one could argue that exhaustion and mental distance (cynicism and depersonalisation) constitute the two key aspects of burnout. Exhaustion refers to an incapability to perform because of drained energy, whereas mental distance indicates that the employee is no longer willing to perform because of an increased intolerance of any effort. Mental distancing or psychological withdrawal from the task can be seen as an adaptive mechanism to cope with excessive job demands and resultant feelings of exhaustion. However, when this coping strategy becomes a habitual pattern, as in cynicism or depersonalisation, it becomes dysfunctional because it disrupts adequate task performance.

A recent study by Salanova, Llorens, García-Renedo, Burriel, Bresó and Schaufeli (in press), showed that one could empirically discriminate between cynicism and depersonalisation. Therefore one should not assume that depersonalisation is measured when the MBI-GS is used for the assessment of teacher burnout. As discussed earlier, depersonalisation, a concept that involves poor social relationships (with recipients of service rendered human service

professionals such as teachers, social workers and nurses), should be part and parcel of the experiences of a burnout teacher, social workers and nurses – as operationalised by the MBI-ES and it should therefore be measured when measuring teacher burnout. Seen from this perspective one could imagine that it is therefore possible for a teacher to be depersonalised as well as cynical or neither depersonalised nor cynical, or even either depersonalised or cynical. Practically speaking, a teacher could have a negative and even callous attitude towards the teaching profession, the management of the school where he/she teaches or even the education department, and still give their best to their learners. It is also possible that a particular teacher could have a negative and even callous attitude towards a certain learner or a whole class for that matter, as a result of student misconduct, and still be dedicated to their school, the teaching profession or even the increase of literacy levels of the poor.

To date, an empirical test of the distinctiveness of MBI-depersonalisation and MBI-cynicism in relation to both other burnout dimensions still stands out (Salanova, Llorens, García-Renedo, Burriel, Bresó & Schaufeli, in press). In addition to the problematic fit of particular items, several limitations can be noted with respect to previous validity research in general, as it bears on teachers in South Africa:

- No studies have been conducted to empirically discriminate between depersonalisation and cynicism as experienced by teachers in South Africa;
- Given the South African multicultural environment, the possibility of differential perception of item content can lead to differential factorial structures for different demographic groups in the South African teaching fraternity
- The factorial structure of the adapted burnout model for teachers has not been cross-validated with independent samples using a simultaneous analysis of the data in South Africa.

In the past decades, many different factors have been found to be related to burnout in one way or the other. Most studies were cross-sectional in nature. Burnout has been associated with higher levels of education (Maslach, Leiter & Jackson, 1996). This is quite remarkable since most stress-related problems seem more prevalent among workers with low status and poor education (Fletcher, 1988). It also seems as if the type of school where one applies one's trade as teacher plays a role in determining the burnout levels that teachers experience. Byrne

(1993) has found that intermediate schoolteachers experience higher levels of exhaustion compared to elementary and secondary schoolteachers.

Singles have an increased risk of burning-out compared to those who are living with a partner (Maslach & Jackson, 1985). It is claimed that social support from partners might alleviate stress (Schaufeli & Buunk, 2002). Burnout seems to occur most frequently – at least in the USA – among young employees aged under 30 or 40, who have relatively little work experience (Maslach, Jackson & Leiter, 1996). However, this finding must be interpreted with some caution because of selective dropout. It is quite likely that employees who burned-out have left their jobs and that the survivors that consist of the elders and the experienced, is relatively healthy – the so-called "healthy worker effect" (Karasek & Theorell, 1990). However, especially in European countries, like the Netherlands, burnout is more prevalent in older age groups (Schaufeli & Van Dierendonck, 2000). Probably European employees are more reluctant to change jobs because of cultural values, and social security systems restrict labour market mobility more than in the United States (Schaufeli & Buunk, 2002).

Initially, it was claimed that women reported higher burnout-levels than men (Etzion & Pines, 1986). Greenglass (1991) has, however, pointed out, that gender is often confounded with occupational role and hierarchical positions. For instance, compared to men, women less often occupy supervisory roles in organisations and therefore they have less access to job-related rewards and high income, social status, and autonomy. When these confounding variables are taken into account, no significant gender differences in burnout are observed, except for depersonalisation. It is consistently found that males report higher depersonalisation scores than females, a finding that is in line with other gender differences such as higher prevalence of aggression among males, and higher interest in the nurturing role among females (Ogus, Greenglass & Burke, 1990).

Recently, Schaufeli and Enzmann (1998) re-analysed the findings of Lee and Ashforth's (1996) meta-analysis adding 15 more studies on the relationships of burnout with job satisfaction, organisational commitment and intentions to leave. They found that job satisfaction correlates comparatively high with all three burnout dimensions but most highly with depersonalisation (27% shared variance), followed by exhaustion, and reduced personal accomplishment (20% and 16% shared variances). Although less strongly than job satisfaction, organisational commitment consistently correlates negatively with emotional

exhaustion and depersonalisation (16% shared variance). The relationship with reduced personal accomplishment is clearly weaker (5% shared variance). Similar results are found with respect to the intentions to quit which shares 20% variances with emotional exhaustion, 12% with depersonalisation, and 6% with reduced personal accomplishment.

The above discussion leads to the following hypotheses:

- H1: Burnout (as measured by the MBI-GS and depersonalisation scale of the MBI-ES) is a three dimensional construct (Cynicism and depersonalisation collapse into one mental distance construct together with exhaustion and a lack of professional efficacy form the syndrome burnout. The scales of the adapted MBI-GS show acceptable internal consistency.
- H2: Burnout is an equivalent construct for Afrikaans and African teachers in the North West Province of South Africa
- H3: Significant differences exist regarding the burnout dimension scores of teachers based on biographical characteristics.

METHOD

Research design

A cross-sectional survey design was used to reach the objectives of this research.

Study population

Approximately 28 000 teachers are employed by the North West Education Department. Seven school districts were randomly sampled from a group of 12 in the North West Province (South Africa). Two school circuits were randomly sampled from the district. A circuit could consist of up to 40 schools. Five thousand (representing 17,9% of the population) questionnaires were sent to all teachers in the schools in a particular circuit if that circuit was randomly selected. A total of 1 300 completed questionnaires were returned. Only 1177 of the questionnaires were used for analysis of the data. This represents a 23,54% response rate. Table 1 presents some of the characteristics of the participants.

Table 1

Characteristics of the Participants

Item	Category	Percentage
Type of school	Primary school	61,20
	Intermediate school	5,60
	Combined school	2,90
	Secondary school	30,20
Position	Post level 1 – teacher	76,28
	Post level 2 – Head of Department	15,06
	Post level 3 – Deputy Principal	6,66
	Post level 4 – Principal	1,64
Education	Grade 12 + Education Diploma	33,16
	Grade 12 + Higher Education Diploma or B. Degree	45,68
	Grade 12 + Education Diploma + Honours Degree	18,51
	Grade 12 + Education Diploma + Masters Degree	2,64
Gender	Male	30,52
	Female	69,48
Marital status	Single	21,34
	Engaged	4,18
	Married	46,25
	Separated/Divorce/Death	3,22
	Remarried	1,57

The sample consisted mainly of permanent (89,42%) Setswana speaking (45,88%) females (69,48%), who are married (46,25%), possess a Grade 12 certificate and an Education Diploma/B.Degree (45,68%), who have not experienced a major stressful event over the last six months (56,69%) and who are members of a trade union (91,25%).

Procedure

The Director-General of the North West Education Department was asked for permission to conduct the study. Meetings were convened with the management teams in the districts that were randomly selected to be included in the sample. The role of the district manger was to provide dates of their principal meetings where presentations where made regarding the objective of the study. Principals were provided with questionnaires to give to their staff. Envelopes with stickers were also included in this package to ensure confidentiality. The completed questionnaires were to be given to the principal, who then deposited it with the circuit manager for collection at the circuit office.

Measuring instrument

The Maslach Burnout Inventory - General Survey (MBI-GS) was used to measure the Exhaustion (5 items), Cynicism (5 items) and Professional Efficacy (6 items) dimensions of burnout. The Depersonalisation (5 items) dimension of the Maslach Burnout Inventory – Educator Survey (MBI – ES) was also included in the questionnaire. On this scale the word 'recipients' (MBI - GS), found on the original scale were replaced by 'student' (ES). Responses, to 21 items, are made on a six point scale varying from 0 (*never occurs*) to 6 (*occurs everyday*). High scores on Exhaustion and Cynicism/Depersonalisation, and low scores on Professional Efficacy are indicative of burnout. Internal consistencies (Cronbach coefficients alphas) for the MBI – GS reported by Maslach et al. (1996) varied from 0,87 to 0,89 for Exhaustion, 0,73 to 0,84 for Cynicism and 0,76 for Professional Efficacy. An internal consistency, 0,79 was reported for Depersonalisation as measured by the MBI – ES (Maslach & Jackson, 1986).

A biographical questionnaire was developed to gather information about the demographic characteristics. Other information that was gathered included, type of school, job level, age, gender, considerations to quit, possession of the right equipment to teach effectively.

Statistical analysis

The statistical analysis was carried out with the help of the SAS-program (SAS Institute, 2000). Cronbach alpha coefficients and inter-item correlation coefficients were used to assess the reliability and validity of the MBI-GS (Clark & Watson, 1995). Descriptive statistics (e.g. means, standard deviations, skewness and kurtosis) were used to analyse the data.

In order to test the factorial validity and construct equivalence of the MBI-GS for different language groups, structural equation modelling (SEM) methods were used with the maximum likelihood method of the AMOS program (Arbuckle, 1999). According to Jöreskog (1971), all tests of invariance across groups should begin with a global test of the equality of their covariance structures. In testing for these equivalencies, sets of parameters are tested in a logical order and by increasing restrictions in every step. The sets of parameters that are of most interest regarding group variances are: (a) factor loading paths, (b) factor variances/covariances, and (c) structural regression paths, while, according to Bentler (1995)

equality of error variances and covariances is generally the least important hypothesis to test, due to the restrictive nature of these tests.

The general procedure for the testing of hypotheses related to group invariance starts with scrutiny of the measurement model. The pattern of factor loadings for each observed measure should be tested first for its equivalence across the groups. Once the group invariances have been identified, these parameters are constrained equally, while subsequent tests of the structural parameters are conducted. While testing each new set of parameters, those known to be group-invariant are equally constrained, thus testing a series of increasingly restrictive hypotheses in an orderly sequence of analytic steps (Byrne, 2001). Before the factorial invariance can be tested as described above, it is important to consider a baseline model for each group separately, which best fits the data from the perspectives of both parsimony and substantive meaningfulness.

Hypothesized 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 & Sörbom, 1993). Researchers have addressed the χ^2 limitations by developing goodness-of-fit indices that take a more pragmatic approach to the evaluation process. The following goodness-of-fit indices which are recommended by Byrne (2001) were used in this study: a) The χ^2 /degrees of freedom ratio (CMIN/DF), b) The standardized RMR; c) the Goodness of Fit Index (GFI); d) The Adjusted Goodness-of-Fit Index (AGFI); e) The Normed Fit Index (NFI); f) The Comparative Fit Index (CFI); g) The Tucker-Lewis Index (TLI), and h) The Root Mean Square Error of Approximation (RMSEA).

Multivariate analysis of variance (MANOVA) was used to determine the significance of differences between the burnout (exhaustion, cynicism and professional efficacy) of demographic groups. MANOVA tests whether mean differences among groups on a combination of dependent variables are likely to have occurred by chance (Tabachnick & Fidell, 2001). In MANOVA a new dependent variable that maximises group differences is created from the set of dependent variables. One-way analysis is then performed on the newly created dependent variable. Wilk's lambda was used to test the significance of the effects. Wilk's lambda is a likelihood ratio statistic that tests the likelihood of the data under the

assumption of equal population mean vectors for all groups against the likelihood under the assumption that the population mean vectors are identical to those of the sample mean vectors for the different groups. When an effect was significant in MANOVA, one-way analysis of variance (ANOVA) was used to discover which dependent variables had been affected. Because multiple ANOVAs were used, a Bonferroni type adjustment was made for inflated Type 1 error. Tukey tests were done to indicate which groups differed significantly when ANOVAs were done.

T-tests were used to determine differences between the groups in the sample. Effect sizes (Cohen, 1988; Steyn, 1999) were used in addition to statistical significance to determine the significance of relationships. Effect sizes indicate whether obtained results are practically significant. A cut-off point of 0,50 (medium effect) (Cohen, 1988) was set for the practical significance of differences between means.

RESULTS

Hypothesised model

The following hypothesised models of an adapted version of the MBI-GS were initially tested:

- Model 1: A 1-factor model consisting of 21 items (16 items of the MBI-GS and 5 items of the Depersonalisation sub-scale of the MBI-ES).
- Model 2: A 3-factor model consisting of Exhaustion (5 items), Mental Distance (10 items) and Professional Efficacy (6 items).
- Model 3: A 4-factor model consisting of Exhaustion (5 items), Cynicism (5 items), Depersonalisation (5 items) and Professional Efficacy (6 items).

Results of the structural equation analyses for the four models appear in Table 2.

Table 2

Goodness-of-fit Statistics for Hypothesised MBI-GS Models

Model	Language	χ^2	χ^2/df	RMR	GFI	AGFI	NFI	TLI	CFI	RMSEA
Model 1 1-factor	Afrikaans	1174,45	6,21	0,11	0,69	0,63	0,60	0,60	0,64	0,12
	African	1363,42	7,21	0,09	0,81	0,77	0,60	0,60	0,64	0,09
Model 2 3-factor	Afrikaans	593,08	3,19	0,07	0,85	0,82	0,80	0,83	0,85	0,08
	African	745,22	4,01	0,06	0,91	0,89	0,78	0,80	0,83	0,06
Model 3 4-factor	Afrikaans	481,46	2,63	0,07	0,89	0,86	0,84	0,88	0,89	0,07
	African	699,06	3,82	0,06	0,91	0,89	0,80	0,82	0,84	0,06
Model 4 3-factor	Afrikaans	481,53	2,62	0,07	0,89	0,86	0,84	0,88	0,89	0,07
	African	699,08	3,80	0,06	0,91	0,89	0,80	0,82	0,84	0,06

Statistically significant χ^2 values of 1174,452 ($df = 189$; $p = 0,00$) and 1363,42 ($df = 189$; $p = 0,00$) for the Afrikaans and African groups respectively revealed a poor overall fit of the 1-factor model to the data. Model 1 was also not good from a practical perspective. GFI, NFI, TLI and CFI values lower than 0,90 and RMSEA value higher than 0,08 is indicative of failure to confirm the hypothesised model.

Table 2 shows that Model 2 fit the data better for the Afrikaans sample ($\chi^2 = 593,08$; $df = 186$, $p = 0,00$) and the African sample ($\chi^2 = 745,22$; $df = 186$, $p = 0,00$), although the fit statistics indicated a relatively poor fit of model to the data (e.g. GFI, NFI, TLI and CFI values were all lower than 0,90). Models 3 and 4 fitted the data even better for both groups. However, both models fitted the data relatively poorly. For the Afrikaans sample statistically significant differences were obtained for both Model 3 ($\chi^2 = 481,46$; $df = 183$, $p = 0,00$) and Model 4 ($\chi^2 = 481,53$; $df = 184$, $p = 0,00$). For the African sample statistically significant differences were also obtained for both Model 3 ($\chi^2 = 699,06$; $df = 183$, $p = 0,00$) and Model 4 ($\chi^2 = 699,08$; $df = 184$, $p = 0,00$). Also, the fit indices indicated relatively poor fit (e.g. GFI, NFI, TLI and CFI values were all lower than 0,90) and the necessity of respecification of the obtained models.

For both the Afrikaans sample ($\chi^2_{\text{Difference}} = 0,06$; $df = 1$) and African sample ($\chi^2_{\text{Difference}} = 0,02$; $df = 1$) the differences between Models 3 and 4 were not statistically significant, while all the fit indices were the same. However, the χ^2/df ratios of Model 4 (compared to Model 3) were somewhat lower for both samples.

Next, the factorial validity of the adapted MBI model for two language groups was assessed for the groups separately. The full 3-factor model consisting of 21 items was tested for each language category separately. Statistics of the fit between the theoretical model and the empirical data are given in Table 3.

Table 3

Goodness-of-fit Statistics for the new Hypothesised 3-factor MBI-GS Model

Model	Language	χ^2	χ^2/df	RMR	GFI	AGFI	NFI	TLI	CFI	RMSEA
Model 4 3-Factors	Afrikaans	481,53	2,62	0,07	0,89	0,86	0,84	0,88	0,89	0,07
	African	699,08	3,80	0,06	0,91	0,89	0,80	0,82	0,84	0,06
Model 4.1 Delete 13	Afrikaans	410,99	2,49	0,07	0,90	0,87	0,86	0,90	0,91	0,06
	African	595,41	3,33	0,06	0,93	0,91	0,82	0,84	0,86	0,06
Model 4.2 Delete 18	Afrikaans	338,00	2,30	0,06	0,91	0,89	0,88	0,91	0,93	0,06
	African	490,57	3,34	0,06	0,94	0,92	0,84	0,87	0,88	0,05
Model 4.3 Error 9 & 10	Afrikaans	313,56	2,15	0,06	0,92	0,90	0,89	0,92	0,94	0,06
	African	470,67	3,22	0,05	0,94	0,92	0,85	0,87	0,89	0,05
Model 4.4 Error 14 & 15	Afrikaans	310,05	2,14	0,06	0,92	0,90	0,89	0,92	0,94	0,05
	African	417,04	2,88	0,0508	0,95	0,93	0,87	0,89	0,91	0,05

Although various fit indices for Model 4 are substantially improved compared to the first three models, there is still some evidence of misfit. For example χ^2/df are not smaller than 2, the NFI, TLI and CFI values are not above the critical 0,90 (Hoyle, 1995). Looking at the regression weights, two parameters, which represent the cross-loading of Item 13 and 14 on the Efficacy factor, stood apart from the rest and accounts for substantial misspecification of the hypothesised factor loading. This might be caused by the ambivalence of the particular items. Models 4.1 and 4.2 represent re-specifications of the Model 4 after deletion of Item 13 ("I just want to do my work and not be bothered") and item 18 ("I've become more callous toward people since I took this job") respectively. Item 13 loaded on Professional Efficacy (instead of Cynicism where it is supposed to load), while item 18 showed standardised residuals higher than the cut-off point of 2,58. Standardised residuals represent estimates of the number of standard deviations the observed residuals are from the zero residuals that would exist if model fit were perfect (Byrne, 2001). The standardised residuals of item 18 relatively to others items were as follows: a) 6,48 – Item 17; b) 3,12 – Item 16; c) 4,24 – Item 14; d) 2,66 – Item 10, and e) -2,63 – Item 4.

Post-hoc analysis

Modification indices (MI) were considered to pinpoint other areas of misspecification in the model. The constrained parameters exhibit that the highest degree of misfit lies in the error covariance matrix and represent a correlated error between item 14 and 15 – Model 4.3 (MI = 26,98 for the Afrikaans language group and MI = 37,28 for the African language group) and item 11 and 12 – Model 4.4 (MI = 17,85 for the Afrikaans language group and MI = 57,68 for the African language group). Compared with the MI values for all other error covariance parameters, these values are exceptionally high and clearly in need of re-specification. Based on the modification indices and on theoretical considerations, Model 4 was re-specified, with these parameters freely estimated. Following Byrne (2001), errors item pairs (i.e. MBI 4 – MBI 5 and MBI 11 – MBI 12) were allowed to correlate. Model 4.3 and 4.4 represent re-specifications of the Model 4 after deletion of Item 13 (Model 4.1) and 18 (Model 4.2) respectively. Results of the analysis done in this study appear in Table 3.

Inspection of Model 4.4 in Table 3 indicates the best fit for the re-specified model. Although the χ^2 value ($df = 146, p = 0,00$) is still high, it is considerably lower than in Model 1. All the other fit statistics indicate excellent fit of the measurement model and the data. Since this model fit was satisfactory and the results agreed with the theoretical assumptions underlying the traditional and extended model of the burnout of teachers, no further modifications of the model were deemed necessary. The final model was based on 19 of the original 21 items and included a correlated error between items 4 and 5 and 11 and 12. The results provide partial support for hypothesis 1.

Next, tests of invariance in different language groups for the adapted MBI-GS model were determined, and these are indicated in Table 4.

Table 4

Factorial Invariance of the Adapted MBI-GS Model

Model	Groups	Comparative model	χ^2	df	$\Delta\chi^2$	Δdf	p
Hypothesised model - (Model 4 – 3 factors)			769,47	290			
Factor loadings, variances, and covariances constrained	Afrikaans / African	Model 4 (3 factor)	802,65	312	33,18	22	NS

The results in Table 4 show that construct equivalence exists, with factor loadings, variances and covariances constrained equally among the Afrikaans and African language groups. These results provide support for part of Hypothesis 2 in that burnout, as measured by the Adapted MBI-GS, can be defined as a three-dimensional construct, with an equivalent structure for different language groups.

The correlations (r) between the dimensions of burnout were as follows: Exhaustion and Cynicism = 0,54; Exhaustion and Depersonalisation = 0,40; Exhaustion and Professional Efficacy = -0,23; Cynicism and Professional Efficacy = -0,34; Depersonalisation and Professional Efficacy = -0,26; and Cynicism and Depersonalisation = 0,49.

The descriptive statistics, alpha coefficients and inter-item correlations of the burnout dimensions are given in Table 5.

Table 5

Descriptive Statistics, Alpha Coefficients and Inter-Item Correlations of the MBI

Item	Mean	SD	Skewness	Kurtosis	$r(\text{Mean})$	α
Exhaustion	14,04	7,31	0,05	-0,75	0,43	0,79
Cynicism	8,49	5,28	0,34	-0,58	0,31	0,64
Depersonalisation	6,46	5,12	0,82	0,40	0,29	0,60
Mental Distance	14,95	8,99	0,52	-0,26	0,26	0,74
Professional Efficacy	29,18	5,61	-0,93	0,66	0,32	0,73

Inspection of Table 5 revealed that the scores on the factors of the model are normally distributed. Compared to the guidelines of $\alpha > 0,70$ (Nunnally & Bernstein, 1994), the Cronbach alpha coefficients of the sub-scales are considered to be acceptable, except for depersonalisation (0,60) and cynicism (0,64). Further the inter-item correlations are considered acceptable compared to the guidelines of $0,15 < r < 0,50$ (Clark & Watson, 1995). Overall, the internal consistency levels of the scales would seem to be acceptable. The results provide support for hypothesis 1 because the measuring instrument shows high internal consistency.

Next, MANOVA and ANOVA analyses followed to determine the relationship between burnout and various *demographic characteristics*, such as different types of school, job level,

considerations about quitting the profession, availability of equipment, and age category. Demographic characteristics were first analysed for statistical significance using Wilk's Lambda statistics. The results of these comparisons are reported in Table 6.

Table 6

MANOVAs – Differences in Burnout Levels of Demographic Groups

Variable	Value	<i>F</i>	<i>Df</i>	Den DF	<i>p</i>
Type of school	0,93	6,41	12	2942,4	0,00*
Job level	0,99	0,69	12	2868,3	0,76
Considering quitting the profession	0,94	3,99	16	3287,9	0,00*
Possesses the right equipment to teach	0,96	2,42	16	3266,5	0,00*
Age categories	0,95	2,07	24	3151,4	0,00*

In an analysis of Wilk's Lambda values, no statistically significant differences ($p < 0,01$) regarding burnout levels could be found between individuals at different job levels. However, statistically significant differences ($p < 0,01$) were found for type of school, considerations about quitting the profession, possession of equipment as well as age categories and burnout levels. The results provide partial support for hypothesis 3 because significant differences based on biographical characteristics exist regarding burnout scores. The relationship between burnout and those demographic variable levels that showed a statistically significant difference was further analysed to determine practical significance using ANOVA, followed by Tukey HSD tests.

The ANOVA of differences in burnout levels in the different types of schools is given in Table 7.

Table 7

ANOVAs – Differences in Burnout Levels of Different Types of Schools

Item	Primary	Intermediate	Combined	Secondary	<i>p</i>	Root MSE
Exhaustion	12,80 ^a	13,78	13,91	16,53 ^b	0,00 [*]	7,15
Cynicism	7,81	8,25	7,76	10,02	0,00 [*]	5,19
Depersonalisation	6,14	5,40	6,33	7,41	0,00 [*]	5,11
Professional Efficacy	29,64	28,25	30,33	28,47	0,00 [*]	5,54

* Statistically significant difference: $p < 0,01$

^a Practically significant differences from type (in row) where ^b (medium effect, $d \geq 0,5$) or ^c (large effect, $d \geq 0,8$) are indicated

Table 7 shows that there are statistically significant differences between levels of Exhaustion, Cynicism, Depersonalisation, and Professional Efficacy experienced in the different types of schools. Teachers in secondary schools experience higher levels of exhaustion compared to primary school teachers (practically significant, medium effect). Although statistically significant differences were also found between the other dimensions of burnout, none of these were practically significant.

Table 8

ANOVAs – Differences in Burnout Levels based on Considerations to Quit the Profession

Item	1	2	3	4	5	<i>p</i>	Root MSE
	Agree				Disagree		
Exhaustion	16,71 ^b	15,77	14,10	14,40	12,78 ^a	0,00 [*]	7,18
Cynicism	9,91	9,28	8,60	9,33	7,75	0,00 [*]	5,22
Depersonalisation	7,74	6,41	6,51	6,65	6,05	0,00 [*]	5,14
Professional Efficacy	29,01	29,57	28,75	28,02	29,60	0,03	5,57

* Statistically significant difference: $p < 0,01$

^a Practically significant differences from group (in row) where ^b (medium effect, $d \geq 0,5$) or ^c (large effect, $d \geq 0,8$) are indicated

Table 8 shows that there are statistically significant differences between levels of Exhaustion, Cynicism, and Depersonalisation experienced and the extent to which teachers consider quitting the profession. Teachers that consider quitting the profession experience higher levels of exhaustion (with a medium effect) compared to teachers who do not. No practically significant differences were found regarding Cynicism, Depersonalisation and Professional Efficacy.

Differences in the burnout levels of age categories are reported in Table 9.

Table 9

ANOVAs – Differences in Burnout Levels of Age Categories

Item	1 18 - 27	2 28 – 32	3 33 - 38	4 39 - 44	5 45 - 50	6 51 - 56	7 57 - 68	<i>p</i>	Root MSE
Exhaustion	18,19 ^b	12,98	13,52	14,98	12,94 ^a	13,74	16,89 ^b	0,00*	7,34
Cynicism	10,34 ^b	7,78	8,27	8,95	7,72 ^a	9,21	10,34	0,03	5,28
Depersonalisation	7,97	5,67	6,28	7,56	6,52	5,93	6,46	0,01	5,16
Professional Efficacy	27,78	29,58	29,53	29,28	28,54	29,29	29,07	0,46	5,65

* Statistically significant difference: $p < 0,01$

a Practically significant differences from category (in row) where b (medium effect, $d \geq 0,50$) or c (large effect, $d \geq 0,80$) are indicated

Table 9 indicates that there are statistically and practically significant differences (of medium effect) in levels of Exhaustion and Cynicism of teachers. Teachers between the age of 45 and 50 compared to those in the age groups 18 – 27 and 57 – 68 obtained practically significant lower scores on Exhaustion, while teachers in the age group 45 – 50 obtained lower scores on Cynicism than teachers in the age group 18-27. No statistically or practically significant differences were found in terms of the Depersonalisation and Professional Efficacy dimensions. Results shown in Table 6 to 9 provide support for hypothesis 3. Significant differences exist between the scores of the burnout dimensions of different demographic groups.

DISCUSSION

The aim of this study was twofold. Firstly, it was intended to test the psychometric qualities of a new three-factorial model of burnout for teachers that consists of *exhaustion*, *mental distance*, (including depersonalisation – a MBI-ES factor, and cynicism a MBI-GS factor) and *professional efficacy*. Put differently, to investigate whether cynicism and depersonalisation may be considered two different dimensions of burnout, or whether they collapsed in one construct of mental distance. Secondly, to investigate the relationship of the sub-scales with demographic variables such as type of school, job level, considerations of quitting the profession, possession of equipment to teach effectively and age category for teachers in the North West Province of South Africa.

Results showed that contrary to the findings of Salanova et al. (in press) that burnout is not characterised by two separate cynicism and depersonalisation dimensions – instead, the two collapse in one mental distance construct, which along with exhaustion and professional efficacy, constitutes the syndrome. The three-factor model fitted better to the data than a four-factor model (separate cynicism and depersonalisation dimensions). Also, the internal consistencies of the cynicism and depersonalisation sub-scales were questionable if they are treated as two independent factors.

Based on both conceptual and empirical grounds, items 13 and 18 were deleted from the adapted MBI-GS, resulting in a 19-item scale. The deletion of item 13 ("I just want to do my job and not be bothered") is consistent with previous studies (Schutte, Toppinen, Kalimo, & Schaufeli, 2000; Storm & Rothmann, 2003), where this item was excluded when testing the factorial validation of the MBI-GS. According to these authors, problems might be caused by the ambivalent nature of this item. A high score may indicate disengagement and social isolation by closing oneself off from contacts with others at work. A higher score may also indicate strong motivation and engagement. Therefore, although the deletion of item 13 was part of the post-hoc analyses and validation is needed in future studies, the decision to eliminate this item is consistent with previous research (Schutte et al., 2000; Storm & Rothmann, 2002) and should not be regarded as a model specification for the sole purpose of data fitting.

Item 18 ("I've become more callous toward people since I took this job") was also removed from the questionnaire. This item showed standardised residuals higher than 2,58 relatively to items 17 ("I feel I treat some learners if they were impersonal objects"), item 16 ("At my work I feel confident that I am effective at getting things done"), item 14 ("I have become more cynical about whether my work contributes anything"), item 10 ("In my opinion I am good at my job") and item 4 ("Working all day is really a strain for me"). The standardised residuals showed that participants possibly associated the word "callous" with Professional efficacy, and not with either Exhaustion, Cynicism or Depersonalisation.

In order to increase the fit of the three-factor model, two pairs of error terms were allowed to correlate. Although correlated error terms may be derived from specified characteristics of either respondents or the items of a survey, they represent systematic rather than random measurement error in item responses. They may derive from characteristics specific either to

the items or the respondents (Aish & Jöreskog, 1990). For example, if these parameters reflect item characteristics, they may represent a small omitted factor. However, as may be the case here, correlated errors may represent respondent characteristics that reflect bias such as yea-/nay-saying, social desirability (Aish & Jöreskog, 1990), as well as a high degree of overlap in item content (when an item, although worded differently, essentially asks the same question) (Byrne, 2001).

The results showed that the construct equivalence of the adapted MBI-GS was acceptable for the Afrikaans and African language groups. This means that the mean scores of these groups could be compared in other analyses.

The second objective of the study was to investigate the relationship between burnout and various demographic characteristics. The results indicate that a difference exists between the levels of exhaustion, mental distance and professional efficacy experienced by teachers in different types of schools. Teachers in secondary schools suffered higher levels of exhaustion compared to those in primary schools. However, this result is contrary to those of Byrne (1993), who found that intermediate school teachers experience higher levels of exhaustion compared to elementary and secondary school teachers.

Teachers that consider quitting the profession are more likely to be exhausted, cynical and treat their learners as objects (depersonalising) compared to those who do not consider quitting the profession. The result is consistent with the findings of Weisberg and Sagie (1999) that suggested that physical and mental exhaustion positively and significantly influence intentions to leave.

Teachers in the age group 45 – 50 experience significantly lower levels of exhaustion and cynicism compared to younger teachers (18 – 27) and those approaching retirement (57 – 68). Young teachers are usually excited and optimistic about helping learners when they join the profession; however, when faced with the challenges facing the teaching profession in South Africa they become disillusioned (Mesthrie, 1999). Those approaching retirement might be questioning their contributions to the profession especially if little or no progress was made in terms of promotion and financial independence. No significant differences were found for the levels of different burnout dimensions and sex. In other words male teachers do not

experience significantly higher levels of exhaustion, cynicism, depersonalisation and professional efficacy and compared to female teachers.

In conclusion, the three-factor structure and internal consistency of the burnout construct were confirmed. Based on the results obtained, it seems as if the MBI-GS including the depersonalisation sub-scale of the MBI-ES is a suitable instrument for measuring burnout of teachers.

A limitation of this study was that it relied exclusively on self-report measures. This causes a particular problem in validation studies that use self-report measures exclusively, in that it increases the likelihood that at least part of the shared variance between measures can be attributed to method variance (Schaufeli & Enzmann, 1998). Another limitation is the sampling procedure, and future studies could benefit using a stratified random-sample design. The sample was also too small to determine the structural equivalence of the new three-factor model for 11 different race or language groups in the RSA.

RECOMMENDATIONS

Based on the results of this study, it is recommended that the MBI-GS, including the Depersonalisation sub-scale of the MBI-ES, be used to assess burnout of teachers. However, items 13 and 18 should be omitted when administering the questionnaire. Interventions should be planned to manage and/or prevent burnout of teachers, because exhaustion and cynicism will lead to poor service delivery and will influence the quality teaching and learning. However, more research is needed to develop a causal model of burnout for teachers.

Although this study found the MBI-GS including the Depersonalisation sub-scale of the MBI-ES to be reliable and confirmed the three-factor structure, it is suggested that future research should focus on the new teacher burnout conceptualisation in other settings to verify the current findings. In future studies, structural equation modelling could be used to test the construct equivalence of the new teacher burnout conceptualisation for different language groups in South Africa. Future studies should also investigate the relationship between cynicism and/or depersonalisation and particular job characteristics and work-related outcomes, such as organisational commitment, job satisfaction, turnover and absenteeism.

REFERENCES

- Abraham (2000). Organizational cynicism: Bases and consequences. *Genetic, Social and General Psychology Monographs*, 126, 269-292.
- Aish, A.M. & Jöreskog, K.G. (1990). A panel model for political efficacy and responsiveness: An application of LISREL 7 with weighted least squares. *Quality and Quantity*, 19, 716-723.
- Anonymous. (1999). *Most SA teachers ready to quit*. Pretoria: *Citizen*, 19 Apr.
- Arbuckle, J.L. (1999). *Amos 4.0*. Chicago, IL: Smallwaters.
- Bandura, A. (1999). Social cognitive theory of personality. In L. Perwin & O. John (Eds.), *Handbook of personality* (2nd ed.) (pp. 154-196). New York: Guildford.
- Barnabe, C. & Burns, M. (1994). Teachers' job characteristics and motivation. *Educational Research*, 36, 171-185.
- Beck, C.L. & Gargiolo, R.M. (1983). Burnout in teachers of retarded and nonretarded children. *Journal of Educational Research*, 76, 169-173.
- Boles, J.S., Dean, D.H., Ricks, J.M., Short, J.C. & Wang, G. (2000). The dimensionality of the Maslach Burnout Inventory across small business owners and educators. *Journal of Vocational Behavior*, 56, 12-34.
- Brookings, J.B., Bolton, B., Brown, C.E. & McEvoy, A. (1985). Self-reported job burnout among female human service professionals. *Journal of Occupational Behavior*, 6, 143-150.
- Byrne, B.M. (1993). The Maslach Burnout Inventory: Testing for factorial validity and invariance across elementary, intermediate and secondary teachers. *Journal of Occupational & Organisational Psychology*, 66, 197-213.
- Byrne, B.M. (2001). *Structural equation modelling with AMOS: Basic concepts, applications and programming*. Mahwah, NJ: 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* (2nd ed.). Orlando, CA: Academic Press.
- Dean, J.W., Brandes, P. & Dharwadkar, R. (1988). Organizational cynicism. *Academy of Management Review*, 23, 314-352.

- Department of Education. 2001. *Education in South Africa: Achievements since 1994*. Pretoria: Department of Education. (Retrieved from web site: www.education.pwv.gov.za).
- Etzion, D. & Pines, A. (1986). Sex and culture in burnout and coping among human service professionals: A social psychological perspective. *Journal of Cross-Cultural Psychology*, 17, 191-209.
- Evans, B.K. & Fischer, D. (1989, August). *The dimensionality and discriminant validity of the Maslach Burnout Inventory*. Paper presented at the Canadian Psychological Association Annual Meeting, Halifax.
- Firth, H., McIntee, J., McKeown, P. & Britton, P.G. (1985). Maslach Burnout Inventory: Factor structure and norms for British nursing staff. *Psychological Report*, 57, 147–150.
- Flether, B. (1988). The epidemiology of occupational stress. In: C.L. Cooper & R. Payne (Eds.), *Causes, coping and consequences of stress at work* (pp. 3-52). Chichester, UK: John Wiley.
- Friedman, I.A. (1991). High- and low-burn-out schools: school culture aspects of teacher burn-out. *Journal of Educational Research*, 84, 325–333.
- Garden, A.M. (1987). Depersonalization: A valid dimension of burnout? *Human Relations*, 40, 545-560.
- Garden, A.M. (1989). The effect of psychological type on research findings. *Journal of Occupation Psychology*, 62, 223–234.
- Garden, A.M. (1991). The relationship between burnout and performance. *Psychological Reports*, 68, 963-977
- Gold, Y. (1984). The factorial validity of the Maslach Burnout Inventory in a sample of California elementary and junior high school classroom teachers. *Educational & Psychological Measurements*, 44, 1009–1016.
- Gold, Y., Batchelor, P. & Michael, W.D. (1989). The dimensionality of the Maslach Burnout Inventory for university students in a teacher-training program. *Educational and Psychological Research*, 49, 549–561.
- Green, D.E. & Walkey, F.H. & Taylor, A.J.W. (1991). The three factor structure of the Maslach Burnout Inventory. *Journal of Social Behavior and Personality*, 6, 453-472.
- Green, D.E. & Walkey, F.H. (1988). A confirmation of the three-factor structure of the Maslach Burnout Inventory. *Educational & Psychological Measurements*, 48, 579–585.
- Greenglass, E. (1991). Burnout and gender: Theoretical and organizational implications.. *Canadian Psychology*, 32, 562-574.

- Holland, P.J., Micheal, W.B. & Kim, S. (1994). Construct validity of the educators survey for a sample of middle school teachers. *Educational and Psychological Measures*, 54, 822-829.
- Hoyle, R.H. (1995). The structural equation modeling 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.
- International Labour Organisation (ILO). Sectoral activities programme: Salaried employees and professional workers' branch. (1995). *Occupational stress and burn-out of teachers: A review*. Geneva: International Labour Office.
- Iwanicki, E.E. & Schwab, R.L. (1981). A cross validation study of the Maslach Burnout Inventory. *Educational and Psychological Measurement*, 41, 1167-1174.
- Jacobs, E. (2002). *Stress takes big toll on teachers*. Pretoria: Pretoria News, 2 Dec.
- Jöreskog, K.G. & Sörbom, D. (1993). *LISREL 8: Structural equation modelling with the SIMPLIS command language*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Karasek, R. & Theorell, T. (1990). *Healthy work: Stress, productivity and the reconstruction of working life*. New York: Basic Books.
- Lee, R.T. & Ashforth, B.E. (1996). A meta-analytic examination of the correlates of the three dimensions of job burnout. *Journal of Applied Psychology*, 81, 123-133.
- Leiter, M.P. (1988). Burnout as a function of communication patterns. *Group and Organisational Studies*, 13, 111-128.
- Maslach, C. & Jackson, S.E. (1981a). *Maslach Burnout Inventory: Manual*. Palo Alto, CA: Consulting Psychologists Press.
- Maslach, C. & Jackson, S.E. (1981b). The measurement of experienced burnout. *Journal of Occupational Behaviour*, 2, 99-113.
- Maslach, C. & Jackson, S.E. (1985). The role of sex and family variables in burnout. *Sex Roles*, 12, 837-851.
- Maslach, C. & Jackson, S.E. (1986). *Educators Survey: Manual*. Palo Alto, CA: Consulting Psychologists Press.
- Maslach, C. & Jackson, S.E. (1986). *The Maslach Burnout Inventory* (2nd ed.). Palo Alto, CA: Consulting Psychologists Press.
- Maslach, C. (1993). Burnout: A multidimensional perspective. In W.B. Schaufeli, C. Maslach & T. Marek (Eds.), *Professional burnout: Recent developments in theory and research* (pp. 19-32). Washington: Taylor & Francis.

- Maslach, C., Jackson, S.E. & Leiter, M. (1996). *Maslach Burnout Inventory: Manual* (3rd ed.). Palo Alto, CA: Consulting Psychologists Press.
- Maslach, C., Schaufeli, W.B. & Leiter, M.P. (2001). Job burnout. *Annual Review of Psychology*, 52, 397-422.
- Mesthri, R. (1999). The role of principals in the management of stress and burnout. *Education Practice*, 3, 19-23.
- Mills, B. (2001). *Many good teachers have quit in despair because of the OBE system*. Jukskei Park, Pretoria: *Star*, 13 Aug.
- Naudé, J.L.P. (2003). *Occupational stress, coping, burnout and work engagement of emergency workers in Gauteng*. Unpublished doctoral thesis, PU for CHE, Potchefstroom.
- Nunnally, J.C. & Bernstein, I.H. (1994). *Psychometric theory* (3rd ed.). New York: McGraw-Hill.
- Ogus, E.D., Greenglass, E.R. & Burke, R.J. (1990). Gender-role differences, work stress and depersonalization. *Journal of Social Behavior and Personality*, 5, 387-398.
- Pierce, C.M.B. & Molloy, G.N. (1989). The construct validity of the Maslach burnout Inventory: Some data from down under. *Psychological Reports*, 65, 1340-1342.
- Pomaki, G. & Anagnostopoulou, T. (in press). A test and extension of the demand/control/social support model: Prediction of wellness/health outcomes in Greek teachers. *Psychology and Health*.
- Pons, A. & Deale, P. (2002). *Labour relations handbook*. Cape Town: Juta & Co.
- Powers, S., & Gose, K.E. (1986). Reliability and construct validity of the Maslach Burnout Inventory in a sample of university students. *Educational and Psychological Measurements*, 46, 251-255.
- Quail, D. (2002). *Profoundly sad so many teachers are quitting*. Pretoria: *Citizen*, 25 Jul.
- Rothmann, S. (2003). Burnout and engagement: A South African Perspective. *South African Journal of Industrial Psychology*, 29(4), 16-25.
- Rothmann, S., Jackson, L.T.B. & Kruger, M.M. (2003). Burnout and job stress in a local government: The moderating effects of sense of coherence. *South African Journal of Industrial Psychology*, 29(4), 52-60.
- Salanova, M., Llorens, S., García-Renedo, M., Burriel, R., Bresó, E. & Schaufeli, W.B. (in press). *Are cynicism and depersonalization different dimensions of burnout?*
- SAS Institute. (2000). *The SAS System for Windows: Release 8.01*. Cary, NC: SAS Institute Inc.

- Schaufeli, W.B. (2003). Past performance and future perspectives of burnout research. *South African Journal of Industrial Psychology*, 29(4), 1-15.
- Schaufeli, W.B. & Buunk, B.P. (2002) Burnout: An overview of 25 years of research and theorizing. In M.J. Schabracq., J.A.M. Winnubst & C.L. Cooper (Eds.), *Handbook of work and health psychology* (pp. 383-425). Chichester, UK: Wiley.
- Schaufeli, W.B. & Van Dierendonck, D. (2000). *Handleiding van de Utrechtse Burnout Schaal (UBOS)* [Test manual Utrecht Burnout Scale – UBOS]. Lisse: Swets and Zeitlinger.
- 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.
- Schutte, N., Toppinen, S., Kalimo, R. & Schaufeli, W.B. (2000, March). The factorial validity of the Maslach Burnout Inventory – General Survey (MBI-GS) across occupational groups and nations. *Journal of Occupational and Organizational Psychology*, 73, 53-66.
- Shirom, A. (1989). Burnout in work organisations. In C.L. Cooper & I. Robertson (Eds.). *International Review of Industrial and Organizational Psychology* (pp. 25-48). Chichester, UK: Wiley.
- Steyn, H.S. (1999). Praktiese betekenisvolheid: Die gebruik van effekgroottes. *Wetenskaplike bydraes – Reeks B: Natuurwetenskappe Nr. 117*. Potchefstroom: PU vir CHO.
- Storm, K. & Rothmann, S. (2003). A psychometric analysis of the Maslach Burnout Inventory – General Survey in the South African Police Service. *South African Journal of Psychology*, 33, 219-226.
- Storm, K. & Rothmann, S. (2003). The relationship between personality dimensions, coping and burnout of pharmacists in a corporate pharmaceutical group. *Journal of Industrial Psychology*, 29(4), 35-42.
- Supek, R. (1981). How to get rid of professional minimalism. *Issues in Education*, 1, 133-153.
- Tabachnick B.G. & Fidell, L.S. (2001). *Using multivariate statistics* (4th ed.). Boston, MA: Allyn & Bacon.
- Van de Vijver, F. & Leung, K. (1997). *Methods and data-analysis for cross-cultural research*. Thousand Oaks, CA: SAGE.

- Weisberg, J. & Sagie, A. (1999). Teachers' physical, mental, and emotional burnout: Impact on intentions to quit. *Journal of Organisational Psychology*, 3, 333 – 340.
- World Economic Forum. (2002). *The global competitive report 2001–2002*. New York: Oxford University Press. (Retrieved from web site: www.weforum.org).

CHAPTER 3

ARTICLE 2

THE VALIDATION OF THE UTRECHT WORK ENGAGEMENT SCALE FOR SOUTH AFRICAN TEACHERS*

L.T.B. JACKSON

S. ROTHMANN

*WorkWell: Research Unit for People, Policy and Performance, Potchefstroom Campus,
North-West University*

ABSTRACT

The objectives of this study were to determine the psychometric properties of the Utrecht Work Engagement Scale (UWES), to test its construct equivalence for South African teachers in different language groups and to determine the differences between work engagement of different demographic groups. A cross-sectional survey design was used. Stratified random samples ($N = 1177$) were taken of teachers in the North West Province in South Africa. The UWES and a biographical questionnaire were administered. Structural equation modelling confirmed a three-factor model of work engagement, consisting of Vigour, Dedication and Absorption. Two of the scales, namely Vigour and Dedication, showed acceptable internal consistencies. The results showed that practically significant differences exist between the work engagement of demographic groups.

OPSOMMING

Die doelstellings van hierdie studie was om die psigometrie eenskappe van die Utrechtse Werksbegeesterings-skaal (UWES) vir Suid-Afrikaanse onderwysers te bepaal, die konstrukekwivalensie daarvan vir verskillende taalgroepe te bepaal en om verskille tussen die werksbegeesterings van verskillende demografiese groepe te bepaal. 'n Dwarsdeursnee-ontwerp is gebruik. Gestratifiseerde ewekansige steekproewe ($N = 1177$) van onderwysers in die Noordwes Provinsie in Suid-Afrika is geneem. Die UWES en 'n biografiese vraelys is geneem. Strukturele vergelykingsmodellering het 'n drie-faktor struktuur vir werksbegeesterings bevestig bestaande uit Energie, Toewyding en Absorpsie. Twee van die skale, naamlik Energie en Toewyding het aanvaarbare interne konsistensie getoon. Die resultate het praktiese betekenisvolle verskille tussen die werksbegeesterings van demografiese groepe aangetoon.

* This material is based upon work supported by the National Research Foundation under Grant number 2053917.

Since 1994 South Africa has seen significant changes in legislation determining the structure and functioning of labour markets and educational institutions. Legislation such as the National Education Policy Act and the South African Schools Act of 1996 has brought about change in every school (Hayward, 2002). Some of the most noticeable changes in the education environment include, among others, consolidating 17 different educational departments in 1994 into nine provincial education departments and a national education department responsible for the financing and development of national policies for national education in 1999. The ratios of teacher to learners have increased and corporal punishment has been abolished (Mentz, 2002). If one looks at the combined effect of all the above-mentioned changes it thus seems reasonable to expect that teachers in South Africa may expect drastic changes to their working life.

An interview with a former high school teacher provides the following insight into a teacher's daily experiences: "I can't believe there was anyone more excited about getting into the classroom than I was. It was all I ever wanted to do. It was not long before I began to feel it. The more I gave, the more it seemed that the school and the students took. By my fourth year, I knew I wanted to get out. I was feeling tired by midmorning. My family could see the effects. My career was going downhill and I could not stop it." (Greenberg, 1984). In spite of the dark picture that was painted about the work of teachers, some do fairly well. Somehow they stay healthy most of the time. Through their dedication, commitment and innovative approaches some schools, educators, and management in this region continue to make a difference in promoting quality public education in the face of adverse conditions and challenges.

Psychology has long concentrated on repairing damage using a disease model of human functioning. This exclusive attention to pathology addressed the one mission of psychology, namely curing mental illness, but neglected the other two namely making the lives of all people more productive and fulfilling and identifying and nurturing high talent (Seligman, 2002). Furthermore the number articles researching negative aspects outnumber those dealing with positive aspects by a ratio of 17 to 1 (Diener, Suh, Lucas & Smith, 1999). A new movement is more concerned with the other side of the coin, and proposes clinical examination of those who are happy and move easily in the world (Anderson, 2000). Founding members (Seligman & Csikszentmihalyi, 2000) for this movement, labelled

"positive psychology" argue that the time has arrived to realise that psychology is not just the study of pathology, weakness, and damage; it is also the study of strength and virtue. Treatment is not just fixing what is broken; *it is nurturing what is best*. According to Seligman (1998), there is a set of human strengths that are most likely buffers against mental illness: courage, optimism, interpersonal skills, work ethics, hope, honesty and perseverance. Except for explaining why others *do survive* "in the jungle out there" this paradigm also provides a framework to search for possible answers to the question: "Who stays well?"

Since the beginning of this century, more attention has been paid to what has been coined *positive psychology*: the scientific study of human strength and optimal functioning. This approach is considered to supplement the traditional focus of psychology on psychopathology, disease, illness, disturbance, and malfunctioning. The recent trend to concentrate on optimal functional also aroused attention in organizational psychology, as is demonstrated by a recent plea for *positive organisational behaviour*; that is "... the study of positively oriented human resource strengths and psychological capacities that can be measured, developed, and effectively managed for performance improvement in today's workplace" (Luthans, 2002).

Because of the emergence of positive (organisational) psychology, it is not surprising that positive aspects of health and well-being are increasingly popular in Occupational Health Psychology. One of these positive aspects is work engagement, which is considered to be the antipode of burnout. While burned-out workers feel exhausted and cynical, their engaged counterparts feel vigorous and enthusiastic about their work. In contrast to previous positive approaches – such as humanistic psychology – that were largely unempirical, the current positive psychology is empirical in nature. This implies the careful operationalisation of constructs, including work engagement (Schaufeli & Bakker, 2003). A movement in the direction of positive psychology is also evident in South Africa (Rothmann, 2003; Strümpfer, 1990, 1995, 2002a; Wissing & van Eden, 2002).

Viewed from the "positive psychology" perspective it is not surprising that burnout research seems to shift towards its opposite: *work engagement*. While burnout is a metaphor commonly used to describe a state or process of mental exhaustion (Schaufeli & Enzmann, 1998), work engagement is being defined as an energetic state in which the employee is

dedicated to excellent performance at work and is confident of his or her effectiveness (Schutte, Toppinen, Kalimo & Schaufeli, 2000). In an attempt to identify the sources of teacher stress, with an almost exclusively focus on the negative aspects of teaching, little or an absence of insight is available about the well-being of teachers. It seems, therefore, also necessary to study the work of teachers in a positive way. This can be done by focussing of the concept of work engagement.

When a concept of work engagement is measured, it is important to use a valid and reliable instrument. Schaufeli, Salanova, Gonzalex-Roma and Bakker (2002) developed the Utrecht Work Engagement Scale (UWES) and found acceptable reliability for it. Two recent South African studies using confirmatory factor analysis demonstrated the factorial validity of the UWES (Naudé, 2003; Rothmann & Storm, 2003). Problem items were identified in these studies, but no studies regarding the suitability of the adapted items have been conducted. Furthermore, the UWES has not yet been standardised for teachers in South Africa. This makes it difficult to assess the levels of engagement of teachers and to compare their levels of engagement in various groups, as well as to place research results in context. Therefore, it is necessary to validate the UWES for teachers in South Africa.

Another question that may arise because of other developments in burnout research (as well as the positive perspective to it – work engagement – is whether mean scores can be compared across various group without testing equivalence of the construct. Such information is psychometrically critical since non-invariance of the instrument across groups reduces the credibility of findings from substantive multigroup research that has assumed equivalent factorial structure (Byrne, 1993). South Africa is a multicultural society and it cannot be taken for granted that scores obtained in one culture can be compared across cultural groups. Before comparing scores across cultural groups, the construct equivalence of measuring instruments should be tested (Van de Vijver & Leung, 1997). Without a test of equivalence it is impossible to know to what extent scores or constructs underlying an instrument can be compared across cultures.

The lack of empirical research that systematically investigates (teacher) well-being in South Africa is a concern. The limitations of social science research in South Africa include poorly designed studies, a lack of sophisticated statistical analysis and poorly-controlled studies

(Rothmann, 2003). The objectives of this study were to determine the psychometric properties of the Utrecht Work Engagement Scale (UWES), to test its construct equivalence for South African teachers in different language groups and to determine the differences between work engagement of different demographic groups.

Work engagement

Work engagement is the assumed opposite of burnout. Contrary to those who suffer from burnout, engaged employees have a sense of energetic and effective connection with their work activities and they see themselves as able to deal well with the demands of their job. Two schools of thought exist on the relationship between work engagement and burnout. The first approach of Maslach and Leiter (1997) assume that engagement and burnout constitute the opposite poles of a continuum of work-related well-being, with burnout representing the negative pole and engagement the positive pole. Because Maslach and Leiter (1997) define burnout in terms of exhaustion, cynicism and reduced professional efficacy, it follows that engagement is characterised by energy, involvement and efficacy. By definition, these three aspects of engagement constitute the opposites of the three corresponding aspects of burnout. In other words, according to Maslach and Leiter (1997) the opposite scoring pattern on the three aspects of burnout – as measured with the Maslach Burnout Inventory (MBI; Maslach, Jackson & Leiter, 1996) – implies work engagement. This means that low scores on the exhaustion and cynicism scales and a high score on the professional efficacy scale of the MBI are indicative of engagement.

However, the fact that burnout and engagement are assessed by the same questionnaire has at least two important negative consequences. First, it is not plausible to expect that both concepts are perfectly negatively correlated. That is, when an employee is not burned-out, this does not necessarily mean that he or she is engaged in his or her work. Conversely, when an employee is low on engagement, this does not mean that he or she is burned-out. Secondly, the relationship between both constructs cannot be empirically studied when they are measured with the same questionnaire. Thus, for instance, both concepts cannot be included simultaneously in one model in order to study their concurrent validity.

For this reason we define burnout and work engagement as two distinct concepts that should be assessed independently (Schaufeli & Bakker, 2001). Although employees will experience work engagement and burnout as being opposite psychological states, whereby the former has a positive quality and the latter a negative quality, both need to be considered as principally independent of each other. This means that, at least theoretically, an employee who is not burned-out may score high or low on engagement, whereas an engaged employee may score high or low on burnout. In practice, however, it is likely that burnout and engagement are substantively negatively correlated. In contrast to Maslach and Leiter's (1997) approach, our approach makes possible the assessment of the strength of the association between work engagement and burnout since different instruments assess both independently. It is possible to include both constructs simultaneously in one analysis, for instance, to investigate whether burnout or engagement explains additional unique variance in a particular variable after the opposite variable has been controlled for.

Work engagement is defined as follows (see also Schaufeli, Salanova, González-Romá & Bakker, 2001): Engagement is a positive, fulfilling, work-related state of mind that is characterised by vigour, dedication, and absorption. Rather than a momentary and specific state, engagement refers to a more persistent and pervasive affective-cognitive state that is not focused on any particular object, event, individual, or behaviour. Vigour is characterised by high levels of energy and mental resilience while working, the willingness to invest effort in one's work, and persistence even in the face of difficulties. Dedication refers to being strongly involved in one's work and experiencing a sense of significance, enthusiasm, inspiration, pride, and challenge. Absorption is characterised by being fully concentrated and happily engrossed in one's work, whereby time passes quickly and one has difficulties with detaching oneself from work.

Accordingly, vigour and dedication are considered opposites of exhaustion and cynicism, respectively. The continuum that is spanned by vigour and exhaustion has been labelled energy or activation, whereas the continuum that is spanned by dedication and cynicism has been labelled identification (Schaufeli & Bakker, 2001). Hence, work engagement is characterised by a high level of energy and strong identification with one's work. Burnout, on the other hand, is characterised by the opposite: a low level of energy combined with poor identification with one's work.

Those who score high on vigour usually have much energy, zest and stamina when working, whereas those who score low on vigour have less energy, zest and stamina as far as their work is concerned. Those who score high on dedication strongly identify with their work because it is experienced as meaningful, inspiring and challenging. Besides, they usually feel enthusiastic and proud about their work. Those who score low do not identify with their work because they do not experience it to be meaningful, inspiring, or challenging; moreover, they feel neither enthusiastic nor proud about their work. Those who score high on absorption feel that they usually are happily engrossed in their work, they feel immersed by their work and have difficulties detaching from it because it carries them away. As a consequence, everything else around is forgotten and time seems to fly. Those who score low on absorption do not feel engrossed or immersed in their work, they do neither have difficulties detaching from it, nor do they forget everything around them, including time.

According to Schaufeli and Bakker (2001)), engaged employees have the following characteristics:

- Engaged employees take initiative and give direction to their lives. They do not submit passively to the influence of the environment, but rather give form to it, as well as direction to their lives. If they always have to perform the same functions with the same clients they may look for challenges outside their current environment.
- Engaged employees generate their own positive feedback. They create "rewards" in the form of recognition, success, administration and appreciation through their attitudes and activities. Thereby a positive spiral is maintained.
- Engaged employees also show engagement outside their work environment. Characterised by energy and enthusiasm, both in their work and their private lives, they have a type of energy that never seems to fade.
- While discrepancies exist between the norms and values of burned-out employees and their organisations, engaged employees' norms and values correspond with those of their organisation. This situation is perhaps best explained by Pines (1993) who viewed burnout as the result of not being able to realise personal and existential goals. If these goals are reached, employees experience meaning in and through their work.
- Compared with burned out employees, engaged employees experience a different type of exhaustion. Engaged employees experience exhaustion because their energy reserves are

also limited. However, the exhaustion they experience can be described as "exhausted but satisfied".

- Engaged employees might have been burned out and burned out employees might have shown strong engagement previously. Edelwich and Brodsky (1980) describe burnout as a process of "progressive disillusionment, whereby initial enthusiasm gradually makes place for frustration, which ends up in apathy. However, the reverse is also true: employees, who previously suffered from burnout, show high levels of engagement later in their lives".
- Engaged employees are not workaholics. They experience pleasure in their work and also enjoy hobbies and voluntary work in the community. In contrast, workaholics give the impression of being stressed and compulsive.

The measurement of work engagement

Schaufeli, Salanova, et al. (2002) disagree with Maslach and Leiter (1997), regarding the measurement of work engagement, who argued that it is adequately measured by the opposite profile of MBI scores. Schaufeli, Salanova, et al. (2002) are of the opinion that it is impossible to study the relationship between the two constructs empirically by using the MBI for measuring work engagement, since both are considered to be opposite poles of a continuum that is covered by one single instrument (the MBI). Although they agree that work engagement is the positive antithesis of burnout, they acknowledge that the measurement and the structures of both concepts differ.

The Employment Equity Act (1998) prohibits psychometric testing and other similar assessments of an employee are prohibited unless the test or assessment being used has been scientifically shown to be valid and reliable; can be applied fairly to employees, and is not biased against any employee or group (<http://www.labour.gov.za/docs/legislation/eea/act98-055.html>)

Reliability and validity, from a legal and morale perspective, are therefore aspects worthy of attention when considering an instrument for the measurement of any construct. The Utrecht Work Engagement Scale (UWES) developed by Schaufeli, Salanova, Gonzalez-Roma and

Bakker (2002), also used in this study, showed acceptable reliability and validity with recent South African samples (Naudé, 2003).

Regarding the psychometric properties of the UWES, preliminary results where the instrument was used with a South African sample show that the three sub-scales have sufficient internal consistencies. The alpha coefficients of 0,79 for Vigour, 0,89 for Dedication, and 0,78 for Absorption (Storm & Rothmann, 2003), were acceptable compared to the guideline of 0,70 of Nunnally and Bernstein (1994). Only two South African studies (Naudé, 2003; Storm & Rothmann, 2003) were found regarding the internal consistency, factorial validity, structural equivalence and bias of the UWES.

Storm and Rothmann (2003) tested the full-hypothesised three-factor model consisting of all 17 items. Subsequently the model was modified, followed by a test of a 1-factor model of engagement. They found correlation between the sub-scales to be very high. Vigour and dedication showed the highest correlation of 0,97, followed by vigour absorption with a correlation of 0,96, and dedication and absorption with a correlation of 0,96. The Tucker's phi-coefficient for the four race groups on the 3-factor structure was all higher than the cut-off point of 0,95. Therefore, it was deduced that the three factors of the UWES were equivalent for the four race groups.

Although work engagement has been measured elsewhere in the world (e.g. Bakker et al., (2003) in Spain), the psychometric soundness of the UWES for use with teachers in South Africa has yet to be determined.

The above discussion leads to the following hypotheses:

- H1: Work engagement, as measured by the UWES, is a three-dimensional construct and the UWES shows acceptable internal consistency.
- H2: Work engagement is an equivalent construct for Afrikaans and African teachers in the North West Province of South Africa
- H3: Significant differences exist regarding the work engagement of teachers based on biographical characteristics in North West Province of South Africa.

METHOD

Research design

A cross-sectional survey design whereby a sample is drawn from a population at one time was used to obtain the desired research objectives (Spector, 2000).

Sample

Seven school districts were randomly sampled from a group of 12 in the North West Province. Two school circuits were randomly sampled from the district. A circuit could consist of up to 40 schools. Five thousand (representing 17,9% of the population) questionnaires were sent to all teachers in the schools in a particular circuit if that circuit was randomly selected. One thousand three hundred completed questionnaires were returned. Only 1177 (23,54% response rate) of the questionnaires were used for data analysis.

The sample consisted mainly of permanent (89,42%) Setswana speaking (45,88%) females (69,48%), who are married (46,25%), possess a Grade 12 certificate and an Education Diploma/B.Degree (45,68%), who have not experienced a major stressful event over the last six months (56,69%) and are members of a Trade Union (91,25%).

Procedure

The Director-General of the North West Education Department was asked for permission to conduct the study. Meetings were convened with the management teams in the districts that were randomly selected to be included in the sample. The role of the district manger was to provide dates of their principal meetings where presentations where made regarding the objective of the study. Principals were provided with questionnaires to give to their staff. Envelopes with stickers were also included in this package to ensure confidentiality. The completed questionnaires were to be given to the principal, who then deposited it with the circuit manager for collection at the circuit office.

Measuring instrument

The *Utrecht Work Engagement Scale (UWES)* (Schaufeli, Salanova, et al., 2002) was used to measure the levels of engagement. Four items in which the language was simplified were added to the 17-item UWES. Three dimensions of engagement can be distinguished, namely Vigour (6 items; e.g. "I am bursting with energy in my work"), Dedication (5 items; e.g. "I find my work full of meaning and purpose") and Absorption (6 items; e.g. "When I am working, I forget everything else around me"). Engaged individuals are characterised by high levels of Vigour and Dedication and also elevated levels of Absorption. In terms of internal consistency, reliability coefficients for the three subscales have been determined between 0,68 and 0,91. Improvement of the alpha coefficient (ranging from 0,78 to 0,89) seems possible without adversely affecting the internal consistency of the scale (Storm & Rothmann, 2003). In light of the fact that most items on the UWES are framed in a positive manner it was decided to include and mix the MBI-HSS items in one questionnaire. The latter is predominantly phrased in a negative manner and should guard against the possibility of response sets.

Statistical analysis

The statistical analysis was carried out with the help of the SAS-program (SAS Institute, 2000) and the Amos-program (Arbuckle, 1999). Construct (structural) equivalence was determined to compare the factor structures of the measuring instruments for different cultural groups included in the study. The reason for this is that comparisons between groups are not possible when the measuring instruments measure different constructs in different cultural groups (Van de Vijver & Leung, 1997). Descriptive statistics (e.g. means, standard deviations, skewness and kurtosis) and inferential statistics were used to analyse the data. Cronbach alpha coefficients, inter-item correlation coefficients and factor analysis were used to assess the reliability and validity of the measuring instruments (Clark & Watson, 1995).

In order to test the factorial validity and construct equivalence of the UWES for different language groups, structural equation modelling (SEM) methods were used with the maximum likelihood method of the AMOS program (Arbuckle, 1999). According to Jöreskog (1971), all tests of invariance across groups should begin with a global test of the equality of their

covariance structures. In testing for these equivalencies, sets of parameters are tested in a logical order and by increasing restrictions in every step. The sets of parameters that are of most interest regarding group variances are: (a) factor loading paths, (b) factor variances/covariances, and (c) structural regression paths.

The general procedure for the testing of hypothesis related to group invariance starts with scrutiny of the measurement model. The pattern of factor loadings for each observed measure should be tested first for its equivalence across the groups. Once the group invariances have been identified, these parameters are equally constrained, while subsequent tests of the structural parameters are conducted. While testing each new set of parameters, those known to be group-invariant are equally constrained, thus testing a series of increasingly restrictive hypotheses in an orderly sequence of analytic steps (Byrne, 2001).

Before the factorial invariance can be tested as described above, it is important to consider a baseline model for each group separately, which best fits the data from the perspectives of both parsimony and substantive meaningfulness. Baseline models need not be completely identical across groups. The number of factors also does not need to be equivalent across groups (Byrne, 2001), though it is important that the similarly specified parameters within the same factor need to be equated (Werts, Rock, Linn & Jöreskog, 1976). In testing for invariance, however, equality constraints are imposed on particular parameters. Therefore, the data for all groups must be analysed simultaneously to obtain efficient estimates (Bentler, 1995; Jöreskog & Sörbom, 1996).

Hypothesized 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 & Sörbom, 1993). Researchers have addressed the χ^2 limitations by developing goodness-of-fit indices that take a more pragmatic approach to the evaluation process. The following goodness-of-fit indices which are recommended by Byrne (2001) were used in this study: a) The χ^2 /degrees of freedom ratio (CMIN/DF), b) The standardised RMR; c) the Goodness of Fit Index (GFI); d) The Adjusted Goodness-of-Fit Index (AGFI); e) The Normed Fit Index (NFI); f) The Comparative Fit Index (CFI); g) The Tucker-Lewis Index (TLI), and h) The Root Mean Square Error of Approximation (RMSEA).

Multivariate analysis of variance (MANOVA) was used to determine the significance of differences between the burnout (exhaustion, cynicism and professional efficacy) of demographic groups. MANOVA tests whether mean differences among groups on a combination of dependent variables are likely to have occurred by chance (Tabachnick & Fidell, 2001). In MANOVA a new dependent variable that maximises group differences is created from the set of dependent variables. One-way analysis is then performed on the newly-created dependent variable. Wilk's lambda was used to test the significance of the effects. Wilk's lambda is a likelihood ratio statistic that tests the likelihood of the data under the assumption of equal population mean vectors for all groups against the likelihood under the assumption that the population mean vectors are identical to those of the sample mean vectors for the different groups. When an effect was significant in MANOVA, one-way analysis of variance (ANOVA) was used to discover which dependent variables were affected. Because multiple ANOVAs were used, a Bonferroni type adjustment was made for inflated Type 1 error. Tukey tests were done to indicate which groups differed significantly when ANOVAs were done.

T-tests were used to determine differences between the groups in the sample. Effect sizes (Cohen, 1988; Steyn, 1999) were used in addition to statistical significance to determine the significance of relationships. Effect sizes indicate whether obtained results are important (while statistical significance may often show results which are of little practical relevance). A cut-off point of 0,50 (medium effect) (Cohen, 1988) was set for the practical significance of differences between means.

RESULTS

Hypothesised three-factor model of the UWES

Following this procedure, the 17-item theoretical model (Model 1) of the UWES, as proposed by Schaufeli, Salanova, González-Romá and Bakker (2002), was tested. Statistically significant χ^2 values of 431,59 ($df = 116$; $p = 0,00$) and 447,31 ($df = 116$; $p = 0,00$) for the Afrikaans and African groups respectively revealed a poor overall fit of the 3-factor model to the data. Model 1 was also not good from a practical perspective. GFI, NFI, TLI and CFI values lower than 0,90 and RMSEA value higher than 0,08 is indicative of failure to confirm

the hypothesised model. Thus it is apparent that some modification in specification is needed in order to determine a model that better represents the sample data. Results of the SEM analyses for Model 1 appear in Table 1.

Table 1

Goodness-of-fit Statistics for Hypothesised UWES Models

Model	Language	χ^2	χ^2/df	RMR	GFI	AGFI	NFI	TLI	CFI	RMSEA
Model 1 Hypothesized UWES	Afrikaans	431,59	3,72	0,06	0,86	0,81	0,85	0,87	0,89	0,09
	African	447,31	3,86	0,05	0,93	0,91	0,85	0,87	0,89	0,06
Model 2 Delete 17	Afrikaans	385,25	3,81	0,06	0,86	0,82	0,86	0,87	0,89	0,09
	African	387,12	3,83	0,05	0,94	0,92	0,87	0,88	0,90	0,06
Model 3 Delete 16	Afrikaans	348,80	4,01	0,06	0,87	0,82	0,87	0,88	0,90	0,09
	African	373,66	4,29	0,05	0,94	0,91	0,87	0,87	0,90	0,07
Model 4 Delete 12	Afrikaans	235,70	3,19	0,05	0,91	0,87	0,91	0,92	0,93	0,08
	African	311,68	4,21	0,05	0,94	0,92	0,88	0,88	0,90	0,06
Model 5 Error 3 & 6	Afrikaans	218,78	3,00	0,04	0,91	0,88	0,91	0,92	0,94	0,07
	African	292,80	4,01	0,05	0,95	0,92	0,89	0,89	0,91	0,06
Model 6 Error 10 & 13	Afrikaans	202,37	2,81	0,05	0,92	0,89	0,92	0,93	0,95	0,07
	African	283,07	3,93	0,05	0,95	0,93	0,89	0,89	0,91	0,06

To pinpoint possible areas of misfit, modification indices were examined. Furthermore, standardised residuals values were examined. Standardised residuals are fitted residuals divided by their asymptotically (large sample) standard errors (Jöreskog & Sörbom, 1988). They are analogous to z scores and are therefore the easier of the two sets of residual values to interpret. In essence, they represent estimates of the number of standard deviations the observed residuals are from the zero residuals that would exist if model fit were perfect (Byrne, 2001). Values larger than 2,58 are considered to be large.

Post-hoc analysis

Given rejection of the initially postulated three-factor model, the focus shifted from model test to model development (exploratory factor analysis). Analysis of the standardised regression weights revealed a comparatively low value for items 12, 16 and 17 (0,52 for item 12; 0,37 for items 16; 0,39 for items 17 for Afrikaans-speaking and 0,53 for item 12; 0,36 for

items 16; 0,75 for items 17 for African-speaking respondents). Further inspection of standardised residual covariances confirmed the problematic nature of item 12, 16 and 17 with loadings higher than 2,58. Deletion of these items in both language groups led to the re-specification of the hypothesised model and the generation/development of alternative models (16-item *Model 2* after deletion of item 17; 15-item *Model 3* after deletion of item 16; 14-item *Model 4* after deletion of item 12). The fit statistics of these models are presented in Table 1.

Statistically significant χ^2 values of 385,25 ($df = 101$; $p = 0,00$) and 387,12 ($df = 101$; $p = 0,00$) [Model 2], 348,80 ($df = 87$; $p = 0,00$) and 373,66 ($df = 87$; $p = 0,00$) [Model 3], and 235,70 ($df = 74$; $p = 0,00$) and 311 ($df = 74$; $p = 0,00$) [Model 4], for the Afrikaans and African samples respectively, revealed a poor overall fit of the re-specified models to the data. The models were also not good from a practical perspective. GFI, NFI, TLI and CFI values lower than 0,90 and RMSEA value higher than 0,08 is indicative of failure to confirm the hypothesised models. All subsequent analysis is now based on the 14 item revised model, which is labelled Model 4 in Table 1.

Inspection of the modification indices revealed that in both language groups, an item(s) might have been misspecified. Analyses of the MIs suggest that these items might load on other factors (instead of loading on the intended factor). Subsequent re-specified models, after allowing error covariances of single items within particular sub-scales to correlate in both samples, which was based on the information obtained from the MIs (*Model 5* after error 3 and 6 was correlated; *Model 6* after error 10 and 13 was correlated) fitted slightly better to the data compared to the original model. The fit of these re-specified three-factor models improved in both samples after every re-specification (taking into account these misspecifications). The fit statistics of these models are presented in Table 1.

Statistically significant χ^2 values of 218,78 ($df = 73$; $p = 0,00$) and 292,80 ($df = 73$; $p = 0,00$) [Model 5] and 202,37 ($df = 72$; $p = 0,00$) and 283,07 ($df = 72$; $p = 0,00$) [Model 6], for the Afrikaans and African samples respectively, revealed a poor overall fit of the re-specified models to the data. The models were also not good from a practical perspective. GFI, NFI, TLI and CFI values lower than 0,90 and RMSEA value higher than 0,08 are indicative of

failure to confirm the hypothesised models. All subsequent analysis is now based on the 14 item revised model which is labelled Model 4 in Table 1.

Inspection of Table 1 revealed that the SEM analysis yields a good and at most a marginal fit between the theoretical and empirical data for Afrikaans and African language samples respectively (Model 6). With a considerably lower χ^2 values [$(\Delta\chi^2_{(\text{Model 1} - \text{Model 6})} = 229,22$ for the Afrikaans sample) and $(\Delta\chi^2_{(\text{Model 1} - \text{Model 6})} = 164,24$ for the African sample)] compared to original hypothesised three-factor model (Model 1), Model 6 showed a better fit for the data. All the other fit statistics indicate acceptable fit for the GFI, NFI, TLI, CFI and RMSEA for the Afrikaans sample. However, the 0,89-values of the NFI and the TLI of the African sample have not yet reached the critical value of 0,90. Since model fit was determined to be acceptable and the results agreed with the theoretical assumptions underlying the structure of the UWES (Schaufeli, Salanova, et al., 2002), no further modifications of the model were deemed necessary.

Next, tests of invariance in the Afrikaans and African samples for the three-factor UWES model were determined, and these are indicated in Table 2.

Table 2

Factorial Invariance of the UWES for the Total Sample

Model	Groups	Comparative model	χ^2	df	$\Delta\chi^2$	Δdf	p
Hypothesised model (Model 1)	Afrikaans +African	-	485,51	144			
Factor loadings, variances and covariances constrained	Afrikaans +African	Model 1	542,86	160	57,35	16	$p \leq 0,01$
Factor loadings constrained equal	Afrikaans +African	Model 1	528,16	155	42,65	11	$p \leq 0,01$
Model 1 with factor loadings on Vigour constrained equal (Model 2)	Afrikaans +African	Model 1	497,46	147	11,95	3	NS
Model 2 with factor loadings on Dedication constrained equal (Model 3)	Afrikaans +African	Model 2	505,80	150	8,34	3	NS
Model 3 with factor loadings on Absorption constrained equal (Model 4)	Afrikaans +African	Model 3	503,70	153	2,1	3	NS
Model 4 with error covariance constrained equal (Model 5)	Afrikaans +African	Model 5	507,20	155	3,5	2	NS
Model 4 with covariance constrained equal (Model 6)	Afrikaans +African	Model 6	518,60	156	11,4	1	$p \leq 0,01$

In testing the factorial invariance of the UWES for different language groups, all factor loadings, variances and covariances for the language groups were constrained equal (Model 1a). Compared to the unconstrained model, the constrained model (Model 1a) showed a $\Delta\chi^2$ of 57,35, which is statistically significant ($df = 16$, $p < 0,01$), and which points to non-invariances across language groups.

Subsequently, only the factor loadings for the different language groups were constrained equal. Compared to the unconstrained model (Model 1), a $\Delta\chi^2$ of 42,65 ($\Delta df = 11$, $p < 0,01$) was found. In order to pinpoint the non-equivalent factor loadings, the next step was to test for invariances of factor loadings on each scale of the UWES separately. When only the factor loadings on Vigour were constrained equal, a $\Delta\chi^2$ of 11,95 ($\Delta df = 8$) was found, which is not statistically significant. When factor loadings on Vigour and Dedication were constrained equal for the different language groups (Model 3), a $\Delta\chi^2$ of 8,34 ($\Delta df = 3$) was obtained, which is not statistically significant. Also, constraining the factor loadings on Absorption for the two language groups (Model 4), did not result in a statistically significant difference ($\Delta\chi^2 = 2,1$, $\Delta df = 3$).

Having established the equivalence of factor loadings related to Vigour, Dedication and Absorption (Model 4), these constraints were maintained, while error covariance for the two language groups was constrained equally (Model 5). The results in Table 2 show that the adding equal error covariance did not contribute to a statistically significant difference from Model 4 ($\Delta\chi^2 = 3,5$, $\Delta df = 2$; $p < 0,001$). Modifications of Model 5, constraining factor loadings on Vigour, Dedication and Absorption, with error covariance and covariance constrained equally for all language groups (Model 6), resulted in a statistically significant difference from Model 5 ($\Delta\chi^2 = 14,9$, $\Delta df = 1$, $p < 0,0001$). Therefore, the covariance between the UWES factors were not invariant for the Afrikaans and African groups. However, according to Byrne (2001), expecting the covariance of dimensions to be invariant, is a strict assumption.

The results in Table 2 show that construct equivalence for the UWES exists between the various language groups. However, the covariances for the different language groups were not equivalent. The results provide support for part of Hypothesis 1 in that engagement, as measured by the UWES can be defined as a three-dimensional construct with an equivalent

structure as far as factor loadings and error covariance for Afrikaans and African language groups are concerned.

The correlations among the three engagement dimensions were as follows: 0,69 for Vigour and Dedication; 0,42 for Vigour and Absorption; and 0,47 for Dedication and Absorption. The descriptive statistics, alpha coefficients and inter-item correlations of the engagement dimensions are presented in Table 3.

Table 3

Descriptive Statistics, Alpha Coefficients and Inter-Item Correlations of the UWES

First-Order Factors	Mean	SD	Skewness	Kurtosis	r(Mean)	α
Vigour	17,70	4,79	-0,75	0,81	0,37	0,70
Dedication	24,27	5,76	-1,23	1,37	0,46	0,81
Absorption	20,79	5,63	-0,59	0,20	0,21	0,57

Inspection of Table 3 revealed that the scores on the factors of the model are normally distributed. Compared to the guidelines of $\alpha > 0,70$ (Nunnally & Bernstein, 1994), the Cronbach alpha coefficients of the sub-scales are considered to be acceptable, except for Absorption, which shows a lower score than the cut-off. Furthermore, the inter-item correlations are considered acceptable compared to the guideline of $0,15 < r < 0,50$ (Clark & Watson, 1995). It was decided to remove the Absorption scale from further analyses, because its internal consistency was too low.

Next, MANOVA and ANOVA analyses followed to determine the relationship between engagement and various *demographic characteristics*, such as different qualifications, school district, type of school, job level, marital status, overall health condition, considerations about quitting the profession, as well as the frequency of those considerations, availability of equipment, skills, knowledge and abilities to teach effectively, age category, years experiences, and age. Demographic characteristics were first analysed for statistical significance using Wilk's Lambda statistics. The results of these comparisons are reflected in Table 4.

Table 4

MANOVAs – Differences in Engagement Levels of Demographic Groups

Variable	Value	<i>F</i>	<i>df</i>	Den DF	<i>p</i>
Qualification	0,95	6,00	9	2375,50	0,00*
Type of school	0,92	10,99	9	2708,90	0,00*
Job level	0,99	0,75	9	2640,80	0,66
Marital status	0,98	1,66	15	3144,70	0,05
Overall health condition	0,99	1,67	6	2268,00	0,12
Considering quitting the profession	0,95	4,66	12	2849,80	0,00*
Frequency of consideration to quit	0,96	3,96	12	2886,80	0,00*
Possesses the right equipment to teach	0,94	6,39	12	2831,20	0,00*
Possesses the right skills, knowledge and abilities to teach	0,99	1,20	12	2844,50	0,28
Age categories	0,97	1,42	18	2557,40	0,11

* Statistically significant difference: $p < 0,01$

In an analysis of Wilk's Lambda values, no differences regarding engagement levels could be found between groups with job level, marital status, overall health condition, possession of the right skills, knowledge and abilities to teach effectively and age category. However, statistically significant differences ($p < 0,01$) were found among qualifications, district, type of school, considerations/frequency of/about quitting the profession, as well as possession of equipment and engagement levels. The relationship between engagement and those demographic variable levels that showed a statistically significant difference was further analysed to determine practical significance using ANOVA, followed by Tukey HSD tests. The ANOVA of differences in engagement levels of groups with different qualifications are given in Table 5.

Table 5

ANOVAs – Differences in Engagement Levels based on Qualifications

Item	1	2	3	4	<i>p</i>	Root MSE
	M + 3 (Dip)	M + 4 (B Degree)	M + 5 (Hons Degree)	M + 6 (Masters Degree)		
Vigour	18,33	17,46	16,43	15,46	0,00*	4,80
Dedication	24,64	24,26	22,58	21,84	0,00*	5,82

* Statistically significant difference: $p < 0,01$

a Practically significant differences from group (in row) where b (medium effect, $d \geq 0,50$) or c (large effect, $d \geq 0,80$) are indicated

Inspection of Table 5 shows statistically significant differences between levels of Vigour and Dedication experienced and by teachers with different qualifications. However, these differences were not practically significant. Those with lower qualifications (Grade 12 and a teachers' diploma) experienced higher levels of Vigour and Dedication compared to those with higher qualifications. It should be note that only 21,15% of the sample possess a teachers' diploma with an honours (18,51%) or master's (2,64%) degree. Small sizes of the latter groups could be the reason for the fact that the differences were not practically significant.

The ANOVAs of differences in engagement levels and different types of schools are given in Table 6.

Table 6

ANOVAs – Differences in Engagement Levels based on Type of School

Item	1	2	3	4	<i>p</i>	Root MSE
	Primary	Intermediate	Combined	Secondary		
Vigour	18,40	18,05	18,00	16,45	0,00*	4,66
Dedication	25,28 ^b	22,87	26,18 ^b	22,51 ^a	0,00*	5,51

* Statistically significant difference: $p < 0,01$

a Practically significant differences from group (in row) where b (medium effect, $d \geq 0,50$) or c (large effect, $d \geq 0,80$) are indicated

Table 6 shows that there are statistically significant differences between levels of Vigour, and Dedication experienced in different types of schools. Teachers in secondary school experienced practically significant lower levels (with a medium effect) of dedication compared to those teaching in primary and combined schools.

Statistically significant differences also exist between teachers considering quitting the profession and the frequency of those considerations and those that have the right equipment on the one hand and the levels of vigour and dedication experience on the other hand. However, these differences were not practically significant.

T-tests were carried out to determine whether differences exist between the levels of vigour and dedication experienced by males and females and the experience of a major stressful event in the last six months, on the one hand. However, these differences were not practically significant. No differences could be found between the levels of engagement experience on the one hand and those teachers that have not taken leave while still ill and those teachers that have experienced a chronic illness as been stressful during the last three months.

DISCUSSION

The aim of this analysis was twofold. Firstly, it was intended to test the psychometric qualities of three-factorial model of engagement as measured by the UWES, for teachers that consist of *vigour*, *dedication* and *absorption*. Secondly, to investigate the relationship of the sub-scales with demographic variables such as qualification, type of school, job level, marital status, overall health condition, considerations of quitting the profession, as well as the frequency of those considerations, possession of equipment, skills, knowledge and abilities to teach effectively, age category and years experience for teachers in the North West Province of South Africa.

Results of the study indicate that engagement as measured by the UWES is indeed a three-factor construct consisting of vigour, dedication and absorption. In examining the factor structure some undesirable psychometric characteristics were found to be associated with several items of the UWES. Analysis of the standardised regression weights revealed a comparatively low value for items 12, 16 and 17. Further inspection of standardised residual covariances confirmed the problematic nature of item 12, 16 and 17 with loadings higher than 2,58. The results are consistent with the results of another study using the UWES with a South African sample. Coetzer and Rothmann (in press) found that Item 16 and 17 showed high standardised residual errors. These findings suggest that the items may require either

deletion or content modification, in which case, deletion was considered, because content modification would have required further data collection/another study where the original items as well as the modified items could be included. Based on both conceptual and empirical grounds, item 12, 16 and 17 were deleted from the original 17-item theoretical model of the engagement (as measured by the UWES). The particular items may be problematic because they do not correspond to the conceptual domain of the particular dimension. However, it is more likely that they are somewhat ambiguous, or that they are either sample- or country specific. Also, the problems of some of these items may be related difficult words that some of the participants could have found difficult to understand and / or interpret (e.g. vigorous, immersed and resilient). This is highly likely, because only 32,05 % of the participants had English as mother tongue.

The deletion of items from the UWES for reasons of bias and model-fit improvement resulted in the sacrifice of model parsimony, in other words, relationships have been eliminated which could be viewed as an erosion in the meaning of the work engagement construct. However, it is also possible, due to sampling procedure (subgroup representation) that these findings could have been obtained by pure chance.

The prominently correlated errors in this study present another problem. In general, the specification of correlated error terms for the purpose of achieving a better-fitting model is not an acceptable practice. Correlated error terms in measurement models represent systematic rather than random measurement error in item responses. They may derive from characteristics specific either to the respondents (Aish & Jöreskog, 1990). For example, if these parameters reflect item characteristics, they may represent a small omitted factor. However, as may be the case in this instance, correlated errors may represent respondent characteristics that reflect bias such as yea-/nay-saying, social desirability (Aish & Jöreskog, 1990), as well as high degree of overlap in item content (when an item, although worded differently, essentially asks the same question) (Byrne, 2001).

Inspection of the modification indices revealed that item(s) might have been misspecified. After allowing error covariances of single items within particular sub-scales to correlate in both samples, which was based on the information obtained from the MIs (**Model 5** after error 3 and 6 was correlated; **Model 6** after error 10 and 13 was correlated) fitted slightly

better to the data compared to the original model. The findings are consistent to those of Storm and Rothmann (2003) who found that the highest degree of misfit laid in the correlated error of Item 8 and 9 (MI = 117,10) and Item 15 and 16 (MI = 125,33).

Previous research with psychological constructs in general (e.g. Jöreskog, 1982; Newcomb & Bentler, 1988; Tanaka & Huba, 1984) and with measuring instruments in particular (Byrne, 1988, 2001), has demonstrated that the specification of correlated errors can often lead to substantially better fitting models. Bentler and Chou (1987) argued that the specification of a model that forces these error parameters to be uncorrelated is rarely appropriate with real data. Therefore, it was considered more realistic to incorporate the correlated errors in this study rather than to ignore their presence.

It is believed that this confusing state of affairs regarding the UWES does not reflect weaknesses inherent in the instrument, but it is rather due to more general factors. First, the UWES is a recently constructed measuring instrument. Therefore, relatively few studies have critically viewed its psychometric properties. Secondly, the UWES is an instrument that was originally constructed from data based on samples of individuals in the Netherlands (Schaufeli & Bakker, 2001). Despite a few studies of the UWES in South Africa (e.g. Naudé, 2003; Storm & Rothmann, 2003b), more research regarding work engagement in different occupational settings is still required. Schaufeli, Martinez, Pinto, Salanova, and Bakker (2002) also found that the hypothesised three-factor model of work engagement was invariant across Spanish, Dutch and Portuguese samples. Furthermore, the dimensionality of the UWES could be influenced because of the high reported correlations between the three dimensions. Explicit theory indicating exactly how the three sub-scales relate to one another and to other variables must be developed before one can evaluate thoroughly the theoretical validity of a three-component conceptualisation.

Construct (structural) equivalence was used to compare the factor structure of the UWES for different language groups included in this study, using the AMOS program (Arbuckle, 1999). The results indicated that construct equivalence for the UWES exist between the various language groups. However, the covariances, for the different language groups, were not equivalent. The results provide support for part of Hypothesis 1. Work engagement, as

measured by the UWES, can be defined as a three-dimensional construct with an equivalent structure for Afrikaans and African language groups.

The second objective of this study was to investigate the relationship between engagement and various demographic characteristics. The results indicate that no differences existed regarding engagement levels of teachers on different job levels, marital status, overall health condition, and possession of the right skills, knowledge and abilities to teach effectively and age categories. This results is contrary to mentioned relationships with age found in other studies elsewhere that indicated that older people feel more engaged (Schaufeli & Bakker, 2003).

However, statistically significant differences were found among qualifications, type of school, considerations about quitting the profession as well as the frequencies of those considerations and the possession of the right equipment and engagement levels. Further analysis (ANOVAs) of the data revealed that, except for the type of school where teachers teach (statistical significance for all three sub-scales with practical significance on dedication and absorption) all the other demographic variables only showed statistically significant difference on the vigour and dedication sub-scales.

Teachers in secondary schools experienced practically significant (with a medium effect) less dedication compared to those in combined and primary schools. Jackson and Rothmann (in press) found that secondary school teachers experience higher levels of exhaustion (essential but not a sufficient component of burnout) compared to those in primary, intermediate and combined schools. Therefore, these results confirm that burnout is the erosion of engagement. The levels of vigour and dedication were also influenced The results also confirmed the findings of Schaufeli and Bakker (2004) who argued that job resources are related to engagement, with statistically significant differences on vigour and dedication and possession of the right equipment. The results also confirm that dedication is the opposite of distancing one from your job, if considerations (and the frequencies of those considerations) to quit the profession are seen as symptoms to distance one from his / her working environment, with statistically significant differences on vigour and dedication and this demographic variable – however, these differences were not practically significant.

Analysis of results of *t*-tests revealed statistically but not practically significant differences for sex. The results obtained are contrary to findings mentioned in the Test Manual of the UWES (Schaufeli & Bakker, 2003) indicating that men score slightly higher on dedication and absorption.

The study had several limitations. First, self-report measures were exclusively relied upon. Further studies conducted in this manner should confirm whether bias and equivalence do indeed exist for different language because the size of the sample, specifically the distribution of different language groups and sampling procedure in the present study, had significant limitations in terms of generalisation of the findings applied to the total study population.

RECOMMENDATIONS

There would appear to be several research issues that flow from this study and which require attention in increasing both our understanding of work engagement and the usefulness of this concept. More construct validity research regarding the UWES is needed. None of the solutions could be regarded either as effectively confirming the authors' proposed three-sub-scale structure, or as an adequate replication of the factor structures found in their studies (Schaufeli, Salanova, et al., 2002). Individual items of the UWES should be carefully examined when they are used in South African samples. According to the results obtained in this study the use of the UWES is recommended to assess engagement of teachers in the North West Province of South Africa. However, if the UWES is going to be used items 12, 16 and 17 should be omitted from the questionnaire in a multicultural context or rewritten in a more acceptable South African language format due to semantic problems. It is also suggested that future research could focus on use of the UWES with teachers in the other provinces in the South Africa to verify the current findings in terms of invariance.

It also seems important to work towards improving the UWES for South African circumstances by identifying a core set of items that could most validly measure the concept of work engagement (Storm & Rothmann, 2003). Other suggestions regarding further research involve determining the reliability and validity of the UWES in other occupations in South Africa to establish norms for engagement levels other than teachers. Future studies should use large samples and adequate statistical techniques.

REFERENCES

- Anderson, W.T. (2000). *Positive psychology: An idea whose time has come* Retrieved from the World Wide Web: <http://www.pacificnews.org/jinn/storie/6.19/000920-positve.html>
- Arbuckle, J.L. (1997). *Amos user's guide version 3.6*. Chicago: Smallwaters.
- Arbuckle, J.L. (1999). *Amos 4.0*. Chicago: Smallwaters.
- Bandura, A. (1977). Self-efficacy: Towards a unifying theory of behavior change. *Psychological Review*, 84, 191-215.
- Bentler, P.M. (1992). On the fit of models to covariances and methodology to the Bulletin. *Psychological Bulletin*, 112, 400-404.
- Burns, N. & Grove, S.K. (1993). *The practice of nursing research, conduct, critique, and utilization* (2nd ed.). Philadelphia: W.B. Saunders.
- Byrne, B.M. (1988). The Self Description Questionnaire III: Testing for equivalent factorial validity across ability. *Educational and Psychological Measurement*, 48, 397-406.
- Byrne, B.M. (1993). The Maslach Burnout Inventory: Testing for factorial validity and invariance across elementary, intermediate and secondary teachers. *Journal of Occupational & Organisational Psychology*, 66, 197-213.
- Byrne, B.M. (2001). *Structural equation modeling with AMOS: Basic concepts, applications and programming*. Mahwah, NJ: 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* (2nd ed.). Orlando, CA: Academic Press.
- Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. New York: Harper.
- Diener, E., Suh, E.M., Lucas, R.E. & Smith, H.I. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, 125, 267-302.
- Jackson, L.T.B. & Rothmann, S. (2004a). *An adapted model of burnout for teachers in South Africa*. Manuscript submitted for publication.
- Jöreskog, K.G. & Sörbom, D. (1986). *LISREL user guide version VI* (4th ed.). Mooresville, IL: Scientific Software International.
- Jöreskog, K.G. & Sörbom, D. (1988). *LISREL 7: A guide to the program and applications*. Chicago: SPSS Inc.

- Jöreskog, K.G. & Sörbom, D. (1993). Testing structural equation models. In K.A. Bollen & J.S. Long (Eds.), *Testing structural equation models* (pp. 294-316). Newbury Park, CA: Sage.
- Maslach, C. & Leiter, M.P. (1997). *The truth about burnout*. San Francisco: Van Nostrand.
- Maslach, C. (1993). Burnout: A multidimensional perspective. In W.B. Schaufeli, C. Maslach & T. Marek (Eds.), *Professional burnout* (pp. 19-32). Washington: Taylor & Francis.
- Maslach, C., Schaufeli, W.B. & Leiter, M.P. (2001). Job burnout. *Annual Review of Psychology*, 52, 397-422.
- Mentz, P.J. (2002). Gehalte van werklewe van onderwysersin 'n periode van konstitusionele hervorming en veranderinge in die onderwysers. *Tydskrif vir Geesteswetenskappe*, 42, 237-249.
- Naudé, J.L.P. (2003). *Occupational stress, coping, burnout and work engagement of emergency workers in Gauteng*. Unpublished doctoral thesis, PU for CHE, Potchefstroom.
- Newcomb, M.D. & Bentler, P.M. (1988). *Consequences of adolescent drug use: Impact on the lives of young adults*. Newbury Park, CA: Sage.
- Nunnally, J.C. & Bernstein, I.H. (1994). *Psychometric theory* (3rd ed.). New York: McGraw-Hill.
- Rosenbaum, M. (1988). Learned resourcefulness, stress and self-regulation. In S. Fischer & J. Reason (Eds.), *Handbook of life stress cognition and health* (pp. 483-496). Chichester, UK: Wiley.
- Rothmann, S. (2003). Burnout and engagement: A South African Perspective. *South African Journal of Industrial Psychology*, 29(4), 16-25.
- SAS Institute. (2000). *The SAS System for Windows: Release 8.01*. Cary, NC: SAS Institute Inc.
- SAS Institute. (2000). *The SAS System for Windows: Release 8.01*. Cary, NC: SAS Institute Inc.
- Schaufeli, W.B. & Bakker, A.B. (2001). Werk en welbevinden: Naar een positieve benadering in de Arbeids- en Gezondheidspsychologie [Work and well-being: Towards a positive occupational health psychology]. *Gedrag en Organizație*, 14, 229-253.
- Schaufeli, W.B. & Bakker, A.B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behaviour*, 25, 1-23.

- Schaufeli, W.B. & Enzmann, D. (1998). *The burnout companion to study and practice: A critical analysis*. London: Taylor & Francis.
- Schaufeli, W.B., Bakker, A.B., Hoogduin, K., Schaap, C. & Kladler, A. (2001). On the clinical validity of the Maslach Burnout Inventory and the burnout measure. *Psychology and Health, 16*, 565-583.
- Schaufeli, W.B., Enzmann, D. & Girault, N. (1993). Measurement of burnout: A review. In W.B. Schaufeli, C. Maslach & T. Marek (Eds.), *Professional burnout: Recent developments in theory and research* (pp. 199-215). Washington: Taylor & Francis.
- Schaufeli, W.B., Martinez, I., 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.
- Schaufeli, W.B., Salanova, M., González-Romá, V. & Bakker, A.B. (2002). The measurement of engagement and burnout: A confirmative analytic approach. *Journal of Happiness Studies, 3*, 71-92.
- Schaufeli, W.B., Taris, T.W., Le Blanc, P.M., Peeters, M., Bakker, A.B. & De Jonge, J. (2001). Maakt arbeit gezond?: Op zoek naar de bevlogen werknemer [Does work make healthy?: In search of the engaged worker]. *De Psycholoog, 36*, 422-428.
- Schutte, N., Toppinnen, S., Kalimo, R. & Schaufeli, W.B. (2000). The factorial validity of the Maslach Inventory-General Survey across occupational groups and nations. *Journal of Occupational and Organizational Psychology, 73*, 53-66.
- Seligman, M. (2002). Positive psychology at work. In C.R. Snyder & S.J. Lopez (Eds.), *Handbook of positive psychology*. (pp. 715-728). Oxford: Oxford University Press.
- Seligman, M.E.P. & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist, 55*(1), 5-14.
- Snyder, C.R. & Lopez, S.J. (2002). *Handbook of positive psychology*. Oxford: Oxford University Press.
- Spector, P.E. (2000). *Industrial and organizational psychology: Research and practice* (2nd ed.). New York: John Wiley.
- Steyn, H.S. (1999). *Praktiese beduidendheid: Die gebruik van effekgroottes. (Practical significance: The use of effect sizes.)* Wetenskaplike bydraes – Reeks B: Natuurwetenskappe Nr. 117. Potchefstroom: PU vir CHO.

- Storm, K. & Rothmann, S. (2003). The validation of the Utrecht Work Engagement Scale in the South African Police Service. *South African Journal of Industrial Psychology*, 29(4), 62-70.
- Strümpfer, D.J.W. (1990). Salutogenesis: A new paradigm. *South African Journal of Psychology*, 20, 265-276.
- Strümpfer, D.J.W. (1995). The origins of health and strength: from 'salutogenesis' to 'fortigenesis'. *South African Journal of Psychology*, 25, 81-89.
- Strümpfer, D.J.W. (2002a1). *Psychofortology: Review of a new paradigm marching on*. Available: <http://www.general.rau.ac.za/psych>
- Strümpfer, D.J.W. (2002b). *Resilience and burnout: A stitch that could save nine*. Paper presented at the 1st National Burnout Conference, Potchefstroom.
- Tabachnick B.G. & Fidell, L.S. (2001). *Using multivariate statistics* (4th ed.). Boston, MA: Allyn & Bacon.
- Tanaka, J.S. & Huba, G.J. (1984). Confirmatory hierarchical factor analysis of psychological distress measures. *Journal of Personality and Social Psychology*, 46, 621-635.
- Van de Vijver, F. & Leung, K. (1997). *Methods and data analysis for cross-cultural research*. Thousand Oaks, CA: Sage.
- Wissing, M.P. & Van Eden, C. (2002). Empirical classification of the nature of psychological well-being. *South African Journal of Psychology*, 32, 32-44.

CHAPTER 4

ARTICLE 3

OCCUPATIONAL STRESS, ORGANISATIONAL COMMITMENT AND ILL-HEALTH OF TEACHERS*

L.T.B. JACKSON

S. ROTHMANN

*WorkWell: Research Unit for People, Policy and Performance, Potchefstroom Campus,
North-West University*

ABSTRACT

The objectives of this study were to validate An Organisational Stress Screening Tool (ASSET) for teachers, to assess the relationship between occupational stress and health, and to determine whether organisational commitment moderates the effects of occupational stress on ill-health. A cross-sectional survey design was used. A stratified random sample ($N = 1177$) were taken of teachers in the North West Province. The ASSET and a biographical questionnaire were administered. The results confirmed the construct validity and internal consistency of the ASSET. Occupational stress and low individual commitment to the organisation explained 31% of the variance in physical and psychological ill-health. Commitment from the individual to the organisation moderated the effects of occupational stress on physical and psychological health of teachers.

OPSOMMING

Die doelstellings van hierdie studie was om 'n Organisasiestresgraderingsinstrument ('ASSET') vir onderwysers te valideer, om die verband tussen beroepstres en gesondheid te bepaal en om vas te stel of organisasieverbondenheid die effek van beroepstres op swak gesondheid matig. 'n Dwarssneeopname-ontwerp is gebruik. 'n Gestratifiseerde ewekansige steekproef ($N = 1177$) van onderwysers in die Noordwes Provinsie is geneem. Die ASSET en 'n biografiese vraelys is afgeneem. Die resultate het die konstrugeldigheid en interne konsekwenheid van die ASSET bevestig. Beroepstres en individuele verbondenheid tot die organisasie het 31% van die variansie in swak gesondheid verklaar. Individuele verbondenheid tot die organisasie het die effek van beroepstres op swak gesondheid gematig.

* This material is based upon work supported by the National Research Foundation under Grant number 2053917.

Occupational stress is associated with increases in negative work-related outcomes, such as job dissatisfaction, ill-health, absenteeism, higher turnover and lower productivity (Jones & Bright, 2001). The negative effects of occupational stress include impaired performance or reduction in productivity, diminishing levels of customer service, health problems, absenteeism, turnover, industrial accidents, alcohol and drug usage and purposefully destructive behaviours (Karasek & Theorell, 1990; Perrewé, 1991; Quick, Quick, Nelson & Hurrell, 1997; Wright & Smye, 1996).

The Whitehall studies in England (Bosma, Peter, Siegrist & Marmot, 1998; Marmot, Bosma, Hemingway, Brunner & Stansfield, 1997) involving thousands of civil servants have demonstrated that of all the factors examined, personal control in the workplace was the largest contributor to coronary heart disease. Data from large-scale epidemiological research make a good case for the general proposition that something about the demands and conditions of work might cause serious health problems for individual employees. Health risks caused by psychosocial work conditions can harm the corporate bottom-line as well as the employees themselves. Research by Winslow (1998) confirmed that those reporting high occupational stress and depression had health costs that were 2,5 times higher than those who do not. With such evidence mounting it is not surprising that the filing of civil law suits and workers' compensation claims for work stress-related disabilities is increasing.

Not only is workplace stress costly, but also it is a growing problem as organisations throughout the world dramatically downsize, outsource, and develop less secure employment contracts. Many organisations are now smaller, with fewer people doing more and feeling and much less secure. New technology has added to the burden of information overload as well as accelerating the pace of work with demands for greater immediacy of response (Cooper, 1998).

Teachers' work is becoming more complex and more demanding. The roles of teachers are not easily defined and the variables that come into play are growing more complex (Greenberg, 1984). Teachers have to cope with demands such as the rationalisation of personnel, increased specialisation, the growing scope of syllabuses and a higher number of pupils per class (Niehaus, Myburgh & Kok, 1996). Ngwezi (1989) expresses the opinion that the unstable nature of the teaching profession will constantly challenge teachers to cope with and adapt effectively to all the changes encountered in their profession.

Factors in the South African environment that contribute to the experience of stress of teachers include increasing changes in education and society, and teachers burdened with having to make a variety of modifications in their personal and professional lives. These changes include among others: population increases, diversity in school populations, increases in cost of living, crime and its effect on student behaviour, conditions of service, new rules and regulations of the education department, curriculum changes, performance appraisal systems and demands of unions (Mesthrie, 1999). The executive summary of the 1995 Sectoral Activities Programme working paper of the salaried employees and professional workers branch identified stress as a major problem in the teaching fraternity (ILO, 1995). A large number of studies have shown that teachers are exposed to high workloads with a resultant increase in stress and strain. At least one third of the teachers can be seen as suffering from stress (Boyle, Borg, Falzon & Baglioni, 1995; Capel, 1991).

A review of the educational literature revealed that teacher shortages are a direct or indirect result of stress-related issues related to the specifics of the educational environment. It also seems that teacher shortages are becoming a worldwide phenomenon (Johnson, 2002; Masters, 2002; Slater, 2002). These negative outcomes are also evident in the South African education system. Recent newspaper headings have identified the recruitment of new teachers and the retention of them a major challenge for the Department of Educational – *Most SA teachers ready to quit* (Citizen, 19 Apr. 1999); *Many good teachers have quit in despair because of the OBE system* (Star, 13 Aug. 2001); *Profoundly sad so many teachers are quitting* (Citizen, 25 Jul. 2002). Loss of teachers (experience) due to early retirements and resignations can and even may become a costly exercise to the provincial educational departments because of direct and indirect cost incurred through advertisements, recruitment, selection, induction, loss of experience and down time because of inadequate training or lack of experience.

Furthermore, an investigation into the number of days used by teachers in the North West Province for sick leave, the number of teachers using such leave and the number of resignations have revealed that the use of such leave increased between 2001 and 2002 by 339,27% (or 57 666 days), 170,88% (or 3686 teachers), and 82,74% (or 139 resignations) respectively (North West Education Department Statistics, 2004). Even though these figures could be the result of a number of factors, the above-mentioned research results indicate that stress plays a significant role in resignations and absenteeism of employees and even teachers

for that matter. It thus seems, important, relevant and necessary to investigate the antecedents and consequences of stress of South African teachers in the North West Province. Not only is it important to establish reliable and valid methods of measurement with regard to perceived stress and strain, but also to understand stress as a phenomenon which can be tackled at the organisation level.

Occupational stress and ill-health

There is no consensus on the precise meaning of the term 'stress' (Jex, Bechr & Roberts, 1992). To organisational psychologists, work-related stress is considered to be the product of an imbalance between environmental demands and individual capabilities (Lazarus & Folkman, 1984). However, most researchers adopt the fairly common practice of using the term 'stress' to describe either the external *stimulus* from the environment or the *response* of the individual, or sometimes both meanings simultaneously. To minimise semantic difficulties as well as theoretical confusion, this article will use the terms 'stressors' or 'sources of pressure' to refer to characteristics of the external environment (i.e. job characteristics and working conditions) and the term 'strain' to describe any response of the individual to these (i.e. physical and psychological ill-health, job satisfaction and impaired job performance). The term 'stress' will, however, be used to indicate participants' responses to direct questions, for example, when enquiring whether they perceive a low, moderate or severe level of stress at work. While it is acknowledged that stressors do not inevitably lead to strain, and a wide range of individual differences (e.g. personality and coping styles) moderate this relationship, such issues will not be explored in this article.

According to the transactional model (Lazarus & Folkman, 1984), stress depends on an individual's cognitive appraisal of events and circumstances and on the ability to cope, this being the end result of a person's transaction with the environment. An individual's coping strategy is constantly changing to manage specific demands that are appraised as exceeding the person's resources (Lazarus & Folkman, 1984). As long as the individual's coping ability is not exceeded, no consequences of long-term stress need be experienced (Hiebert & Farber, 1984). However, coping with stress in the work environment can be less effective because many aspects of the work situation that are stressful tend to lie outside the individual's control (Kyriacou, 1981).

Research has demonstrated that work-related stressors can have a wide-range of negative affects to the individual. Strain is observable at several different levels. Teacher stress is seen mainly as a negative affect with diverse psychological (e.g., job dissatisfaction), physiological (e.g., high blood pressure), and behavioural (e.g., absenteeism) correlates. In the long run these negative stress effects could lead to physiological and biochemical changes accompanied by psychosomatic and even chronic symptoms like coronary heart diseases (van Dick & Wagner, 2001). Other levels of strain include cognitive (e.g. poorer quality decision making, lower levels of creativity, impaired memory) and interpersonal (e.g. reduced levels of sensitivity, warmth, consideration, altruism and tolerance). However, for the purposes of this study strain is divided into physical and psychological ill-health.

Physical strain is a physiological reaction of the stress process, which can be divided into long-term and short-term (Frese & Zapf, 1988). A long-term strain is a physical illness, such as heart disease, which has been suggested as an outcome of stress (Greenglass, 1996; Julkunen, 1996). Short-term strains are physiological reactions, such as high blood pressure or suppression of the immune responses. Many of the short-term physical strains are associated with emotional reactions (O'Leary, 1990), they may in fact be mechanisms by means of which long-term physical strain occurs. Research has focussed on three types of physical indicators: cardiovascular, biochemical and gastrointestinal symptoms (Fried, Rowland & Ferris, 1984). Psychological strain correlates strongly with work-related stressors (Jex & Beehr, 1991; Kahn & Byoiere, 1992). The reviews indicate that psychological ill-health includes anxiety/panic attacks, irritability, difficulty in decision-making, loss of sense of humour, becoming easily angry, constant tiredness, feeling unable to cope, avoiding contact with other people, mood swings and inability to listen to others.

Cooper et al. (2001) categorised six sources of stress or occupational stressors: Factors intrinsic to the job, management role, relationships with others, career and achievement, organisational structure and climate, and home/work interference. Cooper et al. (2001) state that these stressors could be grouped into three major categories, namely: job-specific sources, organisational sources and individual or personal sources. In a study done by Tytherleigh (2002) it was found that work relationships, job security, and resources and communication caused the highest levels of strain. The impact of occupational stress and burnout on employees' physical well-being, mental health, work engagement and related

behaviours (i.e. absenteeism and turnover) is well documented (Taris, Schreurs & Van Iersel-van Silfhout, 2001).

Studies reviewed here highlight the relationships between perceptions of stressful working conditions and strains such as impaired job performance, job satisfaction, and physical and psychological ill-health. Whilst it is undoubtedly important to isolate the stressful features of any occupation and the extent of strain experienced by the workforce in order to inform policy and practice on stress at work, it is also necessary to isolate the stressors which have the strongest relationship with strains. These factors will provide the focus for an extensive wellness programme.

Because of a research tradition that places considerable emphasis on understanding individual differences between people in their perception of, and reaction to stress, it is not surprising that the curiosity of researchers has led them inevitably to turn their attention to exploring the role of a range of individual differences (Cooper & Dewe, 2004). Individual differences have been hypothesized as influencing the stressor-strain relationship in one of three ways: *directly* (impacts on the level of strain), or by operating as a *moderator* (alter the strength or direction of the stress-strain relationship) (Cooper & Bright, 2001) or *mediator* (they become responsible for the transmission of an effect) (Cox & Ferguson, 1991) of the stress-strain relationship. Organisational commitment could moderate the relationship between stress and strain (Sui, 2002).

Organisational commitment

Recently, organisational commitment has been identified as a significant moderator of work stress (Sui, 2002). Organisational commitment could be regarded as the relative strength of an individual's identification with and involvement in an organisation (Mowday, Porter & Steers, 1992). Sui (2002) showed that organisational commitment was not only related to most of the physical and psychological outcomes among workers, but also to the moderating effects on the stressor-health relationship. As mentioned earlier, the stress process depends on the person's role in appraising the stressor, and organisational commitment is a "person" factor. Lai et al. (2000) indicate that psychological hardiness as a personality construct taps three personality constructs of which commitment (to work/profession) is one. They have found in their study that some employees possess considerable personality-resistance

resources, such as self-esteem and psychological hardiness (and therefore commitment), which allow them to withstand hardships arising from the job. Organisational commitment interacts with sources of stress at work to determine their outcomes. Siu (2002) argued that this indirect or moderating effect of commitment protects individuals from the negative effect of stress, due to the fact that it enables them to attach direction and meaning to their work.

Research aims

The aims of this study were to validate An Organisational Stress Screening Tool (ASSET) for teachers, to assess the relationship between occupational stress and health, and to determine whether organisational commitment moderates the effects of occupational stress on ill-health.

METHOD

Research design

A cross-sectional survey design was used. In this design, the focus is on relationships between and among variables in a single group (Robson, 2002).

Study population

Seven school districts were randomly sampled from a group of 12 districts in the North West Province of South Africa, which included Klerksdorp, Lichtenburg, Mafikeng, Potchefstroom, Rustenburg, Vryburg and the Zeerust. Two school circuits were randomly sampled from the group of circuits. A district could consist of between six and eight circuits. A circuit could consist of between 20 to 40 schools that differ in terms of size (small, medium and large) and locality (rural, urban and farm schools). Questionnaires were sent to all teachers in the schools in a particular circuit if that circuit had been randomly selected.

The sample consisted mainly of permanent (89,42%) Setwana-speaking (45,88) females (69,48%), who are married (46,25%), possess a Grade 12 certificate and an Education Diploma and or a Bachelors degree (45,68%), that have not experienced a major stressful event over the last six months (56,69%) and are members of a trade union (91,25%). Table 1 presents some of the characteristics of the participants.

Table 1

Characteristics of the Participants

Item	Category	Percentage
Home Language	Afrikaans	30,47
	English	1,58
	Sepedi	2,89
	Sesotho	12,17
	Setswana	45,88
	IsiSwati	0,70
	Tshivenda	0,35
	IsiNdebele	0,61
	IsiXhosa	3,94
	IsiZulu	1,31
	IsiTsonga	0,09
Position	Post level 1 – teacher	76,28
	Post level 2 – Head of Department	15,06
	Post level 3 – Deputy Principal	6,66
	Post level 4 – Principal	1,64
Education	Grade 12 + Education Diploma (M + 3)	33,16
	Grade 12 + Higher Education Diploma or B. Degree (M + 4)	45,68
	Grade 12 + Education Diploma + Honours Degree (M + 5)	18,51
	Grade 12 + Education Diploma + Masters Degree	2,64
Gender	Male	30,52
	Female	69,48
Marital status	Single	21,34
	Engaged	4,18
	Married	46,25
	Separated/Divorce/Death	3,22
	Remarried	1,57

Procedure

The Director-General of the North West Education Department was asked for permission to conduct the study. Meetings were convened with the management teams in the districts that were randomly selected to be included in the sample. The role of the district manger was to provide dates of their principal meetings where presentations where made regarding the objective of the study. Principals were provided with questionnaires to give to their staff. Envelopes with stickers were also included in this package to ensure confidentiality. The completed questionnaires were to be given to the principal, who then deposited it with the circuit manager for collection at the circuit office.

Measuring battery

A *biographical questionnaire* was designed to gather gender, position, education and marital status.

The *ASSET* (which refers to An Organisational Stress Screening Tool) was developed by Cartwright and Cooper (2002) as an initial screening tool to help organisations assess the risk of occupational stress in their workforce. It measures potential exposure to stress in respect to a range of common workplace stressors. It also provides important information on current levels of physical health, psychological well-being and organisational commitment and provides data to which the organisation can be compared. The *ASSET* is divided in four questionnaires. The first questionnaire (37 items) measures the individual's perception of his or her job. The second questionnaire (9 items) measures the individual's attitude toward his or her organisation. The third questionnaire (19 items) focuses on the individual's health. The fourth questionnaire (24 items) focuses on supplementary information. These items are customized specific to the teaching environment. The first three questionnaires of the *ASSET* are scored on a six-point scale with 1 (*strongly disagree*) to 6 (*strongly agree*). The fourth questionnaire is scored on a four-point scale with 1 (*never*) to 4 (*often*).

The *ASSET* has an established set of norms from a database of responses from 9188 workers in the public and private sector (non-higher education institutions) organisations in the UK. Reliability of the scale 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 (Cartwright & Cooper, 2002). Johnson and Cooper (2003) found that the Psychological Well-being subscale has good convergent validity with an existing measure of psychiatric disorders, the General Health Questionnaire (Goldberg & Williams, 1988). Tytherleigh (2003) used the *ASSET* as an outcome measure of job satisfaction in a nationwide study of occupational stress levels in 14 English higher education institutions. The alpha coefficients of the scales of the *ASSET* ranged from 0,64 – 0,94.

Statistical analysis

Structural equation modelling (SEM) methods as implemented by AMOS (Arbuckle, 1997) were used to assess the construct validity of the scales of the ASSET and to test a causal model of work-related ill-health. Various goodness-of-fit indices were used to summarise the degree of correspondence between the implied and observed covariance matrixes: (1) The χ^2 goodness-of-fit statistic A large χ^2 relative to the degrees of freedom indicates a need to modify the model to better fit the data; (2) The χ^2 /degrees of freedom ratio (CMIN/DF) (3) The Goodness of Fit Index (GFI); (4) The Adjusted Goodness-of-Fit Index (AGFI); (5) The Normed Fit Index (NFI); (6) The Comparative Fit Index (CFI); (7) The Tucker-Lewis Index (TLI), and (8) The Root Mean Square Error of Approximation (RMSEA) (Byrne, 2001).

Furthermore, the SAS-program (SAS Institute, 2000) was used to compute descriptive statistics, correlations and one-way analysis of variance. Cronbach alpha coefficients and inter-item correlations were used to determine the internal consistency, homogeneity and unidimensionality of the measuring instruments (Clark & Watson, 1995). Pearson product-moment correlation coefficients were used to specify the relationship between the variables. One-way analysis of variance (ANOVA) was used to determine the differences between the sub-groups of the sample. Tukey's Standardised Range t-tests were used to determine the statistical significance of differences obtained during ANOVAs. In terms of statistical significance, it was decided to set the value at $p \leq 0,05$. Effect sizes (Steyn, 1999) were used to decide on the practical significance of the findings. A cut-off point of 0,30 (medium effect, Cohen, 1988) was set for the practical significance of correlation coefficients.

RESULTS

Structural equation modelling with the aid of the AMOS-program (Arbuckle, 1999) was used to test the original theoretical factorial model of the ASSET. Global assessments of model fit were based on several goodness-of-fit statistics (see Table 2).

Table 2

The Goodness-of-Fit Statistics for the Hypothesised ASSET Model

Variables	χ^2	<i>p</i>	χ^2/df	GFI	AGFI	NFI	TLI	CFI	RMSEA
Resources and Communication	1,64	0,20	1,64	1,00	0,99	1,00	0,99	1,00	0,02
Job Security	0,73	0,39	0,73	1,00	1,00	1,00	1,00	1,00	0,00
Work-Life Balance	8,11	0,02	4,06	1,00	0,98	0,99	0,98	0,99	0,05
Control	13,06	0,01	6,53	0,99	0,97	0,99	0,97	0,99	0,07
Overload	3,76	0,15	1,88	1,00	0,99	1,00	0,99	1,00	0,03
Job Characteristics	75,87	0,01	5,84	0,98	0,96	0,93	0,90	0,94	0,06
Work Relationships	1,56	0,01	8,26	0,97	0,94	0,93	0,91	0,94	0,07
Commitment	155,03	0,01	6,20	0,97	0,95	0,97	0,96	0,97	0,07
Health	808,62	0,01	6,13	0,93	0,91	0,91	0,91	0,92	0,07

Overall low χ^2 values indicate an overall satisfactory fit with the original model, except for the dimension of Health, Commitment from the Individual and the Job Characteristics. The other fit statistics indicate a satisfactory fit of the measurement model to the data. All the NFI and TLI values of the ASSET are higher than the recommended cut-off values (Bentler, 1992). Bentler (1990) suggested that the CFI should be the index of choice and the CFI values (except Health) are higher than 0,95 as suggested by Hu and Bentler (1999). Acceptable RMSEA values (lower than 0,08) were found on all the dimensions of the ASSET. The goodness-of-fit statistics on these dimensions are satisfactory and indicative of fit between the model and the sample data.

The descriptive statistics of the ASSET items are presented in Table 3.

Table 3

Descriptive Statistics, Alpha Coefficients and Inter-Item Correlations of the ASSET

Dimension/Item	Sten	Mean	SD	Skewness	Kurtosis	$r(\text{Mean})$	α
Work-Life Balance	4	11,35	4,82	0,42	-0,74	0,35	0,69
Work longer hours than choose/want to	5	3,28	1,68	0,18	-1,31	-	-
Work unsocial hours	7	3,70	1,74	0,66	-0,01	-	-
Too much time travelling	5	2,38	1,57	1,07	-0,01	-	-
Work interferes with my home/personal life	3	3,00	1,71	0,41	-1,22	-	-
Resources and Communication	2	11,17	3,95	0,44	-0,00	-	-
Not informed about what goes on in organisation	1	2,44	1,30	0,94	0,15	0,27	0,59
Never told I am doing a good job	4	2,86	1,46	0,56	-0,77	-	-
Not adequately trained for job	3	2,45	1,43	0,95	-0,08	-	-
Do not have proper equipment/resources	7	3,42	1,69	0,07	-1,31	-	-
Work Relationships	4	19,05	6,82	0,82	0,88	-	-
Boss intimidating/bullying	4	2,09	1,42	1,41	1,03	0,32	0,79
Lack of support from boss/colleagues	3	2,45	1,37	0,94	0,01	-	-
Feel isolated at work	3	2,18	1,23	1,25	1,08	-	-
Not sure of expectations from boss	3	2,28	1,31	1,16	0,68	-	-
Colleagues are not pulling their weight	5	3,30	1,60	0,13	-1,20	-	-
Boss is forever finding fault	4	2,06	1,19	1,49	1,99	-	-
Others take credit for what I have achieved	7	2,74	1,49	0,63	-0,78	-	-
Relationships with colleagues are poor	4	1,96	1,12	1,65	2,81	-	-
Overload	5	11,07	4,12	0,42	-0,33	-	-
Technology in job is overloading	6	2,67	1,45	0,73	-0,50	0,36	0,68
Unrealistic deadlines	5	2,49	1,25	0,87	0,11	-	-
Unmanageable workloads	4	2,69	1,44	0,74	-0,51	-	-
Not enough time to do job properly	6	3,23	1,58	0,23	-1,16	-	-
Job Security	6	11,93	4,20	0,42	-0,15	-	-
Job is insecure	6	3,02	1,70	0,44	-1,18	0,24	0,57
Job is not permanent	5	2,24	1,63	1,26	0,26	-	-
My job is likely to change in future	6	3,69	1,56	-0,25	-1,15	-	-
My skills may become redundant	7	2,98	1,48	0,43	-0,79	-	-

Table 3 (continue)

Descriptive Statistics, Alpha Coefficients and Inter-Item Correlations of the ASSET

Dimension/Item	Sten	Mean	SD	Skewness	Kurtosis	r(Mean)	α
Job Characteristics	5	24,94	6,39	0,28	0,44	0,17	0,61
Same job for next 5 – 10 years	8	4,20	1,64	-0,71	-0,78	-	-
Physical work conditions are unpleasant	5	2,91	1,67	0,54	-0,99	-	-
Job involves risk of physical violence	4	2,33	1,45	1,07	0,16	-	-
Work performance closely monitored	8	3,99	1,43	-0,64	-0,64	-	-
Organisation is constantly changing for sake of change	7	3,38	1,63	0,14	-1,21	-	-
Work is dull and repetitive	5	2,50	1,44	0,89	-0,24	-	-
Deal with difficult customers/clients	4	3,20	1,55	0,17	-1,15	-	-
Do not enjoy job	4	2,45	1,48	0,95	-0,13	0,40	0,72
Control	2	11,23	4,11	0,57	-0,01	-	-
Little control over many aspects of job	3	3,12	1,50	0,27	-0,96	-	-
Not involved in decisions affecting my job	4	2,74	1,42	0,72	-0,47	-	-
My ideas/suggestions are not taken into account	5	2,74	1,36	0,77	-0,29	-	-
Little/no influence over performance targets	3	2,62	1,28	0,88	0,09	-	-
Pay and Benefits	-	-	-	-	-	-	-
Pay and benefits not so good as others in similar jobs	4	3,26	1,79	0,23	-1,40	0,49	0,83
Commitment from Organisation	9	22,22	4,97	-0,84	0,73	-	-
Valued and trusted by organisation	7	4,44	1,25	-1,00	0,40	-	-
Not seeking work elsewhere	7	4,22	1,50	-0,73	-0,52	-	-
Proud of organisation	10	4,63	1,23	-1,16	1,04	-	-
Interested in aspect of organisation outside my job	8	4,41	1,24	-0,95	0,35	-	-
Overall happy with organisation	9	4,51	1,23	-1,01	0,52	0,33	0,65
Commitment from Individual	7	17,54	3,69	-0,81	1,01	-	-
Willing to put myself out for organisation	2	3,79	1,55	-0,37	-1,05	-	-
Prepared to take more responsibility	5	4,23	1,41	-0,90	-0,11	-	-
Worthwhile to work hard for organisation	8	4,68	1,19	-1,24	1,29	-	-
Committed to organisation	8	4,85	1,11	-1,44	2,31	0,39	0,79
Physical Health	7	14,36	4,23	-0,05	-0,62	-	-
Lack of appetite/over-eating	5	2,37	1,02	-0,10	-1,22	-	-
Indigestion/heartburn	5	2,21	1,04	0,25	-1,18	-	-
Insomnia/sleep loss	6	2,34	1,08	0,13	-1,27	-	-
Headaches	7	2,73	1,00	-0,32	-0,94	-	-
Muscular tension/aches/pains	7	2,59	0,99	-0,24	-0,99	-	-
Feeling nauseous/sick	8	2,13	0,93	0,31	-0,88	0,40	0,89
Psychological Health	5	23,33	7,50	0,53	-0,05	-	-
Panic/anxiety attacks	10	2,14	1,02	0,37	-1,07	-	-

Table 3 (continue)

Descriptive Statistics, Alpha Coefficients and Inter-Item Correlations of the ASSET

Dimension/Item	Sten	Mean	SD	Skewness	Kurtosis	r(Mean)	α
Constant irritability	4	2,02	0,97	0,52	-0,82	-	-
Difficulty in making decisions	5	2,10	0,91	0,27	0,93	-	--
Feeling/becoming easily angry	3	2,02	0,97	0,25	0,96	-	-
Constant tiredness	5	2,43	1,00	-0,06	-1,11	-	-
Feeling unable to cope	6	2,12	0,93	0,26	-0,97	-	-
Avoiding contact with other people	6	1,89	0,95	0,68	-0,70	-	-
Mood swings	3	1,96	0,95	0,58	-0,73	-	-
Unable to listen to other people	4	1,74	0,88	0,84	-0,43	-	-
Having difficulty concentrating	6	2,08	0,92	0,32	-0,94	-	-

Table 3 shows that the scores on the 12 dimensions of the ASSET are normally distributed in the sample with low skewness and kurtosis. Most of the items have relatively normal distributions, with low skewness and kurtosis. The Cronbach alpha coefficients, varying from 0,59 – 0,89, compare reasonably well with the guideline of 0,70 (0,55 in basic research), demonstrating that a large portion of the variance is explained by the dimensions (internal consistency of the dimensions) (Nunnally & Bernstein, 1994). All the mean inter-item correlations of the ASSET dimensions are within the guideline of $0,15 < r < 0,50$ (Clark & Watson, 1995).

Inspection of Table 3 indicates that all the stressor dimensions are perceived as averagely to moderately stressful. However, Commitment from the Organisation and Physical (ill) health have higher stens (9 and 7 respectively) compared to the other dimensions of the ASSET. "Being proud of the organisation", "Being interested in aspects of the organisation", "It is worthwhile to work for the organisation", and "Commitment to the organisation" are just some of the items that contributed to the above-average sten of Commitment from the organisation. Table 3 also indicates that frequently feeling sick, headaches, muscular tension, aches and/or pains contribute to above average physical ill-health. The sten of Psychological (ill) health is average, but panic and anxiety attacks seem to be concern (sten = 10).

Stressors which obtained higher than average sten scores include working unsocial hours, not having proper and sufficient equipment and/or resources, people taking credit for what others

have achieved, skills that may become redundant and constant changes of the organisation, while aspects such as close monitoring of work and doing the same job for the next five to 10 years are regarded as very stressful (sten = 8).

In spite of being ill-equipped, being informed about what goes on in the organisation seems to contribute positively to the fact that Resources and Communication, with a sten of 2, as measured by the ASSET. This is perceived by teachers as a low stressor, and they do not perceive their work as an interference with their home or personal life. The other dimensions and items with sten scores of 4-6 indicate average sources of stress.

The product-moment correlation coefficients between the ASSET dimensions are reported in Table 4.

Table 4

Product-Moment Correlation Coefficients of the ASSET dimensions

Dimensions	1	2	3	4	5	6	7	8	9	10
1. Work-life Balance	-	-	-	-	-	-	-	-	-	-
2. Resources and Communication	0,20*	-	-	-	-	-	-	-	-	-
3. Work Relationships	0,32**	0,56***	-	-	-	-	-	-	-	-
4. Overload	0,56***	0,51***	0,57***	-	-	-	-	-	-	-
5. Job Security	0,36**	0,37**	0,40**	0,46**	-	-	-	-	-	-
6. Job Characteristics	0,45**	0,50***	0,53***	0,55***	0,44**	-	-	-	-	-
7. Control	0,47**	0,58***	0,63***	0,57***	0,43**	0,53***	-	-	-	-
8. Commitment - Individual	-0,14*	-0,21*	-0,19*	-0,15*	-0,14*	-0,23*	-0,29*	-	-	-
9. Commitment - Organisation	-0,21*	-0,32**	-0,37**	-0,26*	-0,26*	-0,31**	-0,43**	0,65***	-	-
10. Physical Health	0,30**	0,20*	0,26*	0,30**	0,20*	0,32**	0,28*	-0,13*	-0,19*	-
11. Psychological Health	0,40**	0,30**	0,38**	0,43**	0,28*	0,45**	0,41**	-0,21*	-0,31**	0,63***

* $p \leq 0,05$ – statistically significant

+ $r > 0,30$ – practically significant (Medium effect)

++ $r > 0,50$ – practically significant (Large effect)

Inspection of Table 4 indicates that Physical (ill)health is practically significantly related to stress because of Work-life Balance, Overload, Job Characteristics (all medium effects). Psychological (ill)health is practically significantly related to Work-life Balance, Resources and Communication, Work Relationships, Overload, Job Characteristics, Control and Commitment from the Organisation. Commitment from the Organisation is practically significantly related to Resources and Communication, Work Relationships, Job Characteristics and Control.

Next, the differences between various demographic groups of teachers are analysed in terms of perceived occupational stress, organisational commitment and ill-health as reflected by the ASSET. The differences in occupational stress, organisational commitment and ill-health of teachers in different types of schools are reported in Table 5.

Table 5

ANOVAs – Differences in Occupational stress, Organisational Commitment and Ill-health of Teachers in Different Types of Schools

Item	Primary	Intermediate	Combined	Secondary	Root MSE	p
Work-life Balance	10,58	10,14 ^a	10,24	13,31 ^b	4,67	0,00*
Resources and Communication	10,84	12,40	11,70	11,39	3,94	0,00*
Work Relationships	18,47	19,83	20,85	19,77	6,83	0,00*
Overload	10,38	10,60 ^b	10,88	12,57 ^b	4,02	0,00*
Job Security	11,46	11,64	12,24	12,97	4,19	0,00*
Job Characteristics	24,29	24,16	23,91	26,32	6,36	0,00*
Control	10,69	11,05	11,33	12,20	4,06	0,00*
Commitment from Organisation	22,89	21,94	21,58	21,07	4,88	0,00*
Commitment from Individual	17,73	17,16	16,76	17,34	3,63	0,16
Physical Ill-health	14,38	13,37	14,12	14,54	4,22	0,24
Psychological Ill-health	22,94	22,14	21,64	24,50	7,52	0,00*

* Statistically significant difference: $p < 0,01$

a Practically significant differences from group (in row) where b (medium effect, $d \geq 0,5$) or c (large effect, $d \geq 0,8$) are indicated

Inspection of Table 5 shows that statistically significant differences exist in the experience of teachers of nearly all of the different job categories, with the sole exception of Commitment from the Individual and Physical Health. The experience of Work-life Balance showed a practically significant difference (with a medium effect) between teachers in Intermediate and those teaching in Secondary schools. The mean scores for teachers in Primary schools also showed a practically significant difference in the experience of Workload, compared to the colleagues in Secondary schools. Teachers in Secondary schools generally did score higher on perception of job dimensions as potential stressors, lower on attitude towards the organisation, and higher on ill-health, relative to the other subgroups (different types of

schools) in the sample. However, none of these means scores, although statistically significant differences exist, showed any practical significance.

The difference in occupational stress, organisational commitment and ill-health of teachers with different qualifications is given in Table 6.

Table 6

ANOVAs – Differences in Occupational stress, Organisational Commitment and Ill-health of Teachers with Different Qualifications

Item	1 M + 3 (Dip)	2 M + 4 (B Degree)	3 M + 5 (Hons Degree)	4 M + 6 (Masters Degree)	Root MSE	p
Work-life Balance	10,72 ^a	11,46	13,11 ^b	13,77	4,79	0,00*
Resources and Communication	11,22	10,94	11,19	11,39	3,97	0,73
Work Relationships	18,67	19,23	19,83	18,39	6,90	0,29
Overload	10,85	11,01	12,00	12,73	4,11	0,00*
Job Security	11,62	12,11	12,63	12,81	4,29	0,06
Job Characteristics	25,07	24,55	25,90	26,46	6,44	0,07
Control	10,60	11,33	11,97	12,16	4,15	0,00*
Commitment from Organisation	22,81	22,00	21,43	21,12	4,94	0,00*
Commitment from Individual	17,62 ^c	17,52 ^c	7,34 ^a	16,12 ^c	3,72	0,23
Physical Ill-health	14,11	14,46	14,50	14,62	4,21	0,64
Psychological Ill-health	22,24	23,78	24,89	24,31	7,51	0,00*

* Statistically significant difference: $p < 0,01$

a Practically significant differences from group (in row) where b (medium effect, $d \geq 0,5$) or c (large effect, $d \geq 0,8$) are indicated

Table 6 shows that statistically significant differences exist in the experience of stress because of Work-life Balance, Overload as well as Commitment from the Organisation and Psychological (ill)Health between teachers with different qualifications. There is a practically significant difference (of medium effect) between the stress because of Work-life Balance between teachers with a Grade 12 and a Teaching Diploma and teachers with a Master's degree. A practically significant difference (large effect) also exists in the experience of Commitment from the Individual to the organisation between teachers with a Teaching Diploma and those with a Master's degree.

The difference in occupational stress, organisational commitment and ill-health of teachers in different age categories, as measured by the ASSET, is given in Table 7.

Table 7

ANOVAs – Differences in Occupational stress, Organisational Commitment and Ill-health of Teachers in Different Age Categories

Item	1 18 - 27	2 28 - 32	3 33 - 38	4 39 - 44	5 45 - 50	6 51 - 56	7 57 - 58	Root MSE	p
Work-life Balance	13,87 ^b	10,72 ^a	11,09	11,97	10,90	12,19	12,14	4,80	0,00*
Resources and Communication	10,50	11,09	11,08	11,52	11,03	10,41	10,71	3,91	0,38
Work Relationships	20,41	18,94	19,40	19,49	18,57	17,54	19,07	6,86	0,26
Overload	12,06	10,37	11,05	11,59	10,87	11,07	11,59	4,14	0,15
Job Security	13,16	11,63	12,47	12,09	11,42	11,80	11,60	4,26	0,14
Job Characteristics	25,75	24,50	25,30	25,64	24,26	24,73	23,86	6,48	0,31
Control	12,72 ^b	10,16 ^b	11,37	11,50	10,64	10,92	11,35	4,04	0,00*
Commitment from Organisation	21,84	22,26	22,56	21,76	22,80	22,01	21,43	4,95	0,37
Commitment from Individual	16,25 ^a	18,17 ^b	17,98	17,13	17,49	17,44	16,89	3,67	0,01*
Physical (ill) Health	15,75	14,12	13,81	14,70	13,91	14,18	5,21	4,16	0,06
Psychological (ill) Health	27,88 ^b	22,09 ^a	23,02	23,64	23,02	22,38	24,61	7,50	0,00*

* Statistically significant difference: $p < 0,01$

a Practically significant differences from group (in row) where b (medium effect, $d \geq 0,5$) or c (large effect, $d \geq 0,8$) are indicated

Inspection of Table 7 that statistically significant differences exist in the experience of stress because of Work-life Balance and Control, but also in the Commitment from the Individual to the Organisation and Psychological (ill)Health between teachers in the different age categories. Stress because Work-life Balance and Control is practically significantly higher (medium effect) for teachers in the age group 18-27, than for those in the 28-32 group. Teachers in the age group 28-32 obtained a practically significantly higher score (of medium effect) on Commitment from Individual to the Organisation compared with the 18-27 age group. Teachers in the age group 18-27 obtained a practically significantly higher score (medium effect) on Psychological (ill) health compared to the 28-32 age group.

The difference in occupational stress, organisational commitment and ill-health of teachers in different years of experience categories is given in Table 8.

Table 8

ANOVAs – Differences in Occupational stress, Organisational Commitment and Ill-health of Teachers with Different Years of Experience

Item	1 0 - 5	2 6 - 10	3 11 - 15	4 16 - 20	5 21 - 25	6 26 - 30	7 31 - 40	Root MSE	<i>p</i>
Work-life Balance	11,49	10,80	11,27	12,23	11,93	12,07	10,62	4,85	0,05
Resources and Communication	10,98	11,18	11,42	11,12	10,77	11,26	10,19	3,96	0,61
Work Relationships	19,79	19,08	19,39	18,75	18,70	19,33	18,65	6,86	0,87
Overload	11,68	10,63	11,18	11,36	11,37	11,62	10,03	4,19	0,16
Job Security	12,59	11,82	12,37	1,222	11,28	12,09	10,87	4,23	0,09
Job Characteristics	24,44	25,12	25,56	24,94	24,62	26,02	23,70	6,51	0,47
Control	11,40	10,94	11,47	11,28	11,19	11,09	10,87	4,17	0,88
Commitment from Organisation	22,40	22,24	21,46	22,45	22,60	21,79	21,97	4,93	0,38
Commitment from Individual	17,60	18,10	16,88	17,26	17,91	17,14	17,46	3,65	0,01
Physical Ill-health	14,85	14,21	14,35	14,48	14,39	14,17	13,70	4,28	0,85
Psychological Ill-health	24,63	23,26	23,72	23,43	22,99	22,76	21,46	7,66	0,42

• Statistically significant difference: $p < 0,01$

a Practically significant differences from group (in row) where b (medium effect, $d \geq 0,5$) or c (large effect, $d \geq 0,8$) are indicated d

Inspection of Table 8 indicates that the differences in mean scores between teachers with different years of experience do not show any statistical or practical significance. However, closer inspection revealed that those teachers with the most (31–40 years) experience viewed the different job characteristics, as measured by the ASSET, as potential stressors to a lesser extent, compared to other years of experience sub-groups. In contrast, those with relatively limited numbers of years experience (0 -5), experience these characteristics as potential stressors to a greater extent when compared to their colleagues in other sub-groups.. However, none of these differences were either statistically or practically significant.

Next, t-tests were done to determine whether significant differences exist between the occupational stress, organisational commitment and ill-health of males and females. However, no gender statistically significant gender differences were found.

Next, the hypothesis that individual commitment to the organisation moderates the effects of job stress on health was tested with AMOS (Arbuckle, 1997). It was hypothesised that

Occupational Stress leads to Ill-health, but that an individual's commitment to the organisation moderates the effects of occupational stress on ill-health. As part of developing a structural model, a second-order exploratory factor analysis was conducted on the seven constructs which form part of occupational stress (i.e. Work-life Balance, Job Resources, Job Insecurity, Job Characteristics, Control, Work Relationships and Overload). Only one factor with an eigenvalue larger than one was extracted. This factor explained 55,52% of the total variance. Furthermore, individual commitment to the organisation and ill-health were included in the model. The model is given in Figure 1.

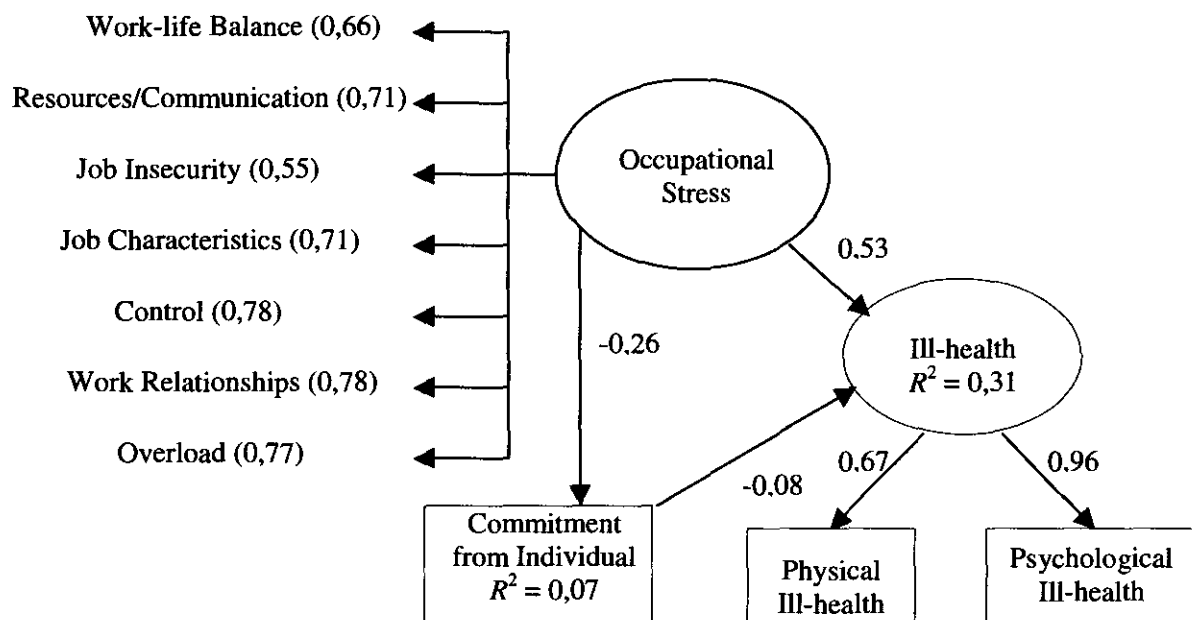


Figure 1. A model of occupational stress

Results indicated that the model did fit the data adequately. However, the modification indices (MI), revealed that the fit between the model and the data could be further improved if correlations were allowed between the measurement errors of occupational stress dimensions. It is important to note that items with identical rating scales often have correlating measurement errors (Byrne, 1989). This means that the fit of the proposed model can be improved if the measurement errors between Work-life Balance on the one hand and Resources and Communication (MI = 129,67) and Work Relationships (MI = 75,51) respectively on the other hand. The revised model – including covariation – shows a good fit

between the hypothesised model and the data ($\chi^2 = 157,25$ GFI = 0,97; AGFI = 0,95; NFI = 0,97, IFI = 0,97; TLI = 0,96; CFI = 0,97 and RMSEA = 0,06).

As can be seen in Figure 1, the path from occupational stress to ill-health is statistically significant, indicating that high levels of stress as experienced by teachers result in physical and psychological ill-health. Furthermore, the path from Occupational Stress to Individual Commitment to the Organisation is statistically significantly negative, indicating that Occupational Stress affects individual commitment. However, the path from Individual Commitment to the Organisation is also statistically significantly negative, which confirms that the effect of Occupational Stress on Ill-health depends on an individual's level of commitment. Therefore, it seems as if Individual Commitment to the Organisation moderates the effect of Occupational Stress on Ill-health. Figure 1 shows that 7% of the variance in Commitment from the Individual to the Organisation is explained by Occupational Stress, while 31% of the variance in Ill-health is explained by Occupational Stress and Individual Commitment to the Organisation.

DISCUSSION

The aim of this study was to investigate the construct validity and internal consistency of the ASSET for teachers in the service of the Education Department of the North West Province . The results confirmed the importance of occupational stress as a factor affecting the health of teachers. Using the structural equation modelling approach, the results showed a satisfactory fit with the original model after three of the ASSET dimensions (Work Relationships, Commitment, and Health) were re-specified by correlating errors.

Reliability analysis revealed that all the dimensions were sufficiently internally consistent. The 12 dimensions and most of the items of the ASSET were normally distributed in the sample with low skewness and kurtosis. The analysis of the sten scores of the ASSET dimensions indicates average scores on all the sources of stress as measured by the instrument. However, closer inspection revealed that some aspects (as measured by certain items) of these dimensions obtained very high scores. On the other hand, the scores obtained for the effects of stress (outcomes), are high for physical (ill)health to average for psychological (ill)health and very high for perceived commitment from the organisation to

high for commitment from the individual. Although average scores were obtained for different perceived stressors in the workplace of teachers, Job Security obtained the highest score followed by overload, Job Characteristics, Work Relationship, Pay and Benefits and Work-Life Balance. Control, Resources and Communication were experienced as less stressful.

In spite of the fact that the dimension Job Characteristics obtained average sten scores, most items with high sten scores were part of this dimension. Particular characteristics about the job of a teacher that high sten scores were obtained regarding close monitoring of performance and having the same job for the next five to 10 years. The North West Education Department recently introduced initiatives aimed at improving the performance of public schools, such as the introduction of school management teams and whole school development projects, to mention a few. All these interventions include some aspect of monitoring the performance of teachers, which has been neglected as a management activity in the past in public schools. On the other hand, curricula for schools are not frequently revised. Therefore some teachers could be teaching the same subject matter for ten years and therefore have no expectations that the subject matter would change during the following ten years. Repetitive tasks can become stressful, especially if teachers do not think about and approach their teaching activities in a positive and creative fashion.

Other items that have obtained high sten scores included having to work unsocial hours, lack of proper equipment, the fact that others take credit for I have done, fears that skills will become redundant, constant changes that are taking place in the organisation. Participation in extra-mural activities such as sports (coaching and refereeing) normally increases the likelihood that the service of teachers would be needed after hours and during weekends when competitions take place. On the other hand meaningful interaction with parents to discuss progress of their children could only take place after normal working hours. These factors, as well as preparation for lessons and the marking of assignments and class tests, could all contribute to the perception that work needs to be attended to during unsocial hours. Fears of skills becoming redundant could be caused by the fact that very few schools use computers for covering most teaching activities. Teachers may also experience that they do not have adequate contact with the mainstream economic activities and the lack of a continuous professional development in education could also contribute to the fears about redundant skills. A number of very much needed changes were introduced in the public

sector, after the first democratic elections, including schools, which contribute to the perception of changes for the sake of change.

When interpreting the sten scores, we want low scores for perception of your job (stressors) and your health, but high scores for attitudes towards your organisation (Tytherleigh, 2002). However, in the present study, the ideal situation prevailed only partially, in the sense that low scores were observed for perception of your job (stressors), high scores for attitudes towards the organisation (commitment), but alarmingly, high scores were observed for specific Physical symptoms such as headaches, feeling sick and muscular tension/aches/pains, and very alarming sten scores for specific Psychological (ill)Health symptoms such as the experience of panic and anxiety attacks.

Sten scores for all categories of commitment from the organisation and commitment from individual to the organisation obtained, compared to normative data, very high scores except for two items covering individual commitment. Teachers in the sample seem very proud to be associated with their organisations (sten of 10), but are not willing to put themselves up for management in their organisations (Schools, Education Department – province / national / regional / local management). Respondents were overall very happy with and committed to their organisations.

Occupational stressors were positively related to physical and psychological ill-health. Occupational stressors were also negatively related to both commitment from the organisation and individual. These findings confirm previous findings that work demands require sustained effort and are therefore associated with certain physical and/or psychological costs (Schaufeli & Bakker, 2004). It also in line with recent findings that suggested that organisational commitment was not only related to most of the physical and psychological outcomes among workers, but also to the moderating effects on the stressor-health relationship (Siu, 2002).

Regarding the differences in stress levels (as measured by the ASSET) based on biographical characteristics of the population, commitment from separated and remarried teachers and their perception of the organisations commitment towards them seem relatively higher compared to teachers with a different marital status. However, remarried and engaged teachers showed practically significant differences in their experiences of Work-life Balance,

Resources and communication, Overload and Job Characteristics. Teachers in Secondary schools generally did score higher on perception of job dimensions as potential stressors, lower on attitude towards the organisation, and higher on ill-health, relative to the other sub-groups (different types of schools) in the sample. There is a practically significant difference between the experience of Work-life Balance and practically significant differences also exist in the experience of Commitment from the Individual to the organisation between teachers with the minimum and those with the highest qualifications. Teachers in the age group of 18 to 27 generally scored higher on perception of job dimensions as potential stressors, lower on attitude towards the organisation, and higher on ill-health, relative to the other sub-groups (different age groups) in the sample. Results obtained in this study indicate that those at risk of high stress in the North West Education Department seem to be those who are either separated or remarried, teaching in secondary schools, with the minimum qualifications and that have just started their careers. No significant differences exist between the experiences of male and female teachers. Lai et al. (2000) indicate that work experience in the organisation (i.e. length of service) tends to enhance job satisfaction and ultimately reducing the experience of stress. However, Preuss and Schaeke (1998) found no relationship between age, experience and level of perceived strain. In this study it seems that younger teachers perceived stress manifested in either physical or psychological health problems.

A moderated regression analysis indicated that a negative relation exists between occupational stress and ill-health on the one hand and individual commitment on the other hand, with 7% of the variances in individual commitment being explained by occupational stress. The negative relationships between individual commitment and job stress and strain are indicative of a moderating effect of the first mentioned in the stress-strain relationship. The analysis also indicates a positive relationship between job stress and strain (physical and psychological (ill)health) with job stress explaining 31% of the variances in strain.

Limitations of the present study include the sampling procedure, as this may impact on the possibility of generalisation of the findings to the total study population. Future studies could benefit hugely in terms of a stratified random-sample design which would ensure sufficient representation of the different groups in the total population. Future studies should also focus on longitudinal designs where interferences in terms of cause and effect could be made. A further limitation of this study is its sole reliance on self-report measures. According to Schaufeli, Enzmann and Girault (1993) the exclusive use of self-report measures increases

the likelihood that at least part of the shared variances between measures can be attributed to method variance.

RECOMMENDATIONS

Given the pervasive nature of occupational stress, this study is a first step toward the validation of the ASSET as an organisational stress screening tool that can be used in schools in South Africa. As such, the current study only considered teachers in the certain districts in the North West Education Department and it is recommended that the study be expanded to all the other districts in the North West province as well as in the other provinces over South Africa as well as including similar samples in private and special schools in South Africa. Further refining and testing of the ASSET are needed. In stress research in general it is important to take a holistic approach in terms of stress and strain of the employee (Cooper, Dewe & O'Driscoll, 2001) in order to minimise the negative spin-offs of occupational stress.

According to Kompier and Kristensen (2001), primary interventions may, in the first place, be directed at either the work situation or the coping capacity of the employee. Work-oriented interventions aim to improve the fit between an individual and the workplace. Worker-oriented interventions aim at teaching employees to deal more effectively with experienced stress, or to modify their appraisal of a stressful situation, so that the perceived stress threats are reduced. If especially the physical and psychological stressors are allowed to continue unattended to, the organisation can expect to find negative costs associated with continued, elevated levels of stress, such as burnout, absenteeism, employee turnover and lowered levels of service. In the present study physical and psychological health were found to be the major outcomes of perceived stressors.

Secondary-level interventions can be implemented to prevent employees who are already showing signs of stress from getting sick and to increase their coping capacity. Typical examples would include cognitive structuring, time management, conflict resolution techniques and coping strategies. Tertiary-level interventions are concerned with the rehabilitation of individuals who have suffered ill-health or reduced well-being as a result of strain in the workplace.

Finally, it is recommended that with regard to the perceived occupational stress of employees within an insurance company, that the current findings based on the results of the ASSET be validated with regards to the equal comparison of the perceived strain construct across cultural groups within the insurance industry in order to be able to generalise findings in the multi-cultural South African context.

REFERENCES

- Anonymous. (1999). *Most SA teachers ready to quit*. Pretoria: Citizen, 19 Apr.
- Arbuckle, J.L. (1997). *Amos user's guide version 3.6*. Chicago: Smallwaters.
- Arbuckle, J.L. (1999). *Amos 4.0*. Chicago, IL: Smallwaters.
- Bentler, P.M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, 107, 238 – 246.
- Bentler, P.M. (1992). On the fit of models to covariances and methodology to the Bulletin. *Psychological Bulletin*, 112, 400-404.
- Bosma, H., Peters, R., Siegrit, J. & Marmot, M. (1998). Two alternative stress models and the risk to coronary heart disease. *American Journal of Public Health*, 88, 68-74.
- Boyle, G. J., Borg, M. G., Falzon, J. M., & Baglioni, A. J. Jr. (1995). A structural model of the dimensions of teacher stress. *British Journal of Educational Psychology*, 65, 49-67.
- Byrne, B.M. (1989). *A primer of LISREL: Basic applications and programming for factor analysis models*. New York: Springer-Verlag.
- Byrne, B.M. (2001). *Structural equation modeling with AMOS: Basic concepts, applications and programming*. Mahwah, NJ: Erlbaum.
- Capel (1991). S. A. (1991). A longitudinal study of burnout in teachers. *British Journal of Educational Psychology*, 61, 36-45.
- Cartwright, S. & Cooper, C.L. (2002). *ASSET: An Organisational Stress Screening Tool – The Management Guide*. Manchester, UK: RCL Ltd.
- 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* (Revised ed.). Orlando, FL: Academic Press.
- Cooper, C.L. & Dewe, P.J. (2004). *Stress: A brief history*. Oxford: Blackwell Publishing.
- Cooper, C.L. (1998). *Theories of organizational stress*. Oxford, UK: Oxford University Press.
- Cooper, C.L., Dewe, P. & O'Driscoll, M. (ed.). (2001). *Organizational stress: A review of critique of theory, research and applications*. Thousand Oak, CA: Sage.
- Cox, T. & Ferguson, E. (1991). Individual differences, stress, and coping. In C.L. Cooper & R. Payne (Eds.), *Personality and stress: Individual differences in the stress process*, Chichester: John Wiley.

- Frese, M. & Zapf, D. (1999). On the importance of the objective environment in stress and attribution theory: Counterpoint to Perrewe and Zellars. *Journal of Organizational Behavior*, 20, 761-766.
- Goldberg, D.P. & Williams, P. (1988). *A user's guide to the GHQ*. London: NFER, Nelson.
- Greenberg, S. (ed.). (1984). *Stress and the teaching profession*. Baltimore: PH Brooks.
- Hiebert, B., & Farber, I. (1984). Teacher stress: A literature survey with a few surprises. *Canadian Journal of Education*, 9, 14-27.
- Hu, L.T. & Bentler, P.M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6, 1-55.
- International Labour Organisation (ILO). Sectoral activities programme: Salaried employees and professional workers' branch. (1995). *Occupational stress and burn-out of teachers: A review*. Geneva: International Labour Office.
- Jacobs, E. (2002). *Stress takes big toll on teachers*. Pretoria: Pretoria News, 2 Dec.
- 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.
- Jex, S.M., Beehr, T.A. & Roberts, C.K. (1992). The meaning of "stress" items to survey respondents. *Journal of Applied Psychology*, 77, 623-628.
- Johnson, J. (2002). A public agenda survey – staying ahead of the game. *Educational Leadership*, 59(8), 26-30.
- Johnson, S. & Cooper, C. (2003). *The construct validity of the ASSET stress measure*. Manuscript made available by authors.
- Jones, F. & Bright, J. (2001). *Stress: Myth, theory and research*. Harlow, England: Prentice-Hall.
- Kahn, R.L. & Byosiére, P. (1992). Stress in organizations. In M.D Dunnette (Ed.), *Handbook of Industrial and Organisational Psychology* (pp. 571-648). Chicago, IL: Rand McNally.
- Karasek, R. & Theorell, T. (1990). *Healthy work: Stress, productivity and the reconstruction of working life*. New York: Basic Books.
- Kompier, A.J. & Kristensen, T.S. (2001). Organizational work stress interventions in a theoretical, methodological and practical context. In J. Dunham (Ed.), *Stress in the workplace: Past, presence and future* (pp.19-33). London: Whurr Publishers.
- Kyriacou, C. (ed.). (1981). Social support and occupational stress among school teachers. *Educational Studies*, 7, 55-60.

- Lai, G., Chan, K.B., Ko, Y.C. & Boey, K.W. (2000). Institutional context and stress appraisal: The experience of life insurance agents in Singapore. *Journal of Asian & African Studies*, 35, 209-228.
- Lazarus, R. S. & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.
- Marmot, M., Bosma, H. Hemingway, H., Brunner, E. & Stansfield, S. (1997). Contribution of job control and other risk factors to social variations in coronary heart disease. *The Lanet*, 350, 235-239.
- Masters, G. (2001, December 7). Overseas recruiting adding to shortfall. *Times Educational Supplement*, p. 18.
- Mesthri, R. (1999). The role of principals in the management of stress and burnout. *Education Practice*, 3, 19-23.
- Mills, B. (2001). *Many good teachers have quit in despair because of the OBE system*. Jukskei Park, Pretoria: Star, 13 Aug.
- Mowday, R.T., Porter, L.W. & Steers, R.M. (1982). *Employee-organisational linkages: The psychology of commitment, absenteeism and turnover*. New York: Academic Press.
- Ngwezi A.A. (1989). *Stress levels and coping styles amongst teachers*. Unpublished master's dissertation, University of Pretoria, Pretoria.
- Niehaus, L., Myburgh, C.P.H. & Kok, J.C. (1995). Selfhandhawingsvermoë van hoërskool-onderwysers. *Suid-Afrikaanse Tydskrif vir Opvoedkunde*, 15(2), 71-78.
- North West Education Department Statistics for 2001 and 2002. (2004). *Number of days used for sick leave, number of teachers using it, and number of resignations*. Potchefstroom: North West Education Department.
- Nunnally, J.C. & Bernstein, I.H. (1994). *Psychometric theory* (3rd ed.). New York: McGraw-Hill.
- Perrewe, P.L. & Zellars, K.L. (1999). An examination of attribution and emotions in the transactional approach to the organisational stress process. *Journal of Organisational Behavior*, 20, 739-7352.
- Preuss, G. & Schaeke, G. (1998). *Firefighters exposed to psychomental stress and hazardous work situations*. Poster presented at the Work, Health and Stress Conference, Institut für Arbeitsmedizin der Freien Universität, Berlin, Germany.
- Quail, D. (2002). *Profoundly sad so many teachers are quitting*. Pretoria: Citizen, 25 Jul.
- Quick, J.C., Quick, J.D., Nelson, D.L., & Hurrell, J.J. (ed.) (1997). *Preventative stress management in organizations*. Washington: American Psychological Association.

- Robson, (2002)Robson, C. (2002). *Real world research: A resource for social scientists and practitioner-researchers* (2nd edition). Oxford. Blackwell Publishing.
- SAS Institute. (2000). *The SAS System for Windows: Release 8.01*. Cary, NC: SAS Institute Inc.
- Schaufeli, W.B. & Bakker, A.B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behaviour*, 25, 1–23.
- Schaufeli, W.B., Enzmann, D. & Girault, (1995). Measurement of burnout: A review. In W.B. Schaufeli & C. Maslach (Eds.), *Professional burnout: Recent developments in theory and research* (pp. 199-215). Philadelphia, PA: Taylor & Francis.
- Siu, O.L. (2002). Occupational stressors and well-being among Chinese employees: The role of organizational commitment. *Applied Psychology: An International Review*, 5, 527-544.
- Steyn, H.S. (1999). Praktiese betekenisvolheid: Die gebruik van effekgroottes. (Practical significance: The use of effect sizes.) *Wetenskaplike bydraes – Reeks B: Natuurwetenskappe Nr. 117*. Potchefstroom: PU vir CHO.
- Taris, T.W., Schreurs, P.J.G. & Van Iersel-Van Silfhout, I.J. (2001). Job stress, job strain, and psychological withdrawal among Dutch university staff: towards a dual-process model for the effects of occupational stress. *Work & Stress*, 15, 283-296.
- Tytherleigh, M.V. (2003). What employers may learn form English higher education institutions: A fortigenic approach to occupational stress. *SA Journal of Industrial Psychology*, 29(4), 101-106.
- Van Dick, R. & Wagner, U. (2001). Stress and strain in teaching: A structural equation approach. *British Journal of Educational Psychology*, 71, 43-259.
- Wright, L.A. & Smye, M.D. (1996). *Corporate abuse: How lean and mean robs people and profits*. New York: Mcmillan.

CHAPTER 5

ARTICLE 4

A MODEL OF BURNOUT OF TEACHERS IN A DISTRICT OF THE NORTH WEST PROVINCE*

L.T.B. JACKSON

S. ROTHMANN

*WorkWell: Research Unit for People, Policy and Performance, Potchefstroom Campus,
North-West University*

ABSTRACT

The objectives of this study were to assess the relationship between burnout, health, job characteristics and affect of teachers. A cross-sectional survey design was used. Stratified random samples ($N = 266$) were taken of teachers in an area of the North West Province. The Maslach Burnout Inventory – General Survey, the Health subscale of the ASSET, the Job Characteristics Inventory and the Affectometer were administered. The results showed that role overload, unfavourable task characteristics, a lack of control and low positive affect predicted exhaustion. Favourable task characteristics, positive affect and low negative affect predicted professional efficacy. Burnout was related to physical and psychological ill-health.

OPSOMMING

Die doelstellings van hierdie studie was om die verwantskap tussen uitbranding, gesondheid, werkskenmerke en affek by onderwysers te bepaal. 'n Eenmalige dwarsnee-opname-ontwerp is gebruik. Gestratifiseerde, ewekansige steekproewe ($N = 266$) is geneem van onderwysers in 'n area van die Noordwes Provinsie. Die Maslach Uitbrandingsvraelys - Algemene Opname, die Gesondheidskaal van die ASSET, die Werkskenmerke vraelys en die Affektometer is afgeneem. Die resultate het aangetoon dat roloerlading, ongunstige taakkenmerke, 'n gebrek aan kontrole en lae positiewe affek tot uitputting aanleiding gee. Gunstige taakkenmerke, positiewe affek en lae negatiewe affek het professionele doeltreffendheid voorspel. Uitbranding was verwant aan fisieke gesondheid en psigologiese welstand.

* This material is based upon work supported by the National Research Foundation under Grant number 2053917.

Education plays an important role in the development of the South African economy. Although South Africa has one of the highest rates of government investment in education in the world (almost 6% of gross domestic product), the quality of public schools seems to be problem (World Economic Forum, 2002). Also, racism, violence and antisocial behaviour, learner boycotts and teacher strikes and a shortage of skilled personnel are evident in some schools. Furthermore, the number of Senior Certificate passes with endorsement for university entrance dropped by 14% between 1995 and 2001 (Department of Education, 2001). Therefore effective, efficient and healthy teachers are required to eradicate these problems.

Many teachers enter the profession with high expectations, a vision for the future, and a mission to educate children. However, various factors seem to contribute to stress, demoralisation and dropout of teachers, including poor student discipline and apathy, lack of professional support, insufficient financial support, pressure from unions, education departments and school governing bodies, lack of community support, poor image of the profession and role ambiguity. This leads to disillusionment and eventually even *burnout* (Mesthrie, 1999).

Teacher stress and burnout has increasingly received recognition as a widespread problem and global concern in recent years (Borg, 1990; Boyle, Borg, Falzon & Baglioni, 1995; Kyriacou, 1987, 2001). While up to a third of the teachers surveyed in various studies have indicated that they regarded teaching as highly stressful (Borg, 1990), they show differences in their reactions to different stressors in the teaching profession (Milstein & Farkas, 1988). Some develop more psychological symptoms than others, varying from mild frustration, anxiety and irritability to emotional exhaustion, as well as more severe psychosomatic and depressive symptoms (Dunham, 1992; Farber, 1984a, 1984b; Kyriacou & Pratt, 1985; Kyriacou & Sutcliffe, 1978; Schonfeld, 1992; Seidman & Zager, 1991).

Research over the past two decades has shown that burnout is not only related to negative outcomes for the individual, including depression, a sense of failure, fatigue and loss of motivation, but also to negative outcomes for the organisation, including absenteeism, turnover rates and lowered productivity (Schaufeli & Enzmann, 1998). These negative outcomes are also evident in the South African education system. Recent newspaper headings have indicated that much needs to be done by the Department of Education to recruit new

teachers and to retain them, e.g. *Most SA teachers ready to quit* (Citizen, 19 April 1999), *Many good teachers have quit in despair because of the OBE system* (Star, 13 August 2001), *Profoundly sad so many teachers are quitting* (Citizen, 25 July 2002) and *Stress takes big toll on teachers* (Pretoria News, 2 Dec. 2002). Therefore, it is necessary to investigate the burnout of teachers in South Africa.

Teacher burnout should be a great concern, as it might impair the quality of teaching and lead to job dissatisfaction, work alienation, physical and emotional ill-health, and teachers leaving the profession. However, while experienced teachers under chronic work stress for some time might be more vulnerable to burnout, novice teachers are not immune to suffering from this condition, as burnout might arise from the great discrepancy between expectations from successful professional performance and an observed dissatisfying reality (Friedman, 2000; Schonfeld, 2001).

In the helping professions, burnout describes the condition of physical and emotional exhaustion, as well as the associated negative attitudes resulting from the intense interaction in working with people (Bakker, Schaufeli, Sixma & Bosveld, 2001; Maslach, 1986). Maslach and Jackson (1986), for example, have conceptualised burnout as encompassing the components of emotional exhaustion, depersonalisation and reduced personal accomplishment. Recently, the concept of burnout has been expanded to include all types of professions and occupational groups. The publication of the Maslach Burnout Inventory – General Survey (MBI-GS) (Schaufeli, Leiter, Maslach & Jackson, 1996) makes it possible to study burnout outside the human services and to make comparisons among different occupational groups. Although the Maslach Burnout Inventory (MBI) (Schaufeli et al., 1996) is undoubtedly the most widely used measure of occupational burnout, its validity for use with South African educators has not yet been firmly established.

Teacher burnout is caused by high levels of prolonged stress related to inordinate time demands, inadequate collegial relationships, large class size, lack of resources, isolation, fear of violence, role ambiguity, limited promotional opportunities, lack of support and involvement in decision-making and student behavioural problems (Brissie, Hoover-Dempsey & Bassler, 1988; Cunningham, 1983; Friedman, 1991, 1995). Kyriacou and Sutcliffe (1978b) found that difficult classes, behavioural problems, shortages of equipment, too much paper work and demands on after-school time are major predictors of teacher

burnout. Furthermore, overall classroom climate was found to be a major variable in teacher burnout (Byrne, 1994). As the climate of the classroom deteriorates, teachers may become exhausted, develop negative attitudes toward their students and their job, and accomplish few educational goals for their students.

Contemporary approaches to understanding stress are based on a transactional perspective. One core element of this model of stress-coping is awareness of the events, issues and objects (including people) that may function as a stressor (source of strain) for individuals. Strain occurs when environmental demands or constraints are perceived by a person to exceed his or her resources or capacities. Research on job-related stressors has built upon this perspective, as well as on Karasek's (1979) job demands-control model. The basic premise of this model is that psychological strain and physical health can be predicted from increased job demands.

There is ample evidence that teachers in the course of their careers experience a great deal of stress that may result in depressed mood, exhaustion, poor performance or attitude and personality changes, which in turn may lead to illness and premature retirement (Byrne, 1999; Guglielmi & Tatrow, 1998; Leithwood, Menzies, Jantzi & Leithwood, 1999). This is attributed to job characteristics (e.g. time pressures, demands, lack of control, student misconduct and lack of support from fellow teachers) and individual factors (e.g. negative affect) (Burke, Greenglass & Schwarzer, 1996; Chaplain, 1995; Hart, 1994; Kinnunen, Parkatti, & Rasku, 1994; Lee, Dedricks & Smith, 1991; Vancouver, Millsap & Peters, 1994; Vecchio, 1993).

Certain variables may moderate the stressor-exhaustion-strain relationship (Guglielmi & Tatrow, 1998). According to Semmer (1996), negative affectivity might increase vulnerability to exhaustion and strain. Research showed that individuals high on negative affectivity are inclined to experience psychological strain and are susceptible to the effects of stress-induced environments (Parkes, 1990; Watson & Clark, 1984).

The objectives of this study were to assess the relationship between burnout, health, job characteristics and affect of teachers in a district of the North West Province in South Africa.

Burnout

According to Schaufeli and Enzmann (1998), burnout can be defined as a persistent, negative, work-related state of mind (or syndrome) developing over time in so-called "normal" individuals, characterised by an array of physical, psychological and attitudinal symptoms, primarily exhaustion, and accompanied by distress, a sense of reduced effectiveness, decreased motivation and the development of dysfunctional personal and societal attitudes and behaviours at work. This psychological condition develops gradually but may remain unnoticed for a long time by the individual involved.

Burnout is a syndrome that consists of three essential dimensions (Schaufeli & Enzmann, 1998). According to Schaufeli et al. (1996), burnout incorporates the following three dimensions:

- Exhaustion, which refers to the depletion or draining of emotional resources and feelings of being overextended.
- Cynicism, which refers to interpersonal dimensions of burnout and results in a negative, callous or excessively detached response to various aspects of the job.
- Professional efficacy, which refers to the self-evaluation dimension of burnout and is a feeling of competence, productivity and achievement at work.

Exhaustion is a necessary but not sufficient criterion for burnout (Maslach, Schaufeli & Leiter, 2001). The notion of exhaustion presupposes a prior state of high arousal or overload rather than one of low arousal or underload, which implies that burnout is not a response to tedious, boring or monotonous work. However, exhaustion fails to capture a critical aspect of the relationship people have with their work. Chronic exhaustion can lead people to distance themselves emotionally and cognitively from their work, so that they are less involved with or responsive to the needs of other people or the demands of the task. According to Maslach et al. (2001), distancing is such an immediate reaction to exhaustion that a strong relationship from exhaustion to depersonalisation or cynicism is consistently found in burnout research. Furthermore, a work situation with chronic, overwhelming demands that contribute to exhaustion or cynicism is likely to erode an individual's sense of accomplishment or effectiveness. Also, it is difficult to gain a sense of accomplishment when feeling exhausted

or when helping people toward whom one is hostile. In some situations the lack of efficacy seems to arise more clearly from a lack of relevant resources, while exhaustion and cynicism appear from the presence of work overload and social conflict (Maslach et al., 2001).

Consistent with the definition of burnout offered by Maslach and Jackson (1981), Supek (1981) has described teachers as prone to "emotional exhaustion, cynicism towards students, negative self-evaluation, and a general inclination to professional minimalism". Friedman (1991) even argued that burnout relates to teachers and teaching more than in any other professional arena.

Three confirmatory factor analysis studies of the MBI also found a three-factor solution to be optimal (Byrne, 1991; Evans & Fischer, 1989). Confirmatory factor analysis showed that the three-factor model was clearly superior to alternative one-factor and two-factor models (Leiter & Schaufeli, 1996; Schutte, Toppinnen, Kalimo & Schaufeli, 2000; Storm & Rothmann, 2003).

Job characteristics are the specific tasks that make up an individual's job and are also referred to as "task content factors" (Cooper, Dewe & O'Driscoll, 2001). According to Maslach et al. (2001), job characteristics can be divided into job demands and lack of resources. The Job Demand-Resources (JD-R) model (Demerouti, Nachreiner, Bakker & Schaufeli, 2001) proposes that burnout follows two processes. In the first process, job demands lead to exhaustion and in the second process a lack of resources leads to withdrawal, and eventually disengagement. Job demands refer to those physical, social or organizational aspects of the job that require sustained physical or mental energy (Demerouti et al., 2001).

Workload is a stressor for many workers. Overload leads to exhaustion, which may cause physical and psychological ill-health. Quantitative workload is the amount of work required and the time frame in which the work must be done, while 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 are to those physical, psychological, social or organisational aspects of the job that may be functional in achieving work goals, reducing job demands, with the associated physiological and psychological costs, and stimulating personal growth and development (Demerouti et al., 2001). According to Maslach (2000), perceived stressors lead to emotional reactions, which in turn lead to ill-health.

Employees' happiness may moderate the effects of job demands and a lack of job resources on burnout and ill health (Cropanzano & Wright, 2001). Moderators are variables that affect the direction and/or strength of the relationship between a predictor and an independent variable (Baron & Kenny, 1986). The presence of positive and negative affect is one way of conceptualising happiness. According to Cropanzano and Wright (2001), negative affect seems to be related to reports of job stress and strain.

Spielberger, Gorsuch and Lushene (1970) suggested that negative affect might operate as a moderator of the stressor-strain linkage. Cropanzano, James and Konovsky (1993) showed that there are two general dimensions of affective responding, namely positive affect and negative affect. These dimensions have traditionally been described as independent of one another rather than as opposite ends of a continuum. That is, it is possible for an individual to be high on both, low on both, or high on one but not the other.

Individuals with high positive affect can be described as confident, exhilarated, exited and enthusiastic; on the other hand persons who rate low on positive affect are characterised as lethargic, listless, and apathetic. These scores reflected on absence of positive feelings, rather than negative emotions. Likewise, those rating high on negative affect are often fearful, anxious and angry; and they tend to be nervous and tense. Individuals who score low on negative affect report feelings of calmness, contentedness and placidity (Cropanzano et al., 1993).

Negative affect is the tendency for an individual to experience negative emotions, such as anxiety or depression, across a wide variety of situations (Spector, 2000). Researchers (Cropanzano et al., 1993; Judge, 1993; Levin & Stokes, 1989; Moyle, 1995) have extended the negative affect idea to the workplace. The idea was that individuals with high negative affect would respond to their jobs negatively and would be likely to develop exhaustion and strain (Levin & Stokes, 1989).

METHOD

Research design

A cross-sectional survey design was used, whereby a sample was drawn from a population at one time. Schaufeli and Enzmann (1998) criticise the use of cross-sectional designs in burnout research, and recommend that experiments and longitudinal studies should be used when possible. However, a cross-sectional design is the most appropriate design for the validation of the MBI and the Affectometer, and for testing a causal model of burnout.

Sample

The sample includes the 266 teachers in the North West Province in South Africa who had completed a questionnaire by the end of May 2003. Most of the participants in this study were teaching in primary schools (63,42%) and secondary schools (29,18%). A total of 51,37% of the sample indicated Afrikaans as home language, while English and Setswana represented 23,14% and 10,98% of the sample respectively. The mean age and experience (in years) of the participants was 41,19 and 8,37 respectively. The mean score for intention to quit was 3,36, while the frequency of thinking about quitting was 3,47. Other characteristics of the sample are given in Table 1.

Table 1

Characteristics of the Sample

Characteristic	Category	%
Gender	Male	27,97
	Female	72,03
Language	Afrikaans	51,37
	English	23,14
	IsiZulu	10,98
	Other	14,51
Qualification	Grade 12 + Education Diploma (M+3)	22,32
	Grade 12 + Higher Diploma + Degree (M+4)	52,68
	Grade 12 + Higher Diploma + Hons. Degree (M+5)	22,32
	Grade 12 + Higher Diploma + Master's Degree (M+6)	2,68
Type of school	Primary	63,42
	Intermediate	3,89
	Combined	3,50
	Secondary	29,18
Job level	Teacher	78,69
	Head of Department	14,75
	Deputy Principal	4,51
	Principal (Headmaster)	2,05
Self-assessment	100% Productive	9,83
	90-99% Productive	20,51
	80-89% Productive	34,62
	70-79% Productive	27,35
	Less than Productive	7,69
Illness –last 6 months	Yes	22,66
	No	77,34

Table 1 shows that 78,69% of the sample are post level 1 teachers, with 14,75% indicating that they are Heads of Departments. Only 25% of the sample possesses a qualification higher than a diploma or degree. Most participants indicated that they were productive.

Measuring battery

The *Maslach Burnout Inventory – General Survey* (MBI-GS) (Schaufeli et al., 1996) was used to measure burnout. The MBI-GS has 16 items, which are divided into three sub-scales: Exhaustion (Ex) (five items; e.g. "I feel used up at the end of the workday"), Cynicism (Cy) (five items; e.g. "I have become less enthusiastic about my work") and Professional Efficacy (PE) (six items; e.g. "In my opinion, I am good at my job"). All items are scored on a seven-point frequency rating scale ranging from 0 (*never*) to 6 (*daily*). The internal consistencies (Cronbach alpha coefficients) reported by Schaufeli et al. (1996) 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) (Schaufeli et al., 1996). Storm and Rothmann (2003) confirmed the three-factor structure of the MBI-GS for police members, but recommended that Item 13 should be dropped from the questionnaire. They also found structural equivalence of the MBI-GS for different race groups in the sample. The following alpha coefficients were obtained for the MBI-GS: Exhaustion: 0,88; Cynicism: 0,79; Professional Efficacy: 0,78.

The *Job Characteristics Inventory* (JCI) was developed by the authors to measure job demands and job resources for teachers. The JCI consists of 48 items. The questions are rated on a four-point scale ranging from 1 (*never*) to 4 (*always*). The dimensions of the JCI 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.

The *Affectometer* (AFM) was used to measure negative and positive affectivity. The AFM is a 40-item self-report scale measuring the balance of positive and negative feelings in recent experience. The scale has separate items for measuring positive and negative affect (PA, NA). The overall level of well-being is conceptualised as the extent to which good feelings predominate over bad feelings, and this is reflected in the balance formula for calculating the total score, namely $PA - NA$. In a sample of 110 random New Zealand adults, the scale gives an alpha of 0,95, which indicates high reliability. The Affectometer 1 shows correlations of 0,74 with the General Well-Being Schedule, - 0,62 with an ad hoc list of somatic complaints,

-0,70 with EPI Neuroticism and 0,74 with 7-Step Happiness, all of which indicate high validity (Kammann & Flett, 1983).

The *Health subscales of ASSET* (which refers to An Organizational Stress Screening Evaluation Tool) were developed by Cartwright and Cooper (2002) to assess the respondents' level of health. The Health subscales consist of 19 items arranged on two subscales: Physical health and Psychological well-being. All 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 well-being subscale are symptoms of stress-induced mental ill health. This subscale gives an insight into physical health, not an in-depth clinical diagnosis. Johnson and Cooper (2003) found that the Psychological well-being subscale has good convergent validity with an existing measure of psychiatric disorders, the General Health Questionnaire (GHQ-12; Goldberg & Williams, 1988).

Statistical analysis

The statistical analysis was carried out with the help of the SAS program (SAS Institute, 2000) and the Amos program (Arbuckle, 1999). Cronbach alpha coefficients and inter-item correlation coefficients were used to assess the internal consistency of the measuring instruments (Clark & Watson, 1995). Exploratory factor analyses were conducted on the JCI and the Affectometer. Firstly, a simple principal components analysis was conducted on the JCI and Affectometer. The eigenvalues and scree plot were studied to determine the number of factors. Secondly, a principal components analysis with a direct oblimin rotation was conducted if factors were related ($r > 0,30$). Thirdly, a principal component analysis with a varimax rotation was used if the obtained factors were not related (Tabachnick & Fidell, 2001). Descriptive statistics (e.g. means, standard deviations, skewness and kurtosis) and inferential statistics were used to analyse the data.

In order to test the factorial validity of the MBI-GS and the Health Subscales of the ASSET, structural equation modelling (SEM) methods were initially used with the maximum likelihood method of the AMOS program (Arbuckle, 1997). In the SEM analysis, the hypothesised structural relationships are empirically tested by means of 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. According to Byrne (2001), χ^2 should not be used as the sole indicator of model fit in the behavioural sciences. Therefore, the following fit indices were used in this study: a) The χ^2 /degrees of freedom ratio (CMIN/DF), which should be lower than 5; b) The Goodness of Fit Index (GFI) and Adjusted Goodness-of-Fit Index (AGFI), which should be higher than 0,90; c) The Normed Fit Index (NFI), which should be higher than 0,90; d) The Comparative Fit Index (CFI), which should be higher than 0,90; e) The Tucker-Lewis Index (TLI), which should be higher than 0,90, and f) The Root Mean Square Error of Approximation (RMSEA), which should be lower than 0,08.

Stepwise multiple regression analysis was used to determine the proportion of the total variance of burnout as explained by task characteristics and affect. Effect sizes for each dimension were estimated using R^2 . The following formula (Steyn, 1999) was used:

$$f^2 = \frac{R^2}{1 - R^2}$$

A cut-off point of $f^2 = 0,35$ (large effect) was set (Steyn, 1999).

RESULTS

The hypothesised three-factor model consisting of all 16 items of the MBI-GS was tested. The results revealed a relatively poor overall fit of the originally hypothesised MBI model. To pinpoint possible areas of misfit, standardised residual values were examined. Standardised residuals are fitted residuals divided by their asymptotically (large sample) standard errors (Jöreskog & Sörbom, 1993). In essence, they represent estimates of the number of standard deviations the observed residuals are from the zero residuals that would exist if model fit were perfect (Byrne, 2001). Values larger than 2,58 are considered to be large (Jöreskog & Sörbom, 1993). Considering the high standardised residuals of Item 13 and 14 as well as low regression weights, it was decided to re-specify the model with these items deleted. The goodness of fit statistics of the model are reported in Table 2.

Table 2

Goodness-of-fit Statistics for the Hypothesised MBI Model

Model	χ^2	χ^2/df	GFI	AGFI	NFI	TLI	CFI	RMSEA
Model 1	123,43	1,69	0,94	0,91	0,90	0,95	0,96	0,05

Table 2 shows that the fit of the adapted model of the MBI-GS was acceptable. Although the χ^2 is statistically significant, the other statistics showed acceptable fit of the model to the data. The χ^2/df ratio is smaller than the cut-off point, while the GFI, AGFI, NFI, TLI and CFI are all higher than 0,90, and the RMSEA lower than 0,08.

Next, the hypothesised model consisting of 13 items of the Health Questionnaire was tested (see Table 3). The hypothesised model consisted of two factors, namely Physical Health and Psychological Health.

Table 3

Goodness-of-fit Statistics for the Hypothesised Health Model

Model	χ^2	χ^2/df	GFI	AGFI	NFI	TLI	CFI	RMSEA
Model 1	95,98	1,55	0,95	0,92	0,93	0,97	0,97	0,05

Table 3 shows that the fit of the hypothesised model of the Health Questionnaire was acceptable. Although the χ^2 was statistically significant, the other statistics showed acceptable fit of the model to the data. The χ^2/df ratio is smaller than 2, while the GFI, AGFI, NFI, TLI and CFI are all higher than 0,90, and the RMSEA lower than 0,08.

A simple principal components analysis was conducted on the JCI. Analysis of the eigenvalues (> 1) and scree plot indicated that seven factor could be extracted. The results of the exploratory factor analysis of the JCI items are shown in Table 4. Loadings of variables on factors, communalities and percent of variance and covariance are shown. Variables are ordered and grouped by size of loading to facilitate interpretation. Zeros represent loadings lower than 0,40. Labels for each factor are suggested in a footnote.

Table 4

Factor Loadings, Communalities (h^2), Percentage Variance and Covariance for Principal Factors Extraction and Varimax Rotation on JCI Items

Item	F ₁	F ₂	F ₃	F ₄	F ₅	F ₆	F ₇	h^2
Do you receive sufficient information on the results of your work?	0,77	0,00	0,00	0,00	0,00	0,00	0,00	0,64
Do you receive sufficient information on the purpose of your work?	0,72	0,00	0,00	0,00	0,00	0,00	0,00	0,60
Does your direct supervisor inform you about how well you are doing?	0,69	0,00	0,00	0,00	0,00	0,00	0,00	0,55
Do you know exactly what your supervisor thinks of your performance?	0,64	0,00	0,00	0,00	0,00	0,00	0,00	0,44
Are you kept adequately up-to-date about issues in the Department?	0,57	0,00	0,00	0,00	0,00	0,00	0,00	0,40
In your work, do you feel appreciated by your supervisor?	0,56	0,00	0,00	0,00	0,00	0,00	0,00	0,48
Do you get on well with your supervisor?	0,48	0,00	0,00	0,00	0,00	0,00	0,00	0,50
Do you know exactly what other people expect of you in your work?	0,45	0,00	0,00	0,00	0,00	0,00	0,00	0,26
Can you discuss work problems with your direct supervisor?	0,44	0,00	0,00	0,00	0,00	0,00	0,00	0,51
Can you count on your supervisor when you come across difficulties?	0,43	0,00	0,00	0,00	0,00	0,00	0,00	0,39
Do you know exactly for what you are responsible and what not?	0,43	0,00	0,00	0,00	0,00	0,00	0,00	0,22
Can you participate in decisions about the nature of your work?	0,42	0,00	0,00	0,00	0,00	0,00	0,00	0,33
Does your job offer you're the possibility of independent thought?	0,00	0,66	0,00	0,00	0,00	0,00	0,00	0,53
Do you have freedom in carrying out your work activities?	0,00	0,60	0,00	0,00	0,00	0,00	0,00	0,52
Does your work give you the feeling that you can achieve something?	0,00	0,60	0,00	0,00	0,00	0,00	0,00	0,51
Do you have influence in the planning of your work activities?	0,00	0,55	0,00	0,00	0,00	0,00	0,00	0,40
Does your work make sufficient demands on all your skills?	0,00	0,45	0,00	0,00	0,00	0,00	0,00	0,28
Does your job offer you opportunities for personal growth?	0,00	0,44	0,00	0,00	0,00	0,00	0,00	0,31
Do you have enough variety in your work?	0,00	0,42	0,00	0,00	0,00	0,00	0,00	0,27
Do you work under time pressure?	0,00	0,00	0,73	0,00	0,00	0,00	0,00	0,57
Do you have to be attentive to many things at the same time?	0,00	0,00	0,60	0,00	0,00	0,00	0,00	0,37
Do you have too much work to do?	0,00	0,00	0,59	0,00	0,00	0,00	0,00	0,45
Do you have to remember many things in your work?	0,00	0,00	0,54	0,00	0,00	0,00	0,00	0,34
Are you confronted in your work with things that affect you personally?	0,00	0,00	0,48	0,00	0,00	0,00	0,00	0,28
Does your work put you in emotionally upsetting situations?	0,00	0,00	0,47	0,00	0,00	0,00	0,00	0,33
Do you have contact with difficult children in your work?	0,00	0,00	0,39	0,00	0,00	0,00	0,00	0,21
Do you need to be more secure that you will keep your job next year?	0,00	0,00	0,00	0,91	0,00	0,00	0,00	0,85
Do you need to be more secure that you will still be working in one year?	0,00	0,00	0,00	0,89	0,00	0,00	0,00	0,74
Do you need to be more secure that next year you will keep your level?	0,00	0,00	0,00	0,81	0,00	0,00	0,00	0,67
If necessary, can you ask your colleagues for help?	0,00	0,00	0,00	0,00	0,68	0,00	0,00	0,58
Can you count on your colleagues when you come across difficulties?	0,00	0,00	0,00	0,00	0,61	0,00	0,00	0,49
Do you get on well with your colleagues?	0,00	0,00	0,00	0,00	0,48	0,00	0,00	0,42
Does your job give you the opportunity to be promoted?	0,00	0,00	0,00	0,00	0,00	0,55	0,00	0,42
Is it clear whom you should address within the Department?	0,00	0,00	0,00	0,00	0,00	0,55	0,00	0,43
Do you have a direct influence on your school's decisions?	0,00	0,00	0,00	0,00	0,00	0,51	0,00	0,40
Is the Department's decision-making process clear to you?	0,00	0,00	0,00	0,00	0,00	0,47	0,00	0,45
Do you have contact with colleagues as part of your work?	0,00	0,00	0,00	0,00	0,00	0,42	0,00	0,40
Can you live comfortably on your pay?	0,00	0,00	0,00	0,00	0,00	0,00	0,78	0,63
Do you think you are paid enough for the work that you do?	0,00	0,00	0,00	0,00	0,00	0,00	0,69	0,53
Does your job offer you the possibility to progress financially?	0,00	0,00	0,00	0,00	0,00	0,00	0,64	0,55
Do you think that the Department pays good salaries?	0,00	0,00	0,00	0,00	0,00	0,00	0,52	0,30
Squared multiple correlation (SMC)	0,85	0,80	0,81	0,91	0,75	0,71	0,79	
Proportion variance	0,12	0,08	0,07	0,06	0,06	0,06	0,06	
Proportion co-variance	0,23	0,16	0,13	0,12	0,11	0,11	0,11	

F₁ Management F₂ Task Characteristics F₃ Role Overload F₄ Job Insecurity F₅ Relationship with Colleagues F₆ Control F₇ Rewards

Inspection of Table 4 shows that 43 of the original 48 items loaded on the seven factors. The factors are defined as follows:

- Management refers to the relationship with the supervisor, ambiguities about work, information, communication, participation and contact possibilities.
- Task characteristics refer to variety in work, opportunities to learn and independence in work.
- Role overload refers to the pace and amount of work, mental load and emotional load.
- Job insecurity refers to uncertainty about the future.
- Relationship with colleagues refers to the availability of colleagues to help, whether they could be counted on and whether the participant gets on well with them.
- Control refers to communication, participation and contact possibilities.
- Rewards refer to whether the participant can live comfortably on his or her pay, whether it is regarded as enough and whether the salary enables employees to progress financially.

Next, a simple principal components factor analysis was conducted on the AFM. Analysis of the eigenvalues (> 1) and scree plot showed two internally consistent factors. Oblique rotation showed inter-factor correlations higher than 0,35 for the two factors. Therefore it was decided to proceed with oblique factor analysis with a promax rotation. The results of the exploratory factor analysis of the AFM items are shown in Table 5. Loadings of variables on factors, communalities and percent of variance and covariance are shown. Variables are ordered and grouped by size of loading to facilitate interpretation. Zeros represent loadings that were under 0,45. Labels for each factor are suggested in a footnote.

Table 5
Factor Loadings, Communalities (h^2), Percentage Variance and Covariance for Oblique Factors Extraction and Promax Rotation on Affectometer Items

Items	F ₁	F ₂	h^2
I think clearly and creatively	0,63	0,00	0,42
My future looks good	0,59	0,00	0,41
I smile and love a lot	0,59	0,00	0,35
I feel close to the people around me	0,59	0,00	0,39
I feel loved and trusted	0,58	0,00	0,44
I feel I can do whatever I want to	0,58	0,00	0,34
I like myself	0,53	0,00	0,29
I have energy to spare	0,49	0,00	0,24
I can handle any problems that come up	0,49	0,00	0,28
My life is on the right track	0,33	0,00	0,19
Nothing seems very much fun anymore	0,00	0,68	0,52
I feel like a failure	0,00	0,66	0,55
I seem to be left alone when I don't want to be	0,00	0,61	0,39
I have lost interest in other people and I don't care about them	0,00	0,57	0,37
I can't be bothered doing anything	0,00	0,54	0,34
I feel there must be something wrong with me	0,00	0,54	0,39
My life feels stuck in a rut	0,00	0,49	0,40
I feel as though the best years of my life are over	0,00	0,47	0,23
My thoughts go around in circles	0,00	0,45	0,22
I wish I could change some parts of my life	0,00	0,33	0,13
Squared multiple correlation (SMC)	0,81	0,81	
Proportion variance	0,18	0,17	
Proportion co-variance	0,52	0,48	

F₁ - Positive affect F₂ - Negative affect

Inspection of Table 5 shows items with the highest loading on the positive affect factor relate to issues such as thought clarity, optimism, cheerfulness, social interest, social support, freedom and self-esteem. Items with the highest loading on the negative affect factor relate to issues such as cheerfulness, self-efficacy, social support and social interest.

Table 6 shows the descriptive statistics, inter-item correlation coefficients and Cronbach alpha coefficients of the MBI-GS, the Health Questionnaire, the JCI and the Affectometer.

Table 6

Descriptive Statistics, Cronbach Alpha Coefficients and Inter-Item Correlation Coefficients of the Measuring Instruments

Test and items	Mean	SD	Skewness	Kurtosis	Mean Inter-item r	α
MBI						
Exhaustion	14,86	7,16	-0,18	-0,70	0,46	0,81
Cynicism	5,74	4,40	0,35	-0,76	0,46	0,71
Professional efficacy	29,07	5,53	-0,93	0,83	0,36	0,76
Health Questionnaire						
Physical (ill) health	15,11	4,21	-0,16	-0,71	0,38	0,78
Psychological (ill) health	16,06	4,86	0,05	-0,47	0,51	0,88
JCI						
Management	36,10	6,80	-0,34	-0,47	0,37	0,88
Job characteristics	20,63	4,15	-0,25	-0,43	0,37	0,80
Role overload	22,58	3,98	-0,11	-0,49	0,27	0,75
Job insecurity	9,00	2,86	-0,62	-0,77	0,74	0,90
Relationship with colleagues	10,15	1,81	-0,82	0,10	0,52	0,76
Control	9,10	2,68	0,51	-0,07	0,38	0,71
Rewards	5,94	2,37	1,66	3,16	0,47	0,78
AFM						
Positive affect (PA)	31,77	5,85	-0,13	-0,11	0,33	0,81
Negative affect (NA)	20,95	6,42	0,48	0,37	0,33	0,82

Inspection of Table 6 shows that acceptable Cronbach alpha coefficients were obtained for most of the scales compared to the guideline of $\alpha > 0,70$ (Nunnally & Bernstein, 1994). Furthermore, the inter-item correlations are considered acceptable compared to the guideline of $0,15 < r < 0,50$ (Clark & Watson, 1995), and thus indicate the internal consistency of all the measuring instruments. Table 6 also indicates that all the scores of the subscales are normally distributed except for Rewards of the JCI.

The product-moment correlation coefficients between the MBI, Strain, JCI and AFM are reported in Table 7. Spearman correlations were used in cases where scores were skewly distributed.

Table 7

Correlation Coefficients between the Measuring Instruments

Items	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Exhaustion	-	-	-	-	-	-	-	-	-	-	-	-	-
2. Cynicism	0,54**	-	-	-	-	-	-	-	-	-	-	-	-
3. Professional efficacy	-0,21	-0,32*	-	-	-	-	-	-	-	-	-	-	-
4. Physical ill-health	0,40*	0,30*	-0,12	-	-	-	-	-	-	-	-	-	-
5. Psychological ill-health	0,56**	0,49*	-0,30*	0,59**	-	-	-	-	-	-	-	-	-
6. Management	-0,19	-0,17	-0,16	-0,23	-0,16	-	-	-	-	-	-	-	-
7. Task characteristics	-0,33*	-0,43*	-0,24	-0,21	-0,28	0,49*	-	-	-	-	-	-	-
8. Overload	0,50**	0,37*	0,31*	0,36*	0,41*	-0,07	-0,10	-	-	-	-	-	-
9. Job insecurity	0,08	0,09	0,08	0,05	0,05	0,07	0,07	0,09	-	-	-	-	-
10. Relationship with colleagues	-0,15	-0,11	-0,17	-0,16	-0,18	0,51**	0,36*	-0,10	0,08	-	-	-	-
11. Control	-0,35*	-0,31*	-0,18	-0,19	-0,28	0,39*	0,40*	-0,24	0,02	0,14	-	-	-
12. Rewards	-0,18	-0,18	0,01	-0,16	-0,09	0,08	0,22	-0,15	0,07	-0,08	0,37*	-	-
13. Positive affect	-0,36*	-0,37*	-0,23	-0,27	-0,39*	0,20	0,35*	-0,21	-0,03	0,16	0,26	0,12	-
14. Negative affect	0,17	0,28	0,26	0,25	0,37*	-0,17	-0,18	0,08	-0,02	-0,22	0,00	0,03	-0,40

* Practically significant correlation (medium effect): $r > 0,30$

** Practically significant correlation (large effect): $r > 0,50$

Table 7 shows practically significant correlation coefficients of large effect between Exhaustion on the one hand and Overload, Cynicism and Psychological ill-health on the other hand (all large effects). Practically significant correlation coefficients of medium effect were also found between Exhaustion on the one hand and Physical ill-health, Task characteristics (inverse), Control (inverse) and Positive affect (inverse) on the other. Practically significant correlations were also found between Cynicism and the following scales: Professional efficacy (medium effect), Physical and Psychological ill-health (medium effect), Task characteristics (inverse, medium effect), Overload (medium effect), Control (inverse, medium effect) and Positive Affect (inverse, medium effect). Professional efficacy was negatively related to Psychological ill-health and Overload.

Next, a stepwise multiple regression analysis was conducted with Exhaustion, Cynicism and Professional Efficacy (as measured by the MBI-GS) as dependent variables and job characteristics (as measured by the JCI), and affect (as measured by the Affectometer) as independent variables. The results are shown in Table 8.

Table 8

Stepwise Multiple Regression Analysis with Exhaustion, Cynicism and Professional Efficacy as Dependent Variables

Item	Parameter	SE	F	p	Partial R ²
DV= Exhaustion $F= 38,97^* R^2= 0,37^{++}$					
Intercept	14,14	3,45	16,75	0,0001	-
Role overload	0,75	0,09	66,17	0,0001	0,2521
Task characteristics	-0,29	0,10	8,85	0,0032	0,0766
Positive affect	-0,22	0,07	10,95	0,0011	0,0305
Control	-0,37	0,15	6,18	0,0135	0,0148
DV= Cynicism $F= 37,06^* R^2= 0,42^{++}$					
Intercept	0,14	2,15	0,00	0,9492	-
Exhaustion	0,21	0,04	35,22	0,0001	0,2933
Task characteristics	-0,33	0,06	33,14	0,0001	0,0714
Negative affect	0,12	0,03	12,53	0,0005	0,0238
Role overload	0,18	0,06	8,78	0,0033	0,0181
Relationship with colleagues	0,26	0,13	4,25	0,0401	0,0096
DV= Professional efficacy $F= 25,15^* R^2= 0,22^{++}$					
Intercept	17,35	2,67	42,36	0,0001	-
Task characteristics	0,48	0,08	38,21	0,0001	0,1830
Positive affect	0,13	0,06	4,50	0,0349	0,0284
Negative affect	-0,10	0,05	4,11	0,0438	0,0122

* Statistically significant – $p < 0,0001$

++ Practically significant – $f^2 > 0,35$

The results in Table 8 shows that exhaustion (as measured by the MBI-GS) is best predicted by role overload, unfavourable task characteristics and lack of control (as measured by the JCI) and low positive affect (as measured by the Affectometer). The R^2 indicates that 37% of the variance in exhaustion is predicted by these variables. Cynicism (as measured by the MBI-GS) is best predicted by exhaustion (as measured by the MBI-GS), unfavourable task characteristics, role overload and a poor relationship with colleagues (as measured by the JCI) and negative affect (as measured by the Affectometer). The R^2 indicates that 42% of the variance in cynicism is predicted by these variables. Professional efficacy is best predicted by task characteristics (as measured by the JCI), as well as positive affect and low negative

affect (as measured by the Affectometer). The R^2 indicates that 22% of the variance in Professional efficacy is predicted by these variables.

A stepwise multiple regression analysis was conducted with Physical and Psychological (Ill) Health (as measured by the Health Questionnaire) as dependent variables and Exhaustion, Cynicism and Professional Efficacy (as measured by the MBI-GS) as independent variables. The results are shown in Table 9.

Table 9

Stepwise Multiple Regression Analysis with Physical and Psychological Ill-health as Dependent Variables

Item	Parameter	SE	F	p	Partial R^2
DV= Physical (ill) health $F= 48,87^* R^2= 0,16^+$					
Intercept	11,66	0,55	451,79	0,0001	-
Exhaustion	0,23	0,03	48,87	0,0001	0,1562
DV= Psychological (ill) health $F= 37,06^* R^2= 0,42^{++}$					
Intercept	14,22	1,53	86,25	0,0001	-
Exhaustion	0,28	0,07	12,71	0,0001	0,3178
Cynicism	0,23	0,07	12,71	0,0004	0,0562
Professional efficacy	-0,13	0,05	8,06	0,0049	0,0190

* Statistically significant – $p < 0,0001$

++ Practically significant – $f^2 > 0,35$

Table 9 shows that physical (ill) health (as measured by the Health Questionnaire) is best predicted by exhaustion (as measured by the MBI-GS). The R^2 indicates that 16% of the variance in physical ill health is predicted by exhaustion. Psychological (ill) health (as measured by the Health Questionnaire) is best predicted by exhaustion, cynicism and a lack of professional efficacy. The R^2 indicates that 38% of the variance in psychological ill health is predicted by exhaustion, cynicism and a lack of professional efficacy.

DISCUSSION

The objective of this study was to determine the relationship between burnout, job characteristics, affect and health. The results confirmed the internal consistency and construct validity of the measuring instruments.

A validation study of the MBI-GS was conducted in order to provide a reliable and valid diagnostic instrument for burnout. Results showed that the originally hypothesised three-factor model consisting of all 16 items of the MBI-GS showed a poor overall fit. Because of the high standardised residuals of item 13 and 14 as well as their low regression weights, it was decided to re-specify the model with these items deleted. After these items had been removed, the model fit was acceptable. Based on both conceptual and empirical grounds, item 13 ("I just want to do my job and not be bothered") was eliminated from the original MBI-GS, resulting in a 15-item scale. Schutte et al. (2000) as well as Storm and Rothmann (2003) also found this item to be problematic. Problems might be caused by the ambivalent nature of this item. On the one hand, a high score may indicate disengagement and social isolation by closing oneself off from contacts with others at work. On the other hand, a higher score may indicate strong motivation and engagement: one concentrates on the task and does not want to be interrupted. Regarding item 14, a lack of understanding of the word "cynical" might have caused problems. While two items of Cynicism was removed, the internal consistency of the scale was still acceptable.

Exploratory factor analysis resulted in two-factor structures for both the Health Questionnaire and the Affectometer. The factors of the Health Questionnaire were labelled Physical Health and Psychological Health. The factors of the Affectometer were labelled Positive Affect and Negative Affect. Seven factors were extracted on the JCI, namely Management, Task Characteristics, Role Overload, Job Insecurity, Relationships with Colleagues, Control and Rewards. The internal consistencies of these scales were acceptable.

Multiple regression analyses showed that exhaustion of teachers is best predicted by role overload, poor task characteristics, a lack of control and low positive affect. Role overload (which is regarded as a job demand) include working under time pressure, attending to many things at a time, having too much work to do and being confronted by emotionally upsetting situations in schools. The finding that role overload predicted almost 25% of the variance in

exhaustion, confirms previous findings (e.g. Schaufeli & Enzmann, 1998). In addition, unfavourable task characteristics (which refer to possibilities for independent thought, freedom in carrying out work activities, influence in planning of work activities, personal growth and variety at work) contributed to exhaustion. Furthermore, a lack of control, such as few opportunities to be promoted, ambiguity and a lack of possibilities to influence the decisions within schools, predicted exhaustion.

Low positive affect probably contributes to exhaustion. Positive affect is part of the approach-oriented behavioural facilitation system, which direct individuals toward situations and experiences that potentially may yield pleasure and reward and ensures the procuring of resources that are essential to the survival of the individual (Watson, 2002). The results showed that positive affect is inversely related to exhaustion. Therefore, teachers with low positive affect might experience more exhaustion because they lack the approach behaviour which is needed to manage situational factors which contribute to exhaustion.

Multiple regression analysis showed that cynicism might result from task characteristics, role overload and negative affect, even after controlling including exhaustion as a predictor of cynicism. It is possible that exhaustion contributes to teachers distancing themselves from their work (cynicism). Not experiencing possibilities of independent thought, freedom in carrying out work activities, influence in planning of work activities, personal growth and variety at work further contribute to developing a mental distance from work. Negative affect represents the extent to which an individual experiences negative emotional states such as fear, anger, sadness, guilt, contempt and disgust (Watson, 2000). Individuals who exhibit negative affect are more likely to react adversely to perceived stressors than individuals with low negative affect perceiving the same stressor (Bolger & Zuckerman, 1995). Furthermore, because negative affect is part of the avoidance-oriented behavioural system it might contribute to mental distance. Previous studies (e.g. Wiese, Rothmann & Storm, 2003) confirmed that cynicism is related to avoidance behaviour.

Task characteristics, positive affect and low negative affect contributed to professional efficacy in this study. These constructs explained 22% of the variance in professional efficacy. However, it seems that task characteristics (i.e. experiencing possibilities of independent thought, freedom in carrying out work activities, influence in planning of work

activities, personal growth and variety at work) explained the largest proportion of the variance.

The results confirmed that exhaustion predicts physical ill health, and exhaustion, cynicism and lack of professional efficacy predict psychological ill-health. Therefore, it seems that exhaustion, cynicism and a lack of professional efficacy do contribute to symptoms of physical and psychological ill health.

RECOMMENDATIONS

Primary and secondary education institutions should attend to the stressors of their support staff. At the workplace level the results suggest key areas for intervention. Firstly, the results suggest that interventions aimed at decreasing the workload of teachers should cause a decrease in experienced exhaustion and cynicism. Secondly, interventions aimed at job resources could contribute to lower exhaustion and cynicism and higher professional efficacy. Specific areas of intervention include management, employee relations, rewards and job design. Thirdly, interventions directed at increasing positive affect should be implemented and/or maintained. Specific interventions include cognitive-behavioural therapy and personal efficacy training.

Longitudinal research regarding causal relationships between burnout, health, job characteristics and affect at educational institutions in South Africa should be undertaken. Research should also be undertaken regarding causes of work engagement of teachers in South Africa, because it cannot be assumed that burnout is the opposite of work engagement.

REFERENCES

- Anonymous. (1999). *Most SA teachers ready to quit*. Pretoria: Citizen, 19 Apr.
- Arbuckle, J.L. (1999). *Amos 4.0*. Chicago, IL: Smallwaters.
- Bakker, A.B., Schaufeli, W.B., Sixma, H.J. & Bosveld, W. (2001). Burnout contagion among general practitioners. *Journal of Social and Clinical Psychology*, 20, 82-98
- Baron, R. & Kenny, D. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology*, 51, 1173-1182.
- Bolger, N. & Zuckerman, A. (1995). A framework for studying personality in the stress process. *Journal of Personality and Social Psychology*, 69, 890-902.
- Borg, M.G. (1990). Occupational stress in British educational settings: A review. *Educational Psychology*, 10, 103-126.
- Boyle, G.J., Borg, M.G., Falzon, J.M. & Baglioni, A.J. (1995). A structural model of the dimensions of teacher stress. *British Journal of Educational Psychology*, 65, 49-67.
- Brissie, J.S., Hoover-Dempsey, K.V. & Bassler, O.C. (1988). Individual, situational contributors to teacher burnout. *The Journal of Educational Research*, 82, 106-112.
- Burke, R.J., Greenglass, E.R. & Schwarzer, R. (1996). Predicting teacher burnout over time: effect of work stress, social support, and self-doubts on burnout and its consequences. *Anxiety Stress and Coping*, 9, 261-275.
- Byrne, B.M. (1994). Burnout: Testing for the validity, replication, and invariance of causal structure across elementary, intermediate, and secondary teachers. *American Educational Research Journal*, 31, 645-673.
- Byrne, B.M. (1991). The Maslach Burnout Inventory: Validating factorial structure and invariance across intermediate, secondary, and university educators. *Multivariate Behavioral Research*, 26, 477-499.
- Byrne, B.M. (1999). The nomological network of teacher burnout: A literature review and empirically validated model. In R. Vandenberghe and A.M. Huberman (Eds.), *Understanding and preventing teacher burnout* (pp. 15-37). Cambridge, UK: Cambridge University Press.
- Byrne, B.M. (2001). *Structural equation modeling with AMOS: Basic concepts, applications and programming*. Mahwah, NJ: Erlbaum.
- Cartwright, S. & Cooper, C. (1997). *Managing workplace stress*. Thousand Oaks, CA: Sage.

- Chaplain, R.P. (1995). Stress and job satisfaction: A study of English primary school teachers. *Educational Psychology, 15*, 473-489.
- Clark, L.A. & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological Assessment, 7*, 309-319.
- Cooper, C.L., Dewe, P.J. & O'Driscoll, M.P. (2001). *Organizational stress: A review of critique of theory, research, and applications*. Thousand Oaks, CA: Sage.
- Cropanzano, R., James, K. & Konovsky, M.A. (1993). Dispositional affectivity as a predictor of work attitudes and job performance, *Journal of Organizational Behavior, 14*, 595-606.
- Cropanzano, R. & Wright, T.A. (2001). When a "happy" worker is really a "productive" worker: A review and further refinement of the happy-productive worker thesis. *Consulting Psychology Journal: Practice and Research, 53*, 182-199.
- Cunningham, W.G. (1983). Teacher burnout - solutions for the 1980s: A review of the literature. *The Urban Review, 15*, 37-51.
- Demerouti, E., Nachreiner, F., Bakker, A.B., & Schaufeli, W.B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology, 56*, 499-512.
- Department of Education. (2001). *Education in South Africa: Achievements since 1994*. Pretoria: Department of Education. (Retrieved from web site: www.education.pwv.gov.za)
- Dunham, J. (1992). *Stress in teaching* (2nd ed.). London: Routledge.
- Dwyer, J.A. & Ganster, D.C. (1991). The effect of job demands and control on employee attendance and satisfaction. *Journal of Organizational Behavior, 12*, 595-608.
- Evans, B.K. & Fischer, D. (1989, August). *The dimensionality and discriminant validity of the Maslach Burnout Inventory*. Paper presented at the Canadian Psychological Association Annual Meeting, Halifax, August.
- Farber, B.A. (1984). Stress and burnout in suburban teachers. *Journal of Educational Research, 77*, 325-337.
- Farber, B.A. (1984). Teacher burnout: Assumptions, myths, and issues. *Teachers College Record, 86*, 321-338.
- Friedman, I. (1991). High- and low-burnout schools: School culture aspects of teacher burnout. *The Journal of Educational Research, 84*, 325-333.
- Friedman, I. (1995). Student behavior patterns contributing to teacher burnout. *The Journal of Educational Research, 88*, 281-289.
- Friedman, I.A. (1991). High- and low-burn-out schools: school culture aspects of teacher burn-out. *Journal of Educational Research, 84*, 325-333.

- Friedman, I.A. (2000). Burnout in teachers: Shattered dreams of impeccable professional performance. *Journal of Clinical Psychology*, 56, 595-606.
- Goldberg, D.P. & Williams, P. (1988). A user's guide to the GHQ. London: NFER, Nelson.
- Guglielmi, R.S. & Tatrow, K. (1998). Occupational Stress, burnout and health in teachers. A methodological and theoretical analysis. *Review of Education Research*, 68, 61-99.
- Hart, P.M. (1994). Teacher quality of work life: integrating work experience, psychological distress and morale. *Journal of Organizational Psychology*, 67, 109-132.
- Hoyle, R.H. (1995). The Structural Equation Modeling approach: Basic concepts and fundamental issues. In R.H. Hoyle (Ed.), *Structural equation modeling: Concepts, issues, and applications* (pp. 1-15). Thousand Oaks, CA: Sage.
- Johnson, S. & Cooper, C. (2003). *The construct validity of the ASSET stress measure*. Manuscript made available by authors.
- Jöreskog, K.G. & Sörbom, D. (1993). *LISREL 8: Structural equation modeling with the SIMPLIS command language*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Judge, T.A. (1993). Does affective disposition moderate the relationship between job satisfaction and voluntary turnover? *Journal of Applied Psychology*, 78, 395-401.
- Kammann, R. & Flett, R. (1983). Affectometer 2: A scale to measure current level of general happiness. *Australian Journal of Psychology*, 35, 259-265.
- Karasek, R.A. (1979). Job demands, job decision latitude, and mental strain: Implications for job redesign. *Administrative Science Quarterly*, 24, 285-308.
- Kinnunen, U., Parkatti, T. & Rasku, A. (1994). Occupational well-being among aging teachers in Finland. *Scandinavian Journal of Educational Research*, 38, 315-332.
- Kyriacou, C. (1987). Teacher stress and burnout: An international review. *Educational Research*, 29, 146-152.
- Kyriacou, C. (2001). Teacher stress: Directions for future research. *Educational Review*, 53, 27-35.
- Kyriacou, C. & Pratt, J. (1985). Teacher stress and psychosomatic symptoms. *British Journal of Educational Psychology*, 55, 61-64.
- Kyriacou, C. & Sutcliffe, J. (1978). Teacher stress: Prevalence, sources, and symptoms. *British Journal of Educational Psychology*, 48, 159-167.
- Kyriacou, C. & Sutcliffe, J. (1978b). Teacher stress: Prevalence, sources, and symptoms. *British Journal of Educational Psychology*, 48, 159-167.
- Lee, V.E., Dedrick, R.F. & Smith, J. (1991). The effect of social organization of schools on teachers efficacy and satisfaction. *Sociology of Education*, 64, 190-208.

- Leiter, M.P. & Schaufeli, W.B. (1996). Consistency of the burnout construct across occupations. *Anxiety, Stress, and Coping*, 9, 229-243.
- Leithwood, K.A., Menzies, T., Jantzi, D. & Leithwood, J. (1999). Teachers' burnout: A critical challenge for leaders restructuring schools. In R. Vandenberghe & A.M. Huberman (Eds.), *Understanding and preventing teacher burnout* (pp. 85-114). Cambridge, UK: Cambridge University Press.
- Levin, I. & Stokes, J.P. (1989). Dispositional approach to job satisfaction: Role of negative affectivity. *Journal of Applied Psychology*, 74, 752-758.
- Maslach, C. & Jackson, S.E. (1981). The measurement of experienced burnout. *Journal of Occupational Behavior*, 2, 99-113.
- Maslach, C. (1986). Stress, burnout, and workaholism. In: R.R. Kilburg, P.E. Nathan & R.W. Thoreson (Eds.), *Professionals in distress: Issues, syndromes, and solutions in psychology*, (pp. 53-75). Washington: American Psychological Association.
- Maslach, C. & Jackson, S.E. (1986). *The Maslach Burnout Inventory* (2nd ed.). Palo Alto, CA: Consulting Psychologists Press.
- Maslach, C. & Leiter, M.P. (1997). *The truth about burnout*. San Francisco: Jossey-Bass.
- Maslach, C., Jackson, S.E. & Leiter, M. (1996). *Maslach Burnout Inventory: Manual* (3rd ed.). Palo Alto, CA: Consulting Psychologists Press.
- Maslach, C., Schaufeli, W.B. & Leiter, M.P. (2001). Job burnout. *Annual Review of Psychology*, 52, 397-422.
- Mesthrie, R. (1999). The role of principals in the management of stress and burnout. *Education Practice*, 3, 19-23.
- Milstein, M.M. & Farkas, J. (1988). The overstated case of educator stress. *Journal of Educational Administration*, 26, 232-249.
- Moyle, P. (1995). The role of negative affectivity in the stress process: tests of alternative models. *Journal of Organizational Behavior*, 16, 647-668.
- Nunnally, J.C. & Bernstein, I.H. (1994). *Psychometric theory* (3rd ed.). New York: McGraw-Hill.
- Parkes, K. (1990). Coping, negative affectivity, and the work environment: Addictive and interactive predictors of mental health. *Journal of Applied Psychology*, 75, 399-409.
- Rothmann, S. & Malan, H. (2003). Koherensiesin, selfdoeltreffendheid, lokus van beheer en uitbranding by maatskaplike werkers. *South African Journal of Industrial Psychology*, 29(4), 43-51.

- 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.
- Schonfeld, I.S. (1992). Assessing stress in teachers: Depressive symptoms scales and neutral self-reports of the work environment. In J.C. Quick, L.R. Murphy & J.J. Hurrell (Eds.), *Stress and well-being at work: Assessment and interventions for occupational mental health*. Washington: American Psychological Association.
- Schonfeld, I.S. (2001). Stress in 1st-year women teachers: The context of social support and coping. *Genetic Social and General Psychology Monographs*, 127, 133-168
- Schutte, N., Toppinnen, S., Kalimo, R. & Schaufeli, W.B. (2002). The factorial validity of the Maslach Inventory-General Survey across occupational groups and nations. *Journal of Occupational and Organizational Psychology*, 73, 53-66.
- Seidman, S.A. & Zager, J. (1991). A study of coping behaviors and teacher burnout. *Work and Stress*, 5, 205–216.
- Semmer, N. (1996). Individual differences, work stress and health. In M.J. Schabracq, J.A.M. Winnubst & C.L. Cooper (Eds.), *Handbook of work and health psychology*. New York: Wiley.
- Spector, P.E. (2000). *Industrial and organizational psychology: Research and practice* (2nd ed.). New York: John Wiley.
- Spielberger, C., Gorsuch, R. & Lushene, R. (1970). *State-Trait Anxiety Inventory test manual for Form X*. Palo Alto, CA: Consulting Psychologists Press.
- Steyn, H.S. (1999). *Praktiese betekenisvolheid: Die gebruik van effekgroottes*. Wetenskaplike bydraes, Reeks B: Natuurwetenskappe Nr. 117. [Practical significance: Use of effect sizes. Scientific contributions, Series B, Natural Sciences, No. 117.] Potchefstroom, South Africa: Potchefstroom University for Christian Higher Education, Statistical Consultation Services.
- Storm, K. & Rothmann, S. (2003). A psychometric analysis of the Maslach Burnout Inventory – General Survey in the South African Police Service. *South African Journal of Psychology*, 33, 219-226.

- Supek, R. (1981). How to get rid of professional minimalism. *Issues in Education, 1*, 133–153.
- Vancouver, J.B., Millsap, R.E. & Peters, P.A. (1994). Multilevel analysis of organizational goal congruence. *Journal of Applied Psychology, 79*, 666–679.
- Vecchio, R.P. (1993). Self- and supervisor ratings: A dyadic approach. *International Journal of Organizational Analysis, 1*, 73–83.
- Watson, D. (2000). *Mood and temperament*. New York: Guilford.
- Watson, D. (2002). Positive affectivity: The disposition to experience pleasurable emotional states. In C.R. Snyder & S.J. Lopez (Eds.). *Handbook of positive psychology*. (pp. 106–119). Oxford: Oxford University Press.
- Watson, D. & Clark, L. (1984). Negative affectivity: The disposition to experience negative aversive emotional states. *Psychological Bulletin, 96*, 465–498.
- Wiese, L., Rothmann, S. & Storm, K. (2003). Coping, stress and burnout in the South African Police Service in Kwazulu-Natal. *South African Journal of Industrial Psychology, 29*(3), 71–80.
- World Economic Forum. (2002). *The global competitive report 2001–2002*. New York: Oxford University Press. (Retrieved from web site: www.weforum.org)

CHAPTER 6

ARTICLE 5

A MODEL OF WORK-RELATED WELL-BEING FOR TEACHERS IN THE NORTH WEST PROVINCE*

L.T.B. JACKSON

S. ROTHMANN

*WorkWell: Research Unit for People, Policy and Performance, Potchefstroom Campus,
North-West University*

ABSTRACT

The aims of this study were to assess the validity and internal consistency of the constructs in the measurement model of work-related well-being and to test a causal model thereof for teachers. Stratified random samples ($N = 1177$) were taken of teachers in the North-West Province. The Maslach Burnout Inventory – General Survey, Utrecht Work Engagement Scale, Job Characteristics Inventory, Affectometer, and the Health and Organisational Commitment sub-scales of the ASSET were administered. The results showed that job demands, a lack of job resources and low positive affect contributed to burnout. Burnout mediated the relationship between job demands and ill-health, while positive affect moderated the relationship between burnout and ill-health. Job resources predicted work engagement. Work engagement mediated the relationship between job resources and organisational commitment.

OPSOMMING

Die oogmerke van hierdie studie was om die geldigheid en interne konsekwentheid van 'n metingsmodel van werksverwante welstand te bepaal en om 'n oorsaaklike model daarvan by onderwysers te toets. Gestratifiseerde ewekansige steekproewe ($N = 1177$) is van onderwysers in die Noordwes Provinsie geneem. Die Maslach Uitbrandingskaal – Algemene Opname, Utrecht Werksbegeesteringskaal, Werkskarakteristieke-vraelys, Affektometer en die Gesondheid en Organisasieverbondenheid Subskale van die ASSET is afgeneem. Die resultate het aangetoon dat werkseise, 'n gebrek aan werks hulpsbronne en lae positiewe affek tot psigiese uitbranding bydra. Psigiese uitbranding het die verwantskap tussen werkseise en swak gesondheid gemedieer. Werks hulpsbronne het werksbegeestering voorspel. Werksbegeestering het die verwantskap tussen werks hulpsbronne en organisasieverbondenheid gemedieer.

* This material is based upon work supported by the National Research Foundation under Grant number 2053917.

Education plays an important role in the development of the South African economy. The World Competitive Report ranks South Africa poorly regarding human resource management and development (Pons & Daele, 2002). Although South Africa has one of the highest rates of government investment in education in the world (almost 6% of gross domestic product), the quality of public schools seems to be a problem (World Economic Forum, 2002). Also, racism, violence and antisocial behaviour, learner boycotts and teacher strikes and shortage of skilled personnel are evident in some schools. Furthermore, the number of Senior Certificate passes with endorsement for university entrance dropped by 14% between 1995 and 2001 (Department of Education, 2001). Therefore, effective, efficient and healthy teachers are essential in order to eradicate these problems.

Teacher stress and burnout have increasingly received recognition as a widespread problem and global concern in recent years (Borg, 1990; Boyle, Borg, Falzon & Baglioni, 1995; Kyriacou, 2001). A third of the teachers surveyed in various studies have indicated that they regarded teaching as highly stressful (Borg, 1990). Burnout and eventual ill-health result from high levels of stress due to overload, inordinate time demands, inadequate collegial relationships, large class sizes, lack of resources, isolation, fear of violence, role ambiguity, limited promotional opportunities, lack of support, little involvement in decision making, learner behavioural problems, insufficient financial support, pressure from unions, education departments and school governing bodies, lack of community support, poor image of the profession and role ambiguity (Brissie, Hoover-Dempsey & Bassler, 1988; Byrne, 1999; Friedman, 1995). Strain (ill-health) occurs when environmental demands or constraints are perceived by a person to exceed his or her resources or capacities. Therefore, the conclusion that working as a teacher may result in illness seems to be legitimate.

However, in contrast with the above-mentioned findings, and from a "positive psychology" paradigm (Seligman & Csikszentmihalyi, 2000) it is possible that work, and more specifically goal-directed, structured activity, could translate directly into well-being (Kelloway & Barling, 1991). In contrast to the pathological interest in "what can go wrong", this paradigm requires attempts to discover "what can go right" (Strümpfer, 2002), which implies a radically different set of assumptions and attributions about health and potential. According to Schaufeli and Bakker (2001), research on burnout showed that some individuals, regardless of high job demands and long working hours, were not burned out. Instead, it seemed that

they found pleasure in working hard and dealing with job demands. From a positive psychology perspective, such individuals could be described as engaged in their work.

Rothmann (2003) recommended that burnout and work engagement (being aspects of work-related well-being) be integrated into one model. Situational causes (e.g. job demands and job resources) and individual causes of well-being, as well as outcomes of well-being (e.g. ill-health and organisational commitment) could then be included in this model.

Work-related well-being

Burnout and work engagement. According to Schaufeli and Enzmann (1998), burnout can be defined as a persistent, negative, work-related state of mind (or syndrome) developing over time in so-called "normal" individuals, characterised by an array of physical, psychological and attitudinal symptoms, primarily exhaustion, and accompanied by distress, a sense of reduced effectiveness, decreased motivation and the development of dysfunctional personal and societal attitudes and behaviours at work. This psychological condition develops gradually but may remain unnoticed for a long time by the individual involved.

Burnout is a syndrome that consists of three essential dimensions (Schaufeli & Enzmann, 1998), namely exhaustion, mental distance (cynicism and/or depersonalisation) and professional efficacy. Exhaustion refers to the depletion or draining of emotional resources and feelings of being overextended. Mental distance (cynicism and/or depersonalisation) refers to negative, callous or excessively detached responses to the job or to recipients. Professional efficacy refers to the self-evaluation dimension of burnout and is a feeling of competence, productivity and achievement at work.

In the helping professions, burnout describes the condition of physical and emotional exhaustion, as well as the associated negative attitudes resulting from the intense interaction in working with people (Bakker, Schaufeli, Sixma & Bosveld, 2001). Maslach and Jackson (1986) have conceptualised burnout as encompassing the components of emotional exhaustion, depersonalisation, and reduced personal accomplishment. Recently, the concept of burnout has been expanded towards all types of professions and occupational groups. The publication of the Maslach Burnout Inventory – General Survey (MBI-GS) (Schaufeli, Leiter, Maslach & Jackson, 1996) makes it possible to study burnout outside the human services and

to make comparisons among different occupational groups. Jackson and Rothmann (in press) have confirmed a three-factor model of burnout for teachers consisting of exhaustion, mental distance (cynicism and depersonalisation) and professional efficacy.

From a theoretical point of view one could argue that exhaustion and mental distancing (cynicism or depersonalisation) constitute the two key aspects of burnout (Schaufeli, 2003). Exhaustion refers to the fact that the employee is *incapable* of performing because all energy has been drained, whereas mental distancing indicates that the employee is no longer *willing* to perform because of an increased intolerance of any effort. Mental distancing – or psychological withdrawal from the task – can be seen as an adaptive mechanism to cope with excessive job demands and resulting feelings of exhaustion (Maslach, Schaufeli & Leiter, 2001). However, when this coping strategy becomes a habitual pattern – as in cynicism or depersonalisation – it becomes dysfunctional because it disrupts adequate task performance. In its turn, job demands and exhaustion are further increased so that the vicious circle is closed.

Essentially, incapacity and unwillingness to perform are considered as both sides of the same coin (Schaufeli, 2003). Indeed, some empirical findings point to the central role of exhaustion and mental distancing as opposed to the third component, lack of professional efficacy. First, relatively low correlations of professional efficacy are observed with exhaustion and cynicism, whereas these two burnout dimensions are correlated relatively strongly (Lee & Ashforth, 1996). In a similar vein, both "core of burnout" factors sometimes collapse into one factor (Green, Walkey & Taylor, 1991). Second, it seems that cynicism develops in response to exhaustion, whereas professional efficacy seems to develop independently and in parallel (Leiter, 1993). Third, professional efficacy is the weakest burnout dimension in terms of significant relationships with other variables (Lee & Ashforth, 1996). Moreover, several researchers have argued that professional efficacy reflects a personality characteristic rather than a genuine burnout-component (Shirom, 1989; Cordes & Dougherty, 1993).

Recently, it has been proposed to study the "opposite" of burnout in order to cover the entire continuum of work-related experiences, ranging from negative (burnout) to positive (job engagement) (see Maslach et al., 2001). The positive antipode of burnout is characterised by vigour (high energy) and dedication (strong identification). In addition, a third element is distinguished – absorption – which most likely plays a less central role in the engagement

concept. The first psychometric results with a measure that assesses these three characteristics of engagement – the Utrecht Work Engagement Scale – are encouraging (Schaufeli, Martínez, Marques-Pinto, Salanova & Bakker, 2002; Schaufeli, Salanova, González-Romá & Bakker, 2002). Hence, instead of exclusively focusing on negative work-related experiences, future research should also include positive work experiences in order to arrive at a more balanced picture of employee (un)well-being.

Regarding the measurement of engagement, Schaufeli et al. (2002) disagree with Maslach and Leiter (1997), who stated that engagement is adequately measured by the opposite profile of MBI scores. Schaufeli et al. (2002) argue that, by using the MBI for measuring work engagement, it is impossible to study its relationship with burnout empirically since both concepts are considered to be opposite poles on a continuum that is covered by one single instrument (the MBI). Although they agree that work engagement is the positive antithesis of burnout, they acknowledge that the measurement and the structures of both concepts differ.

Exhaustion (low energy) and mental distancing (poor identification) are the hallmarks of burnout that are assessed by the MBI. Vigour (high energy) and dedication (strong identification) as measured by the UWES seem to be opposites of exhaustion and mental distancing (as measured by the MBI). Therefore, no information exists regarding the possible combination of exhaustion-vigour on the one hand and mental distance-dedication on the other hand in one taxonomy of wellness. For instance, it is possible that a person high on exhaustion and mental distance is burned out, while a person high on vigour and dedication is engaged. However, an individual could also measure low on exhaustion, but high on mental distance, or high on exhaustion and low on mental distance, which may have implications for their behaviour at work.

Organisational causes of well-being Organisational approaches to work wellness are usually descriptive in nature. That is, instead of explaining work wellness they describe what types of organisational variables are related to wellness (Schaufeli, 2003). Such heuristic models have received some empirical support (e.g., Golembiewski et al., 1996). An exception has to be made for the recently developed Job Demand-Resources (JD-R) model that assumes that two underlying psychological processes play a role in burnout (as one aspect of wellness at work): an effort-driven process in which excessive job demands lead to exhaustion and a motivation-

driven process in which lacking resources lead to disengagement (Demerouti, Bakker, Nachreiner & Schaufeli, 2001b).

Schaufeli and Bakker (2004) extended the JD-R model by including engagement and by adding indicators for health impairment and organisational withdrawal in the Comprehensive Burnout and Engagement (COBE) Model. The COBE-model assumes two psychological processes, namely an energetic and a motivational process. The energetic process links job demands with health problems via burnout. The motivational process links job resources via work engagement with organisational outcomes. Job resources may play either an intrinsic motivational role (by fostering the employee's growth, learning and development), or they may play an extrinsic motivational role (by being instrumental in achieving work goals). Schaufeli and Bakker (2004) confirmed the model in an empirical study in the Netherlands. Job demands were associated with exhaustion, whereas job resources were associated with work engagement. Burnout was related to health problems as well as to turnover intentions, and mediated the relationship between job demands and health problems, while work engagement mediated the relationship between job resources and turnover intentions.

Workload is a stressor for many teachers. Overload leads to exhaustion, which may cause physical and psychological ill-health. Quantitative workload is the amount of work required and the time frame in which the work must be done, while qualitative workload refers to the sources of psychological strain and is associated with workers' affective reactions to their jobs (Cooper, Dewe & O'Driscoll, 2001). Job resources are those physical, psychological, social or organisational aspects of the job that may be functional in achieving work goals, reducing job demands, with the associated physiological and psychological costs, and stimulating personal growth and development (Demerouti et al., 2001).

Positive affect. Positive affect, which is one aspect of employees' happiness, may moderate the effects of demands and resources on burnout and ill-health (Cropanzano & Wright, 2001). Positive affect, which can be assessed as a short-term state or a long-term trait (Watson, 2002) is part of the approach-oriented behavioural facilitation system. This system directs organisms toward situations and experiences that potentially may yield pleasure and reward and ensures the procuring of resources that are essential to the survival of the individual. Individuals with high positive affect can be described as confident, exhilarated, excited and enthusiastic. They feel good about themselves and their world and therefore report greater

satisfaction with aspects of their lives. On the other hand, individuals low on positive affectivity are characterised as lethargic, listless and apathetic. These scores reflect an absence of positive feelings rather than negative feelings (Cropanzano, James & Konovsky, 1993).

Based on a review of research findings, Watson (2002) shows that positive affect levels are not highly constrained by objective life conditions and that major life events exert a significant influence on well-being only in the short-term, where after people adapt to them and gradually move back to their pre-existing set point. However, he concluded that although positive affect scores are stable over time, many individuals displayed substantial change. Headey and Wearing (1991) reported that 31,1% of their participants had positive affect scores which shifted by more than standard deviation over a 6-year period.

Ill-health. There is research evidence that consistently links occupational stress with physical psychological ill-health. Heart disease, ulcers, some forms of cancer, allergies, migraine, back problems, depression and an increased frequency of minor ailments such as colds and flu have been associated with stress and burnout (Ho, 1997; Ryff & Singer, 1998; Sethi & Schuler, 1990). Barkhuizen, Rothmann and Tytherleigh (2003) in their study of burnout of in a higher education institution in South Africa, found that exhaustion was related to health problems. According to Maslach et al. (2001), perceived stressors lead to emotional reactions, which, in turn, lead to ill-health.

Organisational commitment. Two approaches can be followed when defining organisational commitment (Blau & Boal, 1987). In the first approach, commitment is seen as a behaviour during which the individual is viewed as committed to an organisation because it is too costly for him or her to leave. In the second approach the individual is committed to the organisation because of shared goals. Organisational commitment has recently been expanded to include three components, namely affective, continuance and normative commitment (Meyer, Stanley, Herscovitch & Topolnytsky, 2002; Siu, 2002). Affective commitment denotes an emotional attachment to, identification with and involvement in the organisation. Continuance commitment denotes the perceived cost associated with leaving the organisation, and normative commitment reflects a perceived obligation to remain in the organisation. However, criticism has also been expressed against the three-factor model of organisational commitment in favour of a one-factor model (affective commitment). Based

on interviews with engaged workers, Schaufeli et al. (2001) concluded that they have values and norms which are in line with those of their organisations.

Research aims

The aims of this study were as follows: a) to determine the validity and internal consistency of the constructs in the measurement model, including work well-being (burnout and work engagement), job characteristics, positive affect, ill-health and organisational commitment, and b) to test a causal model of work-related well-being for teachers in the North West Province of South Africa.

METHOD

Research design

A cross-sectional survey design whereby a sample is drawn from a population at one time was used. Schaufeli and Enzmann (1998) criticise the use of cross-sectional designs in burnout research, and recommend that experiments and longitudinal studies should be used when possible. However, structural equation modelling was used to address the problems associated with this design (Byrne, 2001).

Sample

Approximately 28 000 teachers are employed by the North West Education Department. Seven school districts were randomly sampled from a group of 12 in the North West Province of South Africa. Two school circuits were randomly sampled from each district. A circuit could consist of up to 40 schools. Five thousand questionnaires were sent to all teachers in the schools in randomly selected circuits. This sample represents 17,9% of the teacher population in the North West Province. One thousand three hundred completed questionnaires were returned. Only 1177 questionnaires were included in the final data analysis. Table 1 presents some of the characteristics of the participants.

Table 1

Characteristics of the Participants

Item	Category	Percentage
Type of school	Primary school	61,20
	Intermediate school	5,60
	Combined school	2,90
	Secondary school	30,20
Position	Post level 1 – Teacher	76,28
	Post level 2 – Head of Department	15,06
	Post level 3 – Deputy Principal	6,66
	Post level 4 – Principal	1,64
Education	Grade 12 + Education Diploma	33,16
	Grade 12 + Higher Education Diploma or Bachelors Degree	45,68
	Grade 12 + Education Diploma + Honours Degree	18,51
	Grade 12 + Education Diploma + Masters Degree	2,64
Gender	Male	30,52
	Female	69,48
Marital status	Single	21,34
	Engaged	4,18
	Married	46,25
	Separated/Divorce/Death	3,22
	Remarried	1,57

The sample consisted mainly of permanent (89,42%) Setswana-speaking (45,88%) females (69,48%), who are married (46,25%), possess a Grade 12 certificate and an Education Diploma/Bachelors degree (45,68%), who have not experienced a major stressful event over the last six months (56,69%) and who are members of a trade union (91,25%).

Measuring battery

An adapted version of the *Maslach Burnout Inventory-General Survey* (MBI-GS) (Schaufeli et al., 1996) was used to measure burnout. The following sub-scales of the MBI-GS were used: Exhaustion (five items; e.g. "I feel used up at the end of the workday"), and Mental Distance (eight items; e.g. "I have become less enthusiastic about my work"). All items are scored on a seven-point frequency rating scale ranging from 0 (*never*) to 6 (*daily*). Jackson and Rothmann (2004a) confirmed the construct equivalence and construct validity of these scales. The internal consistencies (Cronbach alpha coefficients) reported by Schaufeli et al.

(1996) varied from 0,87 to 0,89 for Exhaustion, 0,73 to 0,84 for Cynicism. Test-retest reliabilities after one year were 0,65 (Exhaustion), and 0,60 (Cynicism) (Schaufeli et al., 1996). Storm and Rothmann (2003a) found support for the construct validity of the MBI-GS for police members. The following alpha coefficients were obtained for the two sub-scales of the MBI-GS: Exhaustion: 0,88; Cynicism: 0,79.

The *Utrecht Work Engagement Scale* (UWES) was developed by Schaufeli et al. (2002) as a measure of engagement. Only two of the three sub-scales of the UWES were used for the purposes of this study, namely *Vigour* (six items; e.g. "I am bursting with energy in my work"), and *Dedication* (five items; e.g. "I find my work full of meaning and purpose". The items is scored on a seven-point frequency rating scale, varying from 0 (*never*) to 6 (*every day*). The alpha coefficients for the sub-scales varied between 0,68 and 0,91 (Schaufeli et al., 2002). Two recent studies using confirmative factor analysis demonstrated the factorial validity of the UWES (Schaufeli, Bakker, Hoogduin, Schaap & Kladler, 2001; Schaufeli et al., 2002). In a South African sample of police officers, Storm and Rothmann (2003b) obtained the following alpha coefficients for the two sub-scales: Vigour: 0,78; Dedication: 0,89. Naudé (2003) obtained the following alpha coefficients in a sample of emergency workers in South Africa: Vigour: 0,70; and Dedication: 0,83. Jackson and Rothmann (in press) found that the UWES shows construct equivalence and construct validity for teachers in South Africa.

The *Job Characteristics Inventory* (JCI) was developed by the authors to measure job demands and job resources for teachers. The JCI consists of 42 items. The questions are rated on a scale ranging from 1 (*never*) to 4 (*always*). Three items per dimension were included in the final questionnaire for the following dimensions of the JCI: 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, participation, contact possibilities, remuneration and career possibilities.

The Positive Affect Scale of the *Affectometer 2* (AFM) was used to measure positive affectivity. The AFM is a 20-item self-report scale measuring the balance of positive and negative feelings in recent experience. Questions are rated on a scale ranging from 1 (*not at all*) to 5 (*all the time*). The instruction to report feelings "over the past few weeks" does not rule out the possibility that happiness is a rapidly changing state, or alternatively a stable trait

lasting for years. Kamman and Flett (1983) found an alpha coefficient of 0,95 for the scale. The Affectometer 1 shows correlations of 0,74 with the General Well-being Schedule, -0,62 with an ad hoc list of somatic complaints, which indicate acceptable validity (Kammann & Flett, 1983).

The *Health Sub-scales of the ASSET* (which refers to An Organizational Stress Screening Evaluation Tool) (Cartwright & Cooper, 2002) were used to measure physical and psychological ill-health. The Health sub-scales consist of 19 items arranged on two sub-scales: The Physical health and Psychological wellbeing questionnaire is scored on a four-point scale varying from 1 (*never*) to 4 (*often*). All items on the Physical health sub-scale relate to physical symptoms of stress. The role of this sub-scale is to give an insight into physical health, not an in-depth clinical diagnosis. The items listed on the Psychological health sub-scale are symptoms of stress-induced mental ill-health. Johnson and Cooper (2003) found a Guttman split-half reliability coefficient of 0,74 and 0,91 for the Physical and Psychological Health sub-scales respectively. They also found that the Psychological wellbeing sub-scale has good convergent validity with an existing measure of psychiatric disorders, the General Health Questionnaire (Goldberg & Williams, 1988).

The *Organisation Commitment Sub-scale of the ASSET* (Cartwright & Cooper, 2002) was used to measure the individual's attitude toward his or her organisation, and includes questions relating to perceived levels of commitment to the organisation. The sub-scale consists of seven items, which are scored on a six-point scale with 1 (*strongly disagree*) to 6 (*strongly agree*). Johnson and Cooper (2003) found a Guttman split-half reliability coefficient of 0,74 for the scale.

Statistical analysis

The statistical analysis was carried out with the SPSS-program (SPSS Inc., 2003) and the Amos-program (Arbuckle, 1999). Exploratory factor analyses and Cronbach alpha coefficients were used to assess the validity and reliability of the constructs which were measured in this study. Descriptive statistics (e.g. means, standard deviations, skewness and kurtosis) and inferential statistics were used to analyse the data.

Exploratory factor analyses were carried out to determine the construct validity of the measuring instruments. The following procedure was followed: Firstly, a simple principal components analysis was conducted on the constructs which form part of the measurement model, including a) burnout and work engagement; b) job characteristics; c) positive affect; d) ill-health, and e) organisational commitment. The eigenvalues and scree plot were studied to determine the number of factors. Secondly, a principal components analysis with a direct oblimin rotation was conducted if factors were related ($r > 0,30$). Thirdly, a principal component analysis with a varimax rotation was used if the obtained factors were not related (Tabachnick & Fidell, 2001).

Pearson product-moment correlation coefficients were used to specify the relationship between the variables. In terms of statistical significance, it was decided to set the value at a 95% confidence interval level ($p \leq 0,05$). Effect sizes (Steyn, 1999) were used to decide on the practical significance of the findings. A cut-off point of 0,30 (medium effect, Cohen, 1988) was set for the practical significance of correlation coefficients.

Hypothesised relationships in the causal model are tested empirically for goodness of fit with the sample data. The χ^2 and several other goodness-of-fit indices summarise the degree of correspondence between the implied and observed covariance matrices. 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 following goodness-of-fit-indices were used as adjuncts to the χ^2 statistics: a) The Goodness of fit Index (GFI); b) The Adjusted Goodness of Fit Index (AGFI); c) The Normed Fit Index (NFI); d) The Comparative Fit Index (CFI); e) The Tucker-Lewis Index (TLI), and f) The Root Mean Square Error of Approximation (RMSEA).

RESULTS

Construct validity of the measuring instruments

Burnout and work engagement. A simple principal components analysis was conducted on two dimensions of burnout (i.e. Exhaustion and Mental Distance) and work engagement (i.e. Vigour and Dedication). These factors represent the energy dimension (varying from

Exhaustion to Vigour) and identification dimension (varying from Mental Distance to Dedication) of wellness. Two related factors ($r = 0,48$), which explained 81,03% of the total variance were extracted. Next, a principal component analysis with an oblimin rotation was conducted on these dimensions of burnout and engagement. The results showed that Vigour (0,92) and Dedication (loading = 0,92) formed the first factor (labelled *Work Engagement*). Exhaustion (loading = 0,88) and Mental Distance (loading = 0,87) formed the second factor (labelled *Burnout*).

Job demands and job resources. The 42 items of the JCI were divided into 14 parcels which consisted of three items each. A principal component analysis that was carried out on the these parcels showed four factors, which explained 60,64% of the total variance. Next, a principal component analysis with an oblimin rotation was conducted on the 14 parcels. The results showed that Pace and Amount of Work (loading = 0,80), Mental Load (loading = 0,83), and Emotional Load (loading = 0,65) formed the first factor (labelled *Overload*). Variety (loading = -0,79), Learning (loading = -0,60), and Independence (loading = -0,48) formed the second factor (labelled *Task Characteristics*). Relationship with Colleagues (loading = 0,63), Relationship with Supervisor (loading = 0,73), Role Clarity (loading = 0,74), Information (loading = 0,71), Participation (loading = 0,70) and Contact Possibilities (loading = 0,59) formed the third factor (labelled *Structure and Relationships*). Rewards (loading = 0,90) and Career Possibilities (loading = 0,74) formed the fourth factor (labelled *Advancement*).

Subsequently, the four factors of the JCI were subjected to a second-order principal component factor analysis. Two factors, which explained 72% of the variance, were extracted. Because the factors were not highly related ($r = 0,20$), it was decided to use principal factor analysis with a varimax rotation to extract the factors. Overload (loading = 0,96) formed the first factor (labelled *Job Demands*), while Task Characteristics (loading = 0,86), Structure and Relationships (loading = 0,84) and Advancement (loading = 0,61) formed the second factor (labelled *Job Resources*).

Positive affect. A simple principal component factor analysis was carried out on the 10 items of the AFM which measure positive affect. A one-factor solution which explained 37,04% of the total variance was extracted. The factor, which was labelled Positive Affect, includes the following items: a) "My life is on the right track"; b) "My future looks good"; c) "I like

myself"; d) "I can handle any problems that come up"; e) "I feel loved and trusted"; f) "I feel close to people around me"; g) "I feel I can do whatever I want to"; h) "I have energy to spare"; i) "I smile and laugh a lot", and j) "I think clearly and creatively."

Ill-health. A simple principal component analysis that was carried out on the 16 items of the Health sub-scales of the ASSET resulted in two factors, which explain 52,79% of the variance could be extracted. Next, a principal component analysis with an oblimin rotation was conducted on the 16 items. The two related factors ($r = 0,55$) which were extracted, were labelled *Physical Ill-health* (seven items) and *Psychological Ill-health* (nine items).

Organisational commitment. A simple principal component analysis that was carried out on the seven items of the Organisation Commitment sub-scale of the ASSET resulted in a one-factor solution, which explained 60,68% of the total variance. The factor, labelled Organisational Commitment, includes the following items: a) "I feel valued and trusted by the organisation"; b) "I enjoy working for this organisation to the extent that I am not actively seeking a job elsewhere"; c) "I am proud of this organisation"; d) "Outside of my particular job, I take interest in many aspects of the running and success of this organisation"; e) "Overall I am happy with my organisation"; f) "I feel that it is worthwhile to work hard for this organisation, and g) "I am committed to this organisation." The item loadings on the factor varied from 0,63 to 0,88.

Descriptive statistics

Table 2 shows the descriptive statistics and Cronbach alpha coefficients of the constructs.

Table 2

Descriptive Statistics and Cronbach Alpha Coefficients of the Measuring Instruments

Items	Mean	SD	Skewness	Kurtosis	α
Exhaustion	14,04	7,31	0,05	-0,75	0,79
Mental Distance	14,95	8,99	0,52	-0,26	0,74
Vigour	17,70	4,79	-0,75	0,08	0,70
Dedication	24,27	5,76	-1,23	1,37	0,81
Overload	26,83	4,18	-0,12	-0,35	0,73
Task Characteristics	26,73	5,01	-0,35	-0,45	0,80
Structure and Relationships	51,36	8,42	-0,34	-0,27	0,86
Advancement	9,70	3,22	0,93	0,58	0,72
Positive Affect	37,36	6,27	-0,27	-0,18	0,80
Physical (ill)Health	16,49	4,90	-0,01	-0,61	0,82
Psychological (ill)Health	18,53	6,30	0,38	-0,40	0,90
Organisational Commitment	17,54	3,692	-0,81	1,01	0,88

Inspection of Table 2 shows that acceptable Cronbach alpha coefficients were obtained for all the scales. All the alpha coefficients were higher than the guideline of $\alpha > 0,70$ (Nunnally & Bernstein, 1994). Therefore, the scales show acceptable internal consistencies. Table 2 also indicates that all the scores of the sub-scales are normally distributed except for Dedication (negatively skew) and Organisational Commitment (positively skew).

Correlations between the constructs

The product-moment correlation coefficients between constructs are reported in Table 3. Spearman correlations were used in cases where the distribution of scores is skew.

Table 3

Correlation Coefficients between the Measuring Instruments

Items	1	2	3	4	5	6	7	8	9	10	11
1. Exhaustion	-	-	-	-	-	-	-	-	-	-	-
2. Mental Distance	0,55 ⁺⁺	-	-	-	-	-	-	-	-	-	-
3. Vigour	-0,39 ⁺	-0,39 ⁺	-	-	-	-	-	-	-	-	-
4. Dedication	-0,37 ⁺	-0,47 ⁺	0,67 ⁺⁺	-	-	-	-	-	-	-	-
5. Overload	0,43 ⁺	0,30 ⁺	-0,19 [*]	-0,16 [*]	-	-	-	-	-	-	-
6. Task Characteristics	-0,36 ⁺	-0,36 ⁺	0,55 ⁺⁺	0,58 ⁺⁺	-0,14 [*]	-	-	-	-	-	-
7. Structure and Relations	-0,22 [*]	-0,22 [*]	0,37 ⁺	0,36 ⁺	-0,11 [*]	0,55 ⁺⁺	-	-	-	-	-
8. Advancement	-0,30 ⁺	-0,19 [*]	0,28 [*]	0,28 [*]	-0,21 [*]	0,40 ⁺	0,32 ⁺	-	-	-	-
9. Positive Affect	-0,35 ⁺	-0,31 ⁺	0,45 ⁺	0,41 ⁺	-0,20 [*]	0,38 ⁺	0,31 ⁺	0,25 [*]	-	-	-
10. Physical Ill-health	0,37 ⁺	0,28 [*]	-0,25 [*]	-0,22 [*]	0,26 [*]	-0,24 [*]	-0,20 [*]	-0,18 [*]	-0,29 [*]	-	-
11. Psychological Ill-health	0,49 ⁺	0,45 ⁺	-0,44 ⁺	-0,41 ⁺	0,31 ⁺	-0,39 ⁺	-0,30 ⁺	-0,21 [*]	-0,48 ⁺	0,64 ⁺⁺	-
12. Organisational Commitment	-0,30 ⁺	-0,33 ⁺	0,46 ⁺	0,46 ⁺	-0,15 [*]	0,48 ⁺	0,40 ⁺	0,30 ⁺	0,37 ⁺	-0,21 [*]	-0,33 ⁺

* Statistically significant: $p < 0,01$

+ Practically significant correlation (medium effect): $r > 0,30$

++ Practically significant correlation (large effect): $r > 0,50$

Table 3 shows a practically significant correlation coefficient of large effect between Exhaustion and Mental Distance. Exhaustion and Mental Distance (which form the core of burnout) are negatively related to Vigour, Dedication, Overload, Task Characteristics (including a lack of variety, learning opportunities and independence), Advancement, Positive Affect and Organisational Commitment (all medium effects). Exhaustion and Mental Distance are also practically significantly related to Physical and Psychological Ill-health (both medium effects). In addition, Exhaustion is related to a perceived lack of Advancement (including rewards and opportunities for promotion).

Vigour and Dedication (which form the core of work engagement) are practically significantly related to Task Characteristics (i.e. variety, learning opportunities and independence) (both large effects). Vigour and Dedication are also related to Structure and Relations (i.e. relationship with colleagues, relationship with supervisor, role clarity, information, participation and contact possibilities), Positive Affect and Organisational

Commitment (all medium effects). Furthermore, Vigour and Dedication are negatively related to Physical and Psychological Ill-health.

A model of work-related well-being

Next, a model based on the findings of a literature review on work wellness and the results of the exploratory factor analyses in this study was developed. It was hypothesised that Job Demands (i.e. Overload), a lack of Job Resources (i.e. Task Characteristics, Structure and Relationships and Advancement), and low Positive Affect, lead to Burnout (i.e. Exhaustion and Mental Distance), which result in Ill-health (i.e. Physical and Psychological Ill-health). Furthermore, it was hypothesised that Job Resources (i.e. Task Characteristics, Structure and Relationships and Advancement) combined with Positive Affect, leads to Work Engagement (i.e. Vigour and Dedication), which result in Organisational Commitment.

The hypothesised model was tested with structural equation modelling. Results indicated that the model fit the data adequately. The revised model – including covariation – shows a good fit ($\chi^2 = 221,60$; $\chi^2/df = 5,40$; GFI = 0,96; AGFI = 0,94; CFI = 0,96; IFI = 0,96; TLI = 0,94; RMSEA = 0,06). The final model is given in Figure 1.

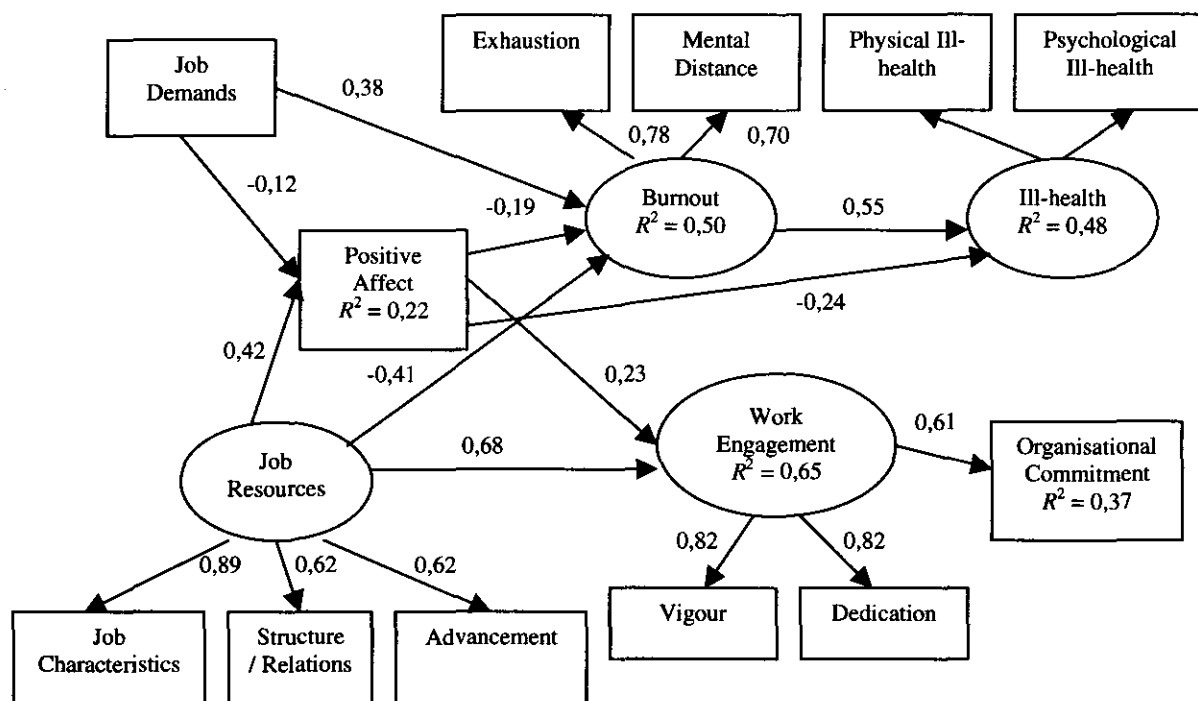


Figure 1. A Maximum likelihood estimate for the model of work-related well-being, $N = 1177$. Note. All factors loadings and path coefficients are significant at the $p < 0,01$ level.

The structural model confirms that Job Demands and a lack of Job Resources lead to burnout (Exhaustion and Mental Distance). Positive affect moderates the relationship between Job Demands and Burnout, the relationship between Job Resources and Burnout, as well as the relationship between Job Resources and Work Engagement (Vigour and Dedication). This means that the levels of Burnout and Work Engagement do not only depend on Job Demands and Job Resources, but also on the levels of Positive Affect of teachers. Positive Affect also moderates the relationship between Burnout and Ill-health, which means that Ill-health of teachers does not only depend on Burnout, but also on a low level of Positive Affect. Figure 1 also shows that Burnout mediates the relationship between Job Demands (overload) and Physical and Psychological Ill-health, while Work Engagement mediated the relationship between Job Resources and Organisational Commitment.

DISCUSSION

The aims of this study were to assess the validity and internal consistency of the constructs in the measurement model of work-related well-being and to test a causal model thereof for teachers.

Exploratory factor analysis with the positive and negative dimensions of energy and identification resulted in two factors. The first factor represents incapability (exhaustion) and unwillingness (mental distance) at work, i.e. burnout. The second factor represents capability (vigour) and willingness (dedication) at work, i.e. work engagement. The correlations between these factors varied from 0,39 to 0,47. Therefore, although these dimensions are related, it seems that they represent different aspects of well-being at work, which could be integrated model in one model (see also Schaufeli, 2003).

Regarding organisational causes of burnout and work engagement, two main factors, namely job demands and job resources, were extracted by using exploratory factor analysis. *Job demands* included pace and amount of work (i.e. working under time pressure and having too much work to do), mental load (i.e. having to attend to many things at one time and giving continuous attention to work), and emotional load (i.e. attending to difficult children at work and experiencing emotionally upsetting situations). *Job resources* included three categories, namely task characteristics, structure and relationships and advancement. Task characteristics included task variety (i.e. performing tasks which make sufficient demands on his or her skills and having enough variety in the work), opportunities to learn (i.e. having opportunities for development and achievement), and independence (i.e. freedom in planning and performing work activities). Structure and relationships included role clarity (knowing exactly what is expected at work), information (having sufficient information on the purposes of his or her work and the results thereof), participation (participating in decision-making in the work situation), relationships with colleagues (i.e. counting on colleagues when difficulties arose) and the supervisor (i.e. counting on the supervisor when faced with difficulties and feeling appreciated by the supervisor), and contact possibilities at work (i.e. having contact with colleagues during working hours). Advancement included remuneration (being paid a good salary which is sufficient considering the work that a teacher does), and career possibilities (having the possibility to progress financially, to follow training programmes and to be promoted).

Regarding positive affect, one factor was extracted. Positive affect was made up of items referring to confluence, optimism, self-esteem, self-efficacy, social support, social interest, freedom, energy, cheerfulness and thought clarity (Kamman & Flett, 1983). As far as ill-health is concerned, two factors, which represent the main outcomes of burnout, namely physical and psychological ill-health were extracted (see Barkhuizen et al., 2004).

Organisational commitment, which was found to be a one-factor construct, refers to the extent to which teachers enjoy working for the organisation and not seeking a job elsewhere, take interest in the running and success of the organisation, are proud of and happy with the organisation and feel that it is worthwhile to work hard for it.

Regarding the negative aspects of work-related well-being, the structural model showed that job demands (i.e. pace and amount of work, mental load and emotional load) and a lack of resources (i.e. unfavourable task characteristics, poor structure and relationships as a lack of advancement) lead to burnout (i.e. exhaustion and mental distancing). As hypothesised in the JD-R model (Demerouti et al., 2001), excessive job demands lead to exhaustion (and incapability to perform), while a lack of job resources leads to mental distancing (unwillingness to perform). Furthermore, burnout mediates the relationship between job demands and physical and psychological ill-health. The results also confirmed that positive affect, which is one aspect of employees' happiness, moderates the effects of job demands and a lack of resources on burnout and ill-health (Cropanzano & Wright, 2001). Based on the findings of Headey and Wearing (1991), it seems plausible that job demands and a lack of job resources contribute to lower positive affect, which suppress approach-oriented strategies (Watson, 2002). These variables, as well as the interactions among them, lead to an incapability and unwillingness of teachers to perform.

Regarding the positive aspects of work-related well-being, the structural model showed that job resources and positive affect lead to work engagement (i.e. vigour and dedication). Although job resources, such as task characteristics, facilitative structures and supportive relationships and advancement have strong effects on work engagement, it seems that the effect of these resources depends on the level of positive affect of an individual. In addition, work engagement mediates the relationship between job resources and organisational commitment.

The results of this study build on the COBE model (Schaufeli & Bakker, 2004), which assumes two psychological processes, namely an energetic and a motivational process. The energetic process links job demands with health problems via burnout. The motivational process links job resources via work engagement with organisational outcomes. Job resources may play either an intrinsic motivational role (by fostering the employee's growth, learning

and development), or they may play an extrinsic motivational role (by being instrumental in achieving work goals).

A limitation of this study is that the design is cross-sectional. 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. Furthermore, the results were obtained solely by self-report measures. This may lead to a problem commonly referred to as "method variance" or "nuisance".

RECOMMENDATIONS

Primary and secondary educational institutions should attend to the work-related well-being of their staff. The results suggest that interventions aimed at decreasing the workload of teachers should cause a decrease in experienced exhaustion (incapability) and cynicism (unwillingness). Secondly, interventions aimed at job resources could contribute to lower exhaustion and cynicism and higher vigour and dedication. Specific areas of intervention include management, employee relations, rewards and job design. Thirdly, interventions directed at increasing positive affect should be implemented and/or maintained. Specific interventions include cognitive-behavioural therapy and personal efficacy training.

On the secondary and tertiary levels interventions could be implemented to help teachers to raise their levels of positive affect (Watson, 2002). Positive affect could be raised by helping individuals to focus outwardly and engaging their environment through socialising and interpersonal behaviour as well as exercise and physical activity. Furthermore, they should strive after goals they regard as important (rather than attaining goals). Monitoring of moods and becoming sensitive towards internal rhythms will help them to maximise feelings of efficacy and enjoyment, and minimising stress and frustration.

Longitudinal research regarding causal relationships between burnout, work engagement, health, job characteristics and positive affect at educational institutions in South Africa should be undertaken. Research should also be undertaken regarding causes of work engagement of teachers in South Africa.

REFERENCES

- Arbuckle, J.L. (1999). *Amos 4.0*. Chicago, IL: Smallwaters.
- Bakker, A.B., Schaufeli, W.B., Sixma, H.J. & Bosveld, W. (2001). Burnout contagion among general practitioners. *Journal of Social and Clinical Psychology*, 20, 82–98
- Barkhuizen, N., Rothmann, S. & Tytherleigh, M.Y. (2004, April). *Burnout and engagement of academic staff in higher education institutions in South Africa*. Poster presented at the Annual Conference of the British Psychological Society, London, UK.
- Blau, G.J. & Boal, K.B. (1987). Conceptualizing how job involvement and organizational commitment affect turnover & absenteeism. *Academy of Management Review*, 12, 288–300.
- Borg, M.G. (1990). Occupational stress in British educational settings: A review. *Educational Psychology*, 10, 103–126.
- Boyle, G.J., Borg, M.G., Falzon, J.M. & Baglioni, A.J. (1995). A structural model of the dimensions of teacher stress. *British Journal of Educational Psychology*, 65, 49–67.
- Brissie, J.S., Hoover-Dempsey, K.V. & Bassler, O.C. (1988). Individual, situational contributors to teacher burnout. *The Journal of Educational Research*, 82, 106–112.
- Byrne, B.M. (1999). The normological network of teacher burnout: A literature review and empirically validated model. In R. Vandenberghe & A.M. Huberman (Eds.), *Understanding and preventing teacher burnout* (pp. 15–37). Cambridge, UK: Cambridge University Press.
- Byrne, B.M. (2001). *Structural equation modeling with AMOS: Basic concepts, applications and programming*. Mahwah, NJ: Erlbaum.
- Cartwright, S. & Cooper, C.L. (2002). *ASSET: An Organisational Stress Screening Tool – The Management Guide*. Manchester, UK: RCL Ltd.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Orlando, FL: Academic Press
- Cooper, C.L., Dewe, P.J. & O'Driscoll, M.P. (2001). *Organizational stress: A review of critique of theory, research, and applications*. Thousand Oaks, CA: Sage.
- Cordes, C. L. & Dougherty, T. W. (1993). A review and an integration of research on job burnout. *Academy of Management Review*, 18, 621–656.
- Cropanzano, R., James, K. & Konovsky, M.A. (1993). Dispositional affectivity as a predictor of work attitudes and job performance, *Journal of Organizational Behavior*, 14, 595–606.

- Cropanzano, R. & Wright, T.A. (2001). When a "happy" worker is really a "productive" worker: A review and further refinement of the happy-productive worker thesis. *Consulting Psychology Journal: Practice and Research*, 53, 182–199.
- Demerouti, E., Nachreiner, F., Bakker, A.B. & Schaufeli, W.B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology*, 56, 499–512.
- Department of Education. (2001). *Education in South Africa: Achievements since 1994*. Pretoria: Department of Education. (Retrieved from web site: www.education.pwv.gov.za).
- Friedman, I. (1995). Student behavior patterns contributing to teacher burnout. *The Journal of Educational Research*, 88, 281–289.
- Goldberg, D.P. & Williams, P. (1988). A user's guide to the GHQ. London: NFER, Nelson.
- Green, D.E., Walkey, F.H. & Taylor, A.J.W. (1991). The three-factor structure of the Maslach Burnout Inventory. *Journal of Social Behavior and Personality*, 6, 453–472.
- Headey, B. & Wearing, A. (1991). Subjective well-being: A stocks and flows framework. In F. Strack, M. Argyle & N. Schwarz (Eds.), *Subjective well-being: An interdisciplinary perspective* (pp. 49–72). New York: Pergamon.
- Ho, J.T.S. (1997). Corporate wellness programmes in Singapore: Effect on stress, satisfaction and absenteeism. *Journal of Managerial Psychology*, 12, 177–189.
- Jackson, L.T.B. & Rothmann, S. (2004a). *An adapted model of burnout for teachers in South Africa*. Manuscript submitted for publication.
- Jackson, L.T.B. & Rothmann, S. (2004b). *The validation of the Utrecht Work Engagement Scale for South African teachers*.
- Johnson, S. & Cooper, C. (2003). *The construct validity of the ASSET stress measure*. Manuscript made available by authors.
- Kammann, R. & Flett, R. (1983). Affectometer 2: A scale to measure current level of general happiness. *Australian Journal of Psychology*, 35, 259–265.
- Kelloway, E.K. & Barling, J. (1991). Job characteristics, role stress and mental health. *Journal of Occupational Psychology*, 64, 291–304.
- Kyriacou, C. (2001). Teacher stress: Directions for future research. *Educational Review*, 53, 27–35.
- Lee, R.T. & Ashforth, B.E. (1996). A meta-analytic examination of the correlates of the three dimensions of job burnout. *Journal of Applied Psychology*, 81, 123–133.
- Maslach, C. & Jackson, S.E. (1986). *The Maslach Burnout Inventory* (2nd ed.). Palo Alto, CA: Consulting Psychologists Press.

- Maslach, C. & Leiter, M.P. (1997). *The truth about burnout*. San Francisco: Jossey-Bass.
- Maslach, C., Jackson, S.E. & Leiter, M. (1996). *Maslach Burnout Inventory: Manual* (3rd ed.). Palo Alto, CA: Consulting Psychologists Press.
- Maslach, C., Schaufeli, W.B. & Leiter, M.P. (2001). Job burnout. *Annual Review of Psychology*, 52, 397–422.
- Meyer, J.P., Stanley, D.J., Herscovitch, L. & Topolnysky, L. (2002). Affective continuance and normative commitment to the organization: A meta-analysis of antecedents, correlates, and consequences. *Journal of Vocational Behaviour*, 61, 20–52.
- Naudé, J.L.P. (2003). *Occupational stress, coping, burnout and work engagement of emergency workers in Gauteng*. Unpublished doctoral thesis, PU for CHE, Potchefstroom.
- Nunnally, J.C. & Bernstein, I.H. (1994). *Psychometric theory* (3rd ed.). New York: McGraw-Hill.
- Pons, A. & Deale, P. (2002). *Labour relations handbook*. Cape Town: Juta & Co.
- Rothmann, S. (2003). Burnout and engagement: A South African perspective. *South African Journal of Industrial Psychology*, 29(4), 16-25.
- Ryff, C.D. & Singer, B. (1998). The contours of positive human health. *Psychological Inquiry*, 9(1), 1–28.
- Sethi, A.S. & Schuler, R.S. (1990). *Handbook of organizational stress coping strategies*. Cambridge, MA: Ballinger.
- Schaufeli, W.B. (2003). Past performance and future perspectives of burnout research. *Journal of Industrial Psychology*, 29(4), 1–15.
- Schaufeli, W.B. & Bakker, A.B. (2001). Werk en welbevinden: Naar een positieve benadering in de Arbeids- en Gezondheidspsychologie [Work and wellbeing: Towards a positive occupational health psychology]. *Gedrag en Organisatie*, 14, 229-253.
- Schaufeli, W.B., Taris, T., Le Blanc, P., Peeters, M., Bakker, A.B. & De Jonge, J. (2001). *Maakt arbeid gezond? Op zoek naar de bevlogen werknemer*. [Do work cure: Looking for the engaged worker.]. Utrecht University: Utrecht, The Netherlands.
- Schaufeli, W.B. & Bakker, A.B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behaviour*, 25, 1–23.
- Schaufeli, W.B., Bakker, A.B., Hoogduin, K., Schaap, C. & Kladler, A. (2001). On the clinical validity of the Maslach Burnout Inventory and the burnout measure. *Psychology and Health*, 16, 565-583.

- 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). Maslach Burnout Inventory – 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., 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.
- Schaufeli, W.B., Salanova, M., González-Romá, V. & Bakker, A.B. (2002). The measurement of engagement and burnout: A confirmatory analytic approach. *Journal of Happiness Studies*, 3, 71-92.
- Schonfeld, I.S. (1992). Assessing stress in teachers: Depressive symptoms scales and neutral self-reports of the work environment. In J.C. Quick, L.R. Murphy & J.J. Hurrell (Eds.), *Stress and well-being at work: Assessment and interventions for occupational mental health*. Washington: American Psychological Association.
- Seligman, M.E.P. & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist*, 55, 5-14.
- Shirom, A. (1989). Burnout in work organizations. In C.L. Cooper & I.T. Robertson (Eds.), *International Review of Industrial and Organizational Psychology 1989* (pp. 25-48). Chichester, UK: Wiley.
- SPSS Inc. (2003). *SPSS 12.0 for Windows*. Chicago, IL: Author.
- Steyn, H.S. (1999). *Praktiese betekenisvolheid: Die gebruik van effekgroottes*. Wetenskaplike bydraes – Reeks B: Natuurwetenskappe Nr. 117. Potchefstroom: PU vir CHO.
- Storm, K. & Rothmann, S. (2003a). A psychometric analysis of the Maslach Burnout Inventory – General Survey in the South African Police Service. *South African Journal of Psychology*, 33, 219-226.
- Storm, K. & Rothmann, S. (2003b). A psychometric analysis of the Utrecht Work Engagement Scale in the South African police service. *SA Journal of Industrial Psychology*, 29(4), 62-70.
- Strümpfer, D.J.W. (2002, March). *Resiling: A stitch that saves nine*. Paper presented at the 1st South African Burnout Conference, Potchefstroom.
- Siu, O.L. (2002). Occupational stressors and well-being among Chinese employees: The role of organizational commitment. *Applied Psychology: An International Review*, 5, 527-544.

- Watson, D. (2002). Positive affectivity: The disposition to experience pleasurable emotional states. In C.R. Snyder & S.J. Lopez (Eds.), *Handbook of positive psychology*. (pp. 106-119). Oxford: Oxford University Press.
- World Economic Forum. (2002). *The global competitive report 2001–2002*. New York: Oxford University Press. (Retrieved from web site: www.weforum.org).

CHAPTER 7

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

The purpose of this chapter is to provide conclusions of the five articles which formed part of this study. Conclusions are drawn with regard to the research objectives. Furthermore, limitations of this study are discussed and recommendations for the organisation are made. Finally, research opportunities that emanate from this research are presented.

7.1 CONCLUSIONS

Next, the conclusions of the empirical studies are made.

An adapted model of burnout

The first objective of this study was to determine the psychometric properties of an adapted version of the Maslach Burnout Inventory-General Survey (MBI-GS) for teachers in different language groups and to determine the differences between the burnout of different demographic groups.

The results in Article 1 showed that contrary to the findings of Salanova et al. (in press), burnout is not characterised by separate cynicism and depersonalisation dimensions. Instead the two dimensions collapsed into one mental distance construct, which along with exhaustion and professional efficacy, constitute the syndrome of burnout. The three-factor model fitted better to the data than a four-factor model (separate cynicism and depersonalisation dimensions).

Based on both conceptual and empirical grounds, item 13 and 18 was deleted from the original MBI-GS, resulting in a 19-item scale. The deletion of item 13 ("I just want to do my job and not be bothered") is consistent with previous studies (Schutte, Toppinen, Kalimo, & Schaufeli, 2000; Storm & Rothmann, 2003), where this item was excluded testing the factorial validation of the MBI-GS. According to these authors, problems might be caused by the ambivalent nature of this item. A high score may indicate disengagement and social isolation by closing oneself off from contacts with others at work. A higher score may also

indicate strong motivation and engagement. Therefore, although the deletion of item 13 was part of the post hoc analyses and validation is needed in future studies, the decision to eliminate this item is consistent with the findings of previous studies (Schutte et al., 2000; Storm & Rothmann, 2002).

Item 18 ("I've become more callous toward people since I took this job") was also removed from the questionnaire. This item showed unacceptable high standardised residuals relatively to items 17 ("I feel I treat some learners if they were impersonal objects"), item 16 ("At my work I feel confident that I am effective at getting things done"), item 14 ("I have become more cynical about whether my work contributes anything"), item 10 ("In my opinion I am good at my job") and item 4 ("Working all day is really a strain for me"). The participants possibly associated the word "callous" with Professional efficacy, and not with either Exhaustion, Cynicism or Depersonalisation.

To increase the fit of the three-factor model, two pairs of error terms were allowed to correlate. Although correlated error terms may be derived from specified characteristics of either respondents or the items of a survey, they represent systematic rather than random measurement error in item responses. They may derive from characteristics specific either to the items or the respondents. For example, if these parameters reflect item characteristics, they may represent a small-omitted factor. However, as may be the case here, correlated errors may represent respondent characteristics that reflect bias such as yea-/nay-saying, social desirability, as well as a high degree of overlap in item content (Byrne, 2001).

Therefore, the conclusion can be made that the adapted version of the MBI-GS is a valid and internally consistent measuring instrument of burnout of teachers. It seems that depersonalisation and cynicism contribute to mental distance. Depersonalisation implies mental distance towards the recipients of services, while cynicism implies mental distance towards work. Structural equation modelling confirmed the factorial invariance of the adapted MBI-GS for the African and Afrikaans language groups.

Differences were found between the levels of exhaustion, cynicism, depersonalisation and professional efficacy of teachers in different types of schools. Teachers in secondary schools suffered from higher levels of exhaustion compared to those in primary schools.

Teachers who consider quitting the profession, were more exhausted and showed higher mental distance than those who do not consider quitting the profession. The result is consistent with the findings of Weisberg and Sagie (1999). The results also indicated that teachers who do not possess the right equipment to teach effectively were more emotional drained and had more negative attitudes towards the job and the learners. The results is consistent with the assumptions of the recently developed Job Demand-Resources (JD-R) model (Demerouti, Bakker, Nachreiner & Schaufeli, 2001). Teachers in the age group 45 – 50 experienced significantly lower levels of exhaustion and cynicism compared to younger teachers (18 – 27) and those approaching retirement (57 –68). No significant differences were obtained for the levels of different burnout dimensions and sex. In other words male teachers do not experience significantly higher levels of exhaustion, mental distance (cynicism and depersonalisation) and professional efficacy and compared to female teachers.

A model of work engagement

The second objective of this study was to determine the psychometric properties of the Utrecht Work Engagement Scale (UWES), to assess its construct equivalence for South African teachers in different language groups, and to determine the differences between the work engagement of different demographic groups.

The results showed that engagement as measured by the UWES is indeed a three-factor construct consisting of vigour, dedication and absorption. In examining the factor structure, some undesirable psychometric characteristics were found to be associated with several items of the UWES. Based on both conceptual and empirical grounds, item 12, 16 and 17 were deleted from the UWES. These particular items may be problematic because they do not correspond to the conceptual domain of the particular dimension. However, it is more likely that they are somewhat ambiguous, or that they are either sample- or country specific. Also, the problems of some of these items may be related to words that some of the participants found difficult to understand (e.g. "vigorous", "immersed" and "resilient"). This is highly likely, because only 32,05 % of the participants had English as mother tongue. The prominent correlated errors of the UWES in this study presented another problem. Correlated errors may represent respondent characteristics that reflect bias such as social desirability, as well as high degree of overlap in item content (Byrne, 2001).

It is believed that this confusing state of affairs regarding the UWES does not reflect weaknesses inherent in the instrument, but it is rather due to more general factors. First, the UWES is a recently constructed measuring instrument. Therefore, relatively few studies have critically viewed its psychometric properties. Secondly, the UWES is an instrument that was originally constructed from data based on samples of individuals in the Netherlands. Despite a few studies using the UWES in South Africa (e.g. Naudé, 2003; Storm & Rothmann, 2003b), more research regarding work engagement in different occupational settings is still required. Schaufeli, Martinez, Pinto, Salanova, and Bakker (2002) also found that the hypothesised three-factor model of work engagement was invariant across Spanish, Dutch and Portuguese samples. Furthermore, the dimensionality of the UWES could be influenced because of the high reported correlations between the three dimensions. Explicit theory indicating exactly how the three sub-scales relate to one another and to other variables must be developed before one can evaluate thoroughly the theoretical validity of a three-component conceptualisation.

The results indicated that construct equivalence of the UWES was acceptable for the two language groups. However, the covariances for the different language groups were not equivalent. The results provides partial support for the hypothesis that engagement, as measured by the UWES, can be defined as a three-dimensional construct with an equivalent structure for Afrikaans and African language groups. Furthermore, the internal consistency of the Absorption scale was low.

No differences were found regarding the engagement levels of teachers based on job levels, marital status, overall health condition, and possession of the right skills, knowledge and abilities to teach effectively and age categories. However, statistically significant differences were found as far as the work engagement of groups based on qualifications, type of school, considerations about quitting the profession as well as the frequencies of those considerations and the possession of the right equipment were concerned. Data analyses revealed that, except for the type school (statistically significance for both sub-scales with practically significance on dedication) all the other demographic variables showed only statistically significant differences (which were not practically significant) on the vigour and dedication sub-scales.

Teachers in secondary schools experienced less dedication compared to those in combined and primary schools. Jackson and Rothmann (in press) found that secondary school teachers experience higher levels of exhaustion (essential but not a sufficient component of burnout) compared to those in primary, intermediate and combined schools. Therefore, the results might suggest that burnout contributes to the erosion of engagement. The results also confirmed the findings of Schaufeli and Bakker (2004) who argued that job resources are related to engagement, with statistically significant differences on vigour and dedication and possession of the right equipment. The results also confirm that dedication is the opposite of distancing one from your job, if considerations (and the frequencies of those considerations) to quit the profession are seen as symptoms to distance one from his/her working environment, with statistically significant differences on vigour and dedication and this demographic variable – however these differences were not practically significant.

Analysis of results of *t*-tests revealed no significant differences between the work engagement of males and females. The results are contrary to findings mentioned in the Test Manual of the UWES (Schaufeli & Bakker, 2003) indicating that men score slightly higher on dedication. No statistically significant difference were found in the *t*-test for those that have not taken leave whilst being sick compared to those that have and those that have experienced a chronic illness a stressful during the last three months and those that have.

Occupational stress of teachers

The third objective of this study was to validate An Organisational Stress Screening Tool (ASSET) for teachers, to assess the relationship between occupational stress and health, and to determine whether organisational commitment moderates the effects of occupational stress on ill-health.

Reliability analyses revealed that all the dimensions of the ASSET questionnaire which were used to assess occupational stress were sufficiently internally consistent. The 12 dimensions of the ASSET were normally distributed in the sample with low skewness and kurtosis. The Cronbach alpha coefficients, varying from 0,59 – 0,89, compare reasonably well with the guideline of 0,70 (0,55 in basic research), demonstrating that a large portion of the variance is explained by the dimensions (internal consistency of the dimensions) (Nunnally & Bernstein,

1994). All the mean inter-item correlations of the ASSET dimensions were within the guideline of $0,15 < r < 0,50$ (Clark & Watson, 1995).

The analysis of the sten scores of the ASSET dimensions indicated average scores on all the sources of stress as measured by the instrument. However, closer inspection revealed that some aspects (as measured by certain items) of these dimensions obtained high scores. On the other hand, the scores obtained for the effects of stress (outcomes), were high for physical (ill)health to average for psychological (ill)health and very high for perceived commitment from the organisation to high for commitment from the individual. Although average scores were obtained for different perceived stressors in the workplace of teachers in the North West Province, job security obtained the highest score followed by overload, job characteristics, work relationship, pay and benefits and work-life balance. Control, resources and communication were experienced as the less stressful.

In spite of the fact that the dimension job characteristics obtained average sten scores, most items with high sten scores resorted under this dimension. Particular characteristics about the job of a teacher that obtained high sten scores were close monitoring of performance and having the same job for the next five to ten years. Other stressor items that showed high sten scores were: a) having to work unsocial hours; b) a lack of proper equipment; c) others taking credit for what an individual had achieved; d) fears that skills will become redundant, and e) constant changes that are taking place in the organisation.

When interpreting the sten scores, we want low scores for perception of your job (stressors) and your health, but high scores for attitudes towards your organisation (Tytherleigh, 2002). However, in the present study, the ideal situation prevail partially, in the sense that low scores were observed for perception of your job (stressors), high scores for attitudes towards the organisation (commitment), but alarmingly, high scores were observed for specific physical symptoms such as headaches, feeling sick and muscular tension/aches/pains, and high sten scores for specific psychological ill-health symptoms, such as the experience of panic and anxiety attacks.

High sten scores for all categories of commitment from the organisation and commitment from the individual to the organisation were obtained, except for two items covering individual commitment. Teachers in the sample seemed very proud to be associated with their

organisations (sten of 10), but they were less willing to put themselves up for their organisations. Overall, respondents were committed to their organisations.

Occupational stressors were positively related to physical and psychological ill-health. Occupational stressors were also negatively related to both commitment from the organisation and individual. These findings confirm previous findings that work demands require sustained effort and are therefore associated with certain physical and/or psychological costs (Schaufeli & Bakker, 2004). It also in line with recent findings that suggested that organisational commitment was not only related to most of the physical and psychological outcomes among workers, but also to the moderating effects on the stressor-health relationship (Siu, 2002).

Regarding the differences in stress levels (as measured by the ASSET) based on biographical characteristics of the population, commitment from separated and remarried teachers and their perception of the organisations commitment towards them seems relatively higher compared to teachers with different marital status. However, remarried and engaged teachers showed practically significant differences in their experiences of work-life balance, resources and communication, overload and job characteristics. Teachers in secondary schools generally did score higher on perception of job dimensions as potential stressors, lower on attitude towards the organisation, and higher on ill-health, relative to the other subgroups (different types of schools) in the sample. There were practically significant difference between the experience of work-life balance and practically significant differences also existed in the experience of commitment from the individual to the organisation between teachers with the minimum and those with the highest qualifications. Teachers in the age group of 18 to 27, generally did score higher on perception of job dimensions as potential stressors, lower on attitude towards the organisation, and higher on ill-health, relative to the other subgroups (different age groups) in the sample.

Results obtained in this study indicated that those at risk of high stress seems to be those who are either separated or remarried, teaching in secondary schools, with the minimum qualifications and that have just started their careers. No significant differences were found between the experiences of men and women. In this study it seems that younger teachers perceived stress manifest in either physical or psychological health problems.

A negative relationship was found between occupational stress and ill health on the one hand and individual commitment on the other hand, with 7% of the variance in individual commitment being explained by occupational stress. The negative relationships between individual commitment and job stress and strain are indicative of a moderating effect of the first mentioned in the stress-strain relationship. The analysis also indicate a positive relationship between job stress and strain (physical and psychological ill-health) with job stress explaining 31% of the variances in ill-health.

Task characteristics, affect, burnout and ill-health

The fourth objective of this study was to assess the relationship between burnout, health, job characteristics and affect of teachers in a district of the North West Province in South Africa.

Exploratory factor analysis resulted in two-factor structures for both the Health Questionnaire and the Affectometer. The factors of the Health Questionnaire were labelled Physical Health and Psychological Health. The factors of the Affectometer were labelled Positive Affect and Negative Affect. Seven factors were extracted on the Job Characteristics Inventory (JCI) (which was developed to measure job demands and job resources), namely Management, Task Characteristics, Role Overload, Job Insecurity, Relationships with Colleagues, Control and Rewards. The internal consistencies of these scales were acceptable.

Exhaustion of teachers was best predicted by role overload, poor task characteristics, a lack of control and low positive affect. Role overload includes working under time pressure, attending to many things at a time, having too much work to do and being confronted by emotionally upsetting situations in schools. The finding that role overload predicted almost 25% of the variance in exhaustion, confirms previous findings (e.g. Schaufeli & Enzmann, 1998). In addition, unfavourable task characteristics (which refer to possibilities for independent thought, freedom in carrying out work activities, influence in planning of work activities, personal growth and variety at work) contributed to exhaustion. Furthermore, a lack of control, such as few opportunities to be promoted, ambiguity and a lack of possibilities to influence the decisions within schools, contributed to exhaustion. The results showed that positive affect is inversely related to exhaustion. Therefore, teachers with low positive affect might experience more exhaustion because they lack the approach behaviour which is needed to manage situational factors which contribute to exhaustion.

Cynicism resulted from task characteristics, role overload and negative affect, even after controlling including exhaustion as a predictor of cynicism. It is possible that exhaustion contributes to teachers distancing themselves from their work (cynicism). Not experiencing possibilities of independent thought, freedom in carrying out work activities, influence in planning of work activities, personal growth and variety at work further contribute to developing a mental distance from work. Furthermore, negative affect, which is part of the avoidance-oriented behavioural system, contributed to mental distance.

Task characteristics, positive affect and low negative affect contributed to professional efficacy. These constructs explained 22% of the variance in professional efficacy. However, it seems that task characteristics (i.e. experiencing possibilities of independent thought, freedom in carrying out work activities, influence in planning of work activities, personal growth and variety at work) explained the largest proportion of the variance. It can be concluded that exhaustion leads to physical ill-health, while exhaustion, cynicism and a lack of professional efficacy leads to psychological ill-health.

A model of work-related well-being

The last objective of this study was to develop and test a causal model of work-related well-being for teachers in the North West Province of South Africa.

Exploratory factor analysis with the positive and negative dimensions of energy and identification at work resulted in two factors. The first factor represents incapability (exhaustion) and unwillingness (mental distance) at work, i.e. burnout. The second factor represents capability (vigour) and willingness (dedication) at work, i.e. work engagement. The correlations between the four factors (i.e. exhaustion, cynicism, vigour and dedication) varied from 0,39 to 0,47. Therefore, although these dimensions are related, it seems that they represent different aspects of well-being at work, which could be integrated model in one model (see also Schaufeli, 2003).

Regarding organisational causes of burnout and work engagement, two main factors, namely job demands and job resources, were extracted by using exploratory factor analysis. *Job demands* included pace and amount of work (i.e. working under time pressure and having too much work to do), mental load (i.e. having to attend to many things at one time and giving

continuous attention to work), and emotional load (i.e. attending to difficult children at work and experiencing emotionally upsetting situations). *Job resources* included three categories, namely task characteristics, structure and relationships and advancement. Task characteristics included task variety (i.e. performing tasks which make sufficient demands on his or her skills and having enough variety in the work), opportunities to learn (i.e. having opportunities for development and achievement), and independence (i.e. freedom in planning and performing work activities). Structure and relationships included role clarity (knowing exactly what is expected at work), information (having sufficient information on the purposes of his or her work and the results thereof), participation (participating in decision-making in the work situation), relationships with colleagues (i.e. counting on colleagues when difficulties arose) and the supervisor (i.e. counting on the supervisor when faced with difficulties and feeling appreciated by the supervisor), and contact possibilities at work (i.e. having contact with colleagues during working hours). Advancement included remuneration (being paid a good salary which is sufficient considering the work that a teacher does), and career possibilities (having the possibility to progress financially, to follow training programmes and to be promoted).

Regarding positive affect, one factor was extracted. Positive affect was made up of items referring to confluence, optimism, self-esteem, self-efficacy, social support, social interest, freedom, energy, cheerfulness and thought clarity. As far as ill-health is concerned, two factors, which represent the main outcomes of burnout, namely physical and psychological ill-health were extracted. Organisational commitment, which was found to be a one-factor construct, refers to the extent to which teachers enjoy working for the organisation and not seeking a job elsewhere, take interest in the running and success of the organisation, are proud of and happy with the organisation and feel that it is worthwhile to work hard for it.

Regarding the negative aspects of work-related well-being, the structural model showed that job demands (i.e. pace and amount of work, mental load and emotional load) and a lack of resources (i.e. unfavourable task characteristics, poor structure and relationships as a lack of advancement) lead to burnout (i.e. exhaustion and mental distancing). As hypothesised in the JD-R model (Demerouti et al., 2001), excessive job demands lead to exhaustion (and incapability to perform), while a lack of job resources leads to mental distancing (unwillingness to perform). Furthermore, burnout mediated the relationship between job demands and physical and psychological ill-health. The results also confirmed that positive

affect, which is one aspect of employees' happiness, moderates the effects of job demands and a lack of resources on burnout and ill-health (Cropanzano & Wright, 2001). Based on the findings of Headey and Wearing (1991), it seems plausible that job demands and a lack of job resources contribute to lower positive affect, which suppress approach-oriented strategies (Watson, 2002). It can be concluded that these variables, as well as the interactions among them, lead to an incapability and unwillingness of teachers to perform.

Regarding the positive aspects of work-related well-being, the structural model showed that job resources and positive affect lead to work engagement (i.e. vigour and dedication). Although job resources, such as task characteristics, facilitative structures and supportive relationships and advancement have strong effects on work engagement, it seems that the effect of these resources depends on the level of positive affect of an individual. In addition, work engagement mediated the relationship between job resources and organisational commitment.

In conclusion, the results of this study support the COBE model (Schaufeli & Bakker, 2004), which assumes two psychological processes, namely an energetic and a motivational process. The energetic process links job demands with health problems via burnout. The motivational process links job resources via work engagement with organisational outcomes. Job resources may play either an intrinsic motivational role (by fostering the employee's growth, learning and development), or they may play an extrinsic motivational role (by being instrumental in achieving work goals).

7.2 LIMITATIONS

Firstly, the use of a cross-sectional design in the present research constitutes a limitation. Despite the use of advanced statistical techniques such as structural equation modelling, no causal inferences could be made with regards to the relationships between the constructs used in the present study. At best, these relationships could only be analysed and described, not established. Therefore, the establishment of relationships in the present study serves only to set up certain patterns consistent with previous theoretical research regarding the chronological relationships of the different variables being studied. Strictly speaking, the reference to causal relationships, as suggested in the present study, would be incorrect. It is therefore possible that the independent variables in the present study could be classified as

symptoms of burnout, work engagement and occupational stress, rather than antecedents. However, longitudinal research seems to point to the fact that certain job characteristics, such as job demands, seem to demonstrate mainly a causal relationship in health outcomes, with the associated outcomes appearing only after the process of appraisal of the situation (Schaufeli & Buunk, 2002). Consequently future longitudinal and quasi-experimental designs are needed not only to validate hypothesised causal relationships between antecedents and possible consequences of constructs such as burnout, engagement and occupational stress, but also to expand our knowledge in terms of the inclusion of other variables in the study of human well-being.

A second limitation of the present research was the sample size. Although questionnaires were distributed to 5000 teachers, only 1177 (23,54%) responded. This might have significant limitations in terms of the generalisation of the findings to the total study population. Future studies could benefit in terms of a stratified random-sample design, which would ensure sufficient representation of the different groups in the total population.

A third limitation of this study is its reliance solely on self-report measures. According to Schaufeli, Enzmann and Girault (1993), the exclusive use of self-report measures in validation studies increases the likelihood that at least part of the shared variances between measures may be attributed to method variance. However, a review of self-report measures regarding perceptions and affective reactions to jobs and work environments revealed little evidence of common method variance (Spector, 1987). Similarly, other researchers have demonstrated that even if interactions between the constructs are found, they pose no real threat with regard to the findings obtained (Dollard & Winefield, 1998; Wall, Jackson, Mullarkey & Parker, 1996).

Another dimension to this argument is the relatively small number of alternative methods available in the place of self-report measures. However, research should aim to develop more objective means of measuring job characteristics, environmental aspects and the perceptions around these. In this regard, Dolan (1995) proposes that a multivariate approach be taken in the study of burnout and engagement by including numerous associated variables inherent to the job, the environment and the individual (e.g. individual traits).

7.3 RECOMMENDATIONS

7.3.1 Recommendations to solve the research problems

In general, the first step in succeeding with the enhancement of work wellness is to create and stimulate awareness at all levels of the organisation regarding the image of the work wellness phenomenon as a portrait by the employees of this specific organisation. Of importance will be the definition of wellness, its effects and implications, the causes and symptoms of unwellness, as well as processes and procedures to enhance employee wellness. Unconditional buy-in from both management and employees is of the utmost importance in order to make such a programme and planned interventions viable and not only a window-dressing exercise. Skills should be expanded to enable both management and employees to identify both wellness and unwellness, and to take proactive action not only to prevent undue harm to both the employee and the organisation, but also to promote work wellness in general. In order to promote the overall wellness of teachers it is important for burnout and strain to be carefully managed, and emphasis needs to be placed on enhancing the positive aspects of wellness, like engagement.

In order for interventions to be effective in the long run, Schaufeli and Bakker (2004) recommended that these individual-based programmes be supported by organisation-based programmes. Organisational development interventions in general, but also interventions aimed at influencing the values and culture of the organisation specifically, should be considered. Work-oriented interventions aim to improve the fit between an individual and the workplace. Worker-oriented interventions aim at teaching employees to deal more effectively with experienced stress, or to modify their appraisal of a stressful situation, so that the perceived stress threats are reduced. If the physical and psychological stressors especially are allowed to continue unattended to, the organisation can expect to find negative costs associated with continued, elevated levels of stress, such as burnout, absenteeism, employee turnover and lowered levels of service.

Secondary level interventions can be implemented to prevent employees and specific groups who are already showing signs of stress from getting sick and to increase their coping capacity. Examples of this strategy would include coping strategies especially with regard to dealing with change and transformation, cognitive restructuring, relaxation techniques and

physical activity enhancement programmes, techniques such as self-monitoring, self-assessment, didactic stress management, promotion of a healthy life-style, conflict resolution and emotional- and psychological support. Stress management programmes that use a cognitive-behavioural approach are also effective in reducing stress reactions, such as burnout (Schaufeli & Enzmann, 1998). Tertiary level stress management interventions would be employed in the rehabilitation of individuals who have suffered ill health or reduced well-being as a result of strain in the workplace.

It is also recommended that the institution should provide adequate resources (physical as well as managerial support) for the employees to elevate their engagement levels. As identified by Wilson (1996, p.1), 'an unmet need can frustrate an employee and will continue to influence their behaviour until it is satisfied; managers can therefore effectively work with an employee by identifying the level of need which he or she is trying to satisfy and by attempting to build opportunities in the work environment that will allow them to satisfy their own needs'.

Based on the results of this study, it is recommended that the MBI-GS including the Depersonalisation subscale of the MBI-ES be used to assess burnout of teachers. However, item 13 and 18 should be omitted when administering the questionnaire. Interventions should be planned to manage the work-related well-being of teachers. According to Kompier and Kristensen (2001), primary interventions may, in the first place, be directed at either the work situation or the coping capacity of the employee.

Primary, intermediate, combined and secondary educational institutions should attend to the work-related well-being of their staff. The results suggest that interventions aimed at decreasing the workload of teachers should cause a decrease in experienced exhaustion (incapability) and cynicism (unwillingness). Secondly, interventions aimed at job resources could contribute to lower exhaustion and cynicism and higher vigour and dedication. Specific areas of intervention include management, employee relations, rewards and job design. Thirdly, interventions directed at increasing positive affect should be implemented and/or maintained. Specific interventions include cognitive-behavioural therapy and personal efficacy training.

On the secondary and tertiary levels interventions could be implemented to help teachers to raise their levels of positive affect (Watson, 2002). Positive affect could be raised by helping individuals to focus outwardly and engaging their environment through socialising and interpersonal behaviour as well as exercise and physical activity. Furthermore, they should strive after goals they regard as important (rather than attaining goals). Monitoring of moods and becoming sensitive towards internal rhythms will help them to maximise feelings of efficacy and enjoyment, and minimising stress and frustration.

7.3.2 Recommendations for future research

Although this study found the MBI-GS including the Depersonalisation subscale of the MBI-ES to be reliable and confirmed the three-factor structure, it is suggested that future research should focus on the new teacher burnout conceptualisation to verify the current findings. In future studies, structural equation modelling could be used to test the construct equivalence of the new teacher burnout conceptualisation for different language groups in South Africa. Future studies should also investigate the relationship between cynicism and/or depersonalisation and particular job characteristics and work-related outcomes, such as organisational commitment, job satisfaction, turnover and absenteeism.

Clearly, further construct validity research is needed to establish more fully the factorial validity of the UWES. None of the solutions could be regarded either as effectively confirming the authors' proposed three-subscale structure, or as an adequate replication of the factor structures found in their studies (Schaufeli et al., 2002). Individual items of the UWES may need to be carefully examined when they are used in South African samples. According to the results obtained in this study, the use of the UWES is recommended to assess engagement of teachers in the North West Province of South Africa. However, if the UWES are going to be used items 12, 16 and 17 should be omitted from the questionnaire in a multicultural context or rewritten in a more acceptable South African language format due to semantic problems. It is also suggested that future research could focus on use of the UWES with teachers in the other provinces in the South Africa to verify the current findings in terms of inequivalence and bias, as was the case in the present study

It also seems important to work towards improving the UWES for South African circumstances by identifying a core set of items that could most validly measure the concept

of work engagement (Storm & Rothmann, 2003). Other suggestions regarding further research involves determining the reliability and validity of the UWES in other occupations in South Africa, to establish norms for engagement levels other than teachers. Future studies should use large samples and adequate statistical techniques (e.g. structural equation modelling). Large sample sizes might provide increased confidence that study findings would be consistent across other similar groups.

Future studies should also focus on longitudinal designs where interferences in terms of cause and effect could be made regarding stressors, burnout, engagement, commitment and strain.

Given the pervasive nature of occupational stress, this study is a first step toward the validation of the ASSET as an organisational stress screening tool that can be used in schools in South Africa. As such, the current study only considered teachers in the certain districts in the North West Education Department and it is recommended that the study be expanded to all the other districts in the North West Province as well as in the other provinces over South Africa as well as including similar samples in private and special schools in South Africa. Further refining and testing of the ASSET are needed. In stress research in general it is important to take a holistic approach in terms of stress and strain of the employee (Cooper, Dewe & O'Driscoll, 2001) in order to minimise the negative spin-offs of occupational stress.

In terms of assessment, validated cut-off points with regard to the measurement of burnout, engagement and occupational stress are lacking due to insufficient South African norms for the MBI, the UWES and the ASSET. This problem makes the early detection of burnout, engagement and occupational stress very difficult. With regard to the MBI, the lack of clinically validated cut-off points is a burning issue which would facilitate the distinction between burnout and clinical conditions, where continuation of normal functioning is severely influenced. Future research in South Africa should focus on determining a clinical profile for burnout to establish validated cut-off points and distinguish burnout from other clinical conditions. Research in other occupational settings in South Africa is urgently needed to serve as norm-group in terms of measurement levels of these aspects.

The operationalisation of the instruments used in this research is another aspect which justifies further research. In terms of the operationalisation of the MBI specifically, mounting criticism against the predominant use of negatively phrased items has been voiced in the

literature. Recently, the psychometric properties of the MBI-GS were increased by the addition of the Disengagement subscale of the Oldenberg Burnout Inventory (OLBI) to the existing scales of the MBI-GS (Demerouti, Bakker, Vardakou & Kantas, 2002). In terms of future research, it is suggested that studies should focus on the inclusion of positively phrased items to the existing subscales of the MBI.

To date, little is known regarding wellness, seeing that the era of positive psychology, introduced by Seligman and Csikszentmihalyi (2000), is still very young. The present study tried to form a picture of a balanced view on employee wellness by including the two antitheses, namely burnout and engagement, in a comprehensive wellness audit. Currently little is known with regard to the prevalence and dynamics of work engagement, in stark contrast to the knowledge of the development of negative work-related attitudes and behaviours, such as burnout and occupational stress. In terms of future research, the development of a causal model of wellness for teachers in South Africa, and possibly also the rest of Africa, can make a valuable contribution to positive psychology. Future studies should also aim to make use of larger and more representative samples. The results of this study not only need to be validated in future studies, but also should be expanded to other occupations in order to further refine and increase our understanding of work wellness. Research should also be conducted to evaluate the effectiveness of interventions to enhance teacher wellness.

REFERENCES

- Byrne, B.M. (2001). *Structural equation modelling with AMOS: Basic concepts, applications and programming*. Mahwah, NJ: Erlbaum.
- Clark, L.A. & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological Assessment*, 7, 309–319.
- Cooper, C.L., Dewe, P. & O'Driscoll, M. (2001). *Organizational stress: A review of critique of theory, research and applications*. Thousand Oaks, CA: Sage.
- Cropanzano, R. & Wright, T.A. (2001). When a "happy" worker is really a "productive" worker: A review and further refinement of the happy-productive worker thesis. *Consulting Psychology Journal: Practice and Research*, 53, 182–199.
- Demerouti, E., Bakker, A.B., Vardakou, I. & Kantas, A. (2002). The convergent validity of two burnout instruments: A multitrait-multimethod analysis. *European Journal of Personality Assessment*, 18, 296–307.
- Demerouti, E., Nachreiner, F., Bakker, A.B. & Schaufeli, W.B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology*, 56, 499–512.
- Dollard, M.F. & Winefield, A.H. (1998). A test of the demand-control/support model of work stress in correctional officers. *Journal of Occupational Health Psychology*, 3, 243–264.
- Dolan, S.L. (1995). Individual, organizational and social determinants of managerial burnout: Theoretical and empirical update. In R. Crandall & P.L. Perrewe (Eds.), *Occupational stress: A handbook* (pp. 223–238). Washington: Taylor Francis.
- Headey, B. & Wearing, A. (1991). Subjective well-being: A stocks and flows framework. In F. Strack, M. Argyle & N. Schwarz (Eds.), *Subjective well-being: An interdisciplinary perspective* (pp. 49–72). New York: Pergamon.
- Jackson, L.T.B. & Rothmann, S. (2004a). *An adapted model of burnout for teachers in South Africa*. Manuscript submitted for publication.
- Kammann, R. & Flett, R. (1983). Affectometer 2: A scale to measure current level of general happiness. *Australian Journal of Psychology*, 35, 259–265.
- Kompier, A.J. & Kristensen, T.S. (2001). Organizational work stress interventions in a theoretical, methodological and practical context. In J. Dunham (Ed.), *Stress in the workplace: Past, presence and future* (pp.19–33). London: Whurr Publishers.
- Naude, J.L.P. (2003). *Occupational stress, coping, burnout and work engagement of emergency workers in Gauteng*. Unpublished doctoral thesis, PU for CHE, Potchefstroom.

- Nunnally, J.C. & Bernstein, I.H. (1994). *Psychometric theory* (3rd ed.). New York: McGraw-Hill.
- Salanova, M., Llorens, S., García-Renedo, M., Burriel, R., Bresó, E. & Schaufeli, W.B. (in press). *Are cynicism and depersonalization different dimensions of burnout?*
- Schaufeli, W.B. (2003). Past performance and future perspectives of burnout research. *South African Journal of Industrial Psychology*, 29(4), 1–15.
- Schaufeli, W.B. & Bakker, A.B. (2003). *Utrecht Work Engagement Scale: Preliminary manual*. Utrecht University: Occupational Health Psychology Unit.
- Schaufeli, W.B. & Bakker, A.B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behaviour*, 25, 1–23.
- Schaufeli, W.B. & Buunk, B.P. (2002). Burnout: An overview of 25 years of research and theorizing. In M.J. Schabracq, J.A.M. Winnubst & C.L. Cooper (Eds.), *Handbook of work and health psychology* (pp. 383–425). Chichester, UK: Wiley.
- Schaufeli, W.B. & Enzmann, D. (1998). *The burnout companion to study and practice: A critical analysis*. London: Taylor & Francis.
- Schaufeli, W.B., Enzmann, D. & Girault, N. (1993). Measurement of burnout: A review. In W.B. Schaufeli, C. Maslach & T. Marek (Eds.), *Professional burnout: Recent developments in theory and research* (pp. 199–215). Washington: Taylor & Francis.
- Schaufeli, W.B., Martinez, I., 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.
- Schaufeli, W.B., Salanova, M., González-Romá, V. & Bakker, A.B. (2002). The measurement of engagement and burnout: A confirmative analytic approach. *Journal of Happiness Studies*, 3, 71–92.
- Schutte, N., Toppinen, S., Kalimo, R. & Schaufeli, W.B. (2000, March). The factorial validity of the Maslach Burnout Inventory – General Survey (MBI-GS) across occupational groups and nations. *Journal of Occupational and Organizational Psychology*, 73, 53–66.
- Seligman, M.E.P. & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist*, 55(1), 5–4.
- Spector, P.E. (1987). Method variance as an artifact in self-reported affect and perceptions at work: Myth or significant problem? *Journal of Applied Psychology*, 72, 438–443.

- Siu, O.L. (2002). Occupational stressors and well-being among Chinese employees: The role of organizational commitment. *Applied Psychology: An International Review*, 5, 527–544.
- Storm, K. & Rothmann, S. (2003). A psychometric analysis of the Maslach Burnout Inventory – General Survey in the South African Police Service. *South African Journal of Psychology*, 33, 219–226.
- Storm, K. & Rothmann, S. (2003). The validation of the Utrecht Work Engagement Scale in the South African Police Services. *South African Journal of Industrial Psychology*, 29(4), 62–70.
- Tytherleigh, M.V. (2003). What employers may learn from English higher education institutions: A fortigenic approach to occupational stress. *SA Journal of Industrial Psychology*, 29 (4), 101–106.
- Wall, T.D., Jackson, P.J., Mullarkey, S. & Parker, S.K. (1996). The demands-control model of job strain: A more specific test. *Journal of Occupational and Organisational Psychology*, 69, 153–166.
- Watson, D. (2002). Positive affectivity: The disposition to experience pleasurable emotional states. In C.R. Snyder & S.J. Lopez (Eds.). *Handbook of positive psychology* (pp. 106–119). Oxford: Oxford University Press.
- Weisberg, J. & Sagie, A. (1999). Teachers' physical, mental, and emotional burnout: Impact on intentions to quit. *Journal of Organisational Psychology*, 3, 333–340.
- Wilson, P. (1996). *Job satisfaction: A review of the literature*. Retrieved 12/01/2004, 2004, from <http://www.geocities.com/Paris/cafe/5839/writings/satisfaction.html>