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Stress, coping resources and personality types: an exploratory study of teachers

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This article explores the relationship between the coping resources (as measured by the *Coping Resources Inventory*) and personality types (as measured by the *Myers-Briggs Type Indicator*) of a sample of 49 secondary school teachers in Gauteng. The results indicate that personality types differ in terms of the level of their coping resources and that the participants' personality types have a significant influence on the level of their coping resources. The findings show that it can be helpful for educators and school principals to be sensitive to the different ways in which each personality type copes with stress and the coping resources available to them. Recommendations are made to promote the overall well-being of teachers in the South African school environment.

Stres, hanteringshulpmiddele en persoonlikheidstipes: 'n verkennende studie van onderwysers

Hierdie artikel verken die verband tussen die hanteringshulpmiddele (soos gemeet deur die *Coping Resources Inventory*) en persoonlikheidstipes (soos gemeet deur die *Myers-Briggs Type Indicator*) van 'n steekproef van 49 sekondêre skoolonderwysers in Gauteng. Die resultate dui daarop dat persoonlikheidstipes verskil in terme van die vlak van hanteringshulpmiddele en dat die deelnemers se persoonlikheidstipes klaarblyklik 'n beduidende invloed op beskikbare hanteringshulpmiddele het. Die bevindinge toon dat dit waardevol vir opvoeders en skoolhoofde mag wees om sensitief te wees omtrent die maniere waarop elke persoonlikheidstipe stres hanteer en die hanteringshulpmiddele tot hulle beskikking. Aanbevelings word gemaak vir die bevordering van onderwysers in die Suid-Afrikaanse skoolomgewing se algemene welstand.

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Occupational stress has been recognised as a widespread problem in teachers and has been widely research both nationally and internationally.[1] Survey data indicate that teaching is one of the "high stress" professions, with the majority of teachers reporting above average levels of occupational stress (Dunham & Varma 1998, Kyriacou 2000 & 2001, Ngidi & Sibaya 2002). Cano-Garciá *et al* (2005: 930) state that the data found in studies of occupational stress and burnout in the educational field area are a cause for concern and justify the need for continuing research. Stress leads teachers to significantly express the typical characteristics of burnout such as problems in personal achievement, emotional exhaustion, tendency to depersonalise others and lowered self-esteem (Austin *et al* 2005: 64, Jordaan *et al* 2007). Burnout – a well-known stress-related syndrome among people in the teaching profession – does not emerge suddenly, but develops over a long period of stressful working conditions (Austin *et al* 2005, Jordaan *et al* 2007).

In a study done among black South African teachers Ngidi & Sibaya (2002) found that teachers experience stress in different ways and that the level of stress is associated with the nature of stressors, namely time pressures, poor working conditions, educational changes, administrative problems and pupil misbehaviour. Other common stressors for white and black South African teachers appear to be bureaucracy and an autocratic style of management; lack of management and social support; interpersonal demands; classroom discipline; workload; time pressures; lack of integrated planning and management; compensation; lack of professional recognition, as well as gossip and fellow teachers failing to do their job (Jansen & Coetzee 2007). Furthermore, South African educator school surveys indicate that teachers are overwhelmed by all the reforms that have been introduced since 1994. Some of the factors reported to have a significant impact on the stress levels of teachers are size of classes, workloads, the physical layout of classrooms, learning support materials, equipment and additional administrative duties resulting from outcomes-based education (OBE).

1 Cf Austin *et al* 2005, Betoret 2006, Ngidi & Sibya 2002, Montgomery & Rupp 2005, Schonfeld 2001, Van der Linde 1992, Van Dick & Wagner 2001, Van Zyl & Pietersen 1999.

According to these survey reports, approximately 71% of teachers claim to experience stress with OBE and approximately 62% claim to have high workloads (Stofile & Green 2007: 59).

The incidence of teacher stress and burnout has led to a renewed interest in the identification of variables believed to mediate between stressors and their psychological and physical consequences (Austin *et al* 2005, Jordaan *et al* 2007, Storm & Rothmann 2003). Furthermore, there is a plethora of research on the different sources of stress and their consequences for teachers. Researchers have used various methods to explain the intricate relationships between the sources of psychological stress and other intricately related constructs such as coping mechanisms, personality traits, emotional responses, environmental effects, and burnout (Montgomery & Rupp 2005: 459).

This article explores the relationship between teachers' coping resources (as measured by the *Coping Resources Inventory*) and personality type (as measured by the *Myers-Briggs Type Indicator*) as two variables that play a mediating role in the coping process. Few studies have been conducted on these two variables in the educational field, and no attention has been paid to these in the South African school environment. The findings of this research may prove to be useful for educators and school principals in understanding the resources and characteristics innate in individual teachers that enable them to handle stressors in the school environment more effectively, to experience fewer or less intense symptoms upon exposure of a stressor, and to recover faster from exposure to stress. Such an understanding will help to design interventions aimed at helping teachers to manage stress and reduce its harmful effects.

1. Stress

Physical or psychological stressors in the school environment create stress or the potential for teacher stress when a teacher perceives these stressors as representing a demand that exceeds his/her ability to respond. Teacher stress is most commonly regarded as the experience by a teacher of unpleasant, negative emotions (such as anger, anxiety, tension, frustration or depression), resulting from a certain aspect of

his/her work. Negative emotional experiences are generally triggered by teachers' perception that their work situation constitutes a threat to their self-esteem or well-being (Kyriacou 2001: 28). The term stress has also been used to refer to the level of pressure and demands made on the individual. In this regard, Slocum & Hellriegel (2007: 448) define stress as the agitation, feeling of anxiety, and/or physical tension that occurs when the demands placed on the individual are believed to exceed that person's ability to cope. The notion of teacher burnout has also been closely related to teacher stress and is defined as a state of emotional, physical and attitudinal exhaustion that may develop in teachers who have been unsuccessful in coping effectively with stress over a long period of time (Austin *et al* 2005: 64).

Various factors influence an individual's experience of stress. According to Slocum & Hellriegel (2007: 449), the four primary factors are the person's perception of the situation; the person's past experiences; the presence or absence of social support, and individual differences – such as motivation, attitudes, personality and abilities – in reacting to stress. Lazarus & Folkman (1984) claim that when confronted by a given event an individual engages in a process of primary appraisal in which s/he may regard the event as stressful or benign, depending on the individual and the situation. The individual will then engage in a process of secondary appraisal in which s/he will engage in the cognitive evaluation of his/her personal and environmental resources or capacity to deal with the stressful event. Both types of appraisals are cognitive processes that depend to a large extent on the appraising individual.

In addition, individuals also use cognitive and behavioural strategies of adaptation to deal with a given stressful event (Montgomery & Rupp 2005: 461). Teachers' coping strategies are usually classified as direct action strategies and palliative strategies (Austin *et al* 2005, Kyriacou 2001). Direct action techniques refer to the things a teacher can do to eliminate the source of stress. These may involve, for example, managing or organising oneself more effectively, or developing new knowledge, skills and working practices. Palliative techniques are mostly used and may be mental (for example, trying to change one's appraisal of the situation) or physical (for example,

involving activities that help the teacher retain or regain a sense of being relaxed, by relieving any built-up tension and anxiety). Palliative techniques do not deal with the source of stress itself, but instead are aimed at lessening the feeling of stress that occurs (Kyriacou 2001: 30). Seidman & Zager (1991) found that teachers who engage in low-level physical exercise, or who practice meditation and relaxation, and who pursue hobby and vacation activities, experienced lower levels of burnout.

Educational research has also established that high levels of teacher stress are associated with psychological distress, which may be mediated by means of different coping mechanisms and personality traits (Austin et al 2005, Cano-García *et al* 2005, Montgomery & Rupp 2005). The sources of stress experienced by a teacher are generally unique to him/her and depend on the complex interaction between his/her personality, values, skills and circumstances. Moreover, coping mechanisms, personality traits, or the environment can interactively influence the degree to which stressful situations are being perceived, and influence the teacher's emotional and cognitive well-being (Montgomery & Rupp 2005: 461).

The literature also supports the view that an individual's personality traits influence the degree to which s/he seeks social support when confronted by a stressful event (Betoret 2006, Cano-García *et al* 2005, Montgomer & Rupp 2005). Findings by Guglielmi & Tatrow (1998) showed that seeking social support and engaging in successful coping strategies can render a stressful situation less demanding, less threatening, or less harmful to an individual. Griffith *et al* (1999) report findings indicating that both the presence of social support and the use of effective coping behaviour can affect the teacher's perception of stress. Montgomery & Rupp (2005) report results which support the notion that emotional responses, personality mediators, support variables and burnout all play a key role in the way teachers respond to external stressors.

2. Coping resources

In the context of this study, coping resources are regarded as an inherent predisposition towards certain characteristic behaviours, attitudes and beliefs which serve as a set of important resources that mediate the effects of stressful situations. Whereas coping strategies refer to behaviours occurring after the appearance of the stressor or in response to chronic stressors, coping resources refer to those resources inherent in individuals that enable them to handle stressors more effectively, to experience fewer or less intense symptoms upon exposure to a stressor, or to recover faster after being exposed to stressors. In this respect, coping resources act as precursors of behaviour and as background or protective factors to the stress process (Hammer 1988: 2). Coping resources help individuals cope with the negative physiological effects of social or environmental stressors. Consequently, coping resources are considered to be a socio-psychological measure that can reduce the likelihood of stress-induced disease and burnout (Hammer 1988: 2).

Ensel & Lin (1991) classify coping resources as psychological resources or social resources. Psychological resources are those behaviours, characteristics, abilities, values and attitudes possessed by an individual (Hammer 1988) whereas social resources are embedded in the individual's social networks that can provide him/her with support in times of stress (Ensel & Lin 1991, Hammer 1988). Psychological resources include the following:

- Cognitive resources

  These concern the extent to which individuals maintain a positive sense of self-worth, a positive outlook towards others and optimism about life in general.

- Emotional resources

  These concern the degree to which individuals can accept and express a range of affect, based on the premise that a range of emotional responses helps ameliorate long-term negative consequences of stress.

- Spiritual/philosophical resources

  These concern the degree to which an individual's actions are guided by stable and consistent values derived from his/her religious, familial, or cultural tradition or from personal philosophy. These values may define the meaning of potentially stressful events and prescribe strategies that enable the individual to respond effectively.

- Physical resources

  These concern the degree to which individuals enact the health-promoting behaviours believed to contribute to increased physical well-being which is thought to decrease the level of negative response to stress and to enable them to recover faster (Hammer 1988).

The presence of coping resources provides both deterring and coping functions. Psychosocial coping resources allow the individual to maintain self-identity and -esteem. They reduce distress and preserve an individual's psychological and social equilibrium. In this regard, psychosocial coping resources are regarded as valuable assets or protective factors that enable an individual to deal with problematic encounters and experiences, if and when these occur. In other words, when individuals are confronted with stressful conditions and situations, they can draw upon their psychosocial coping resources with stimuli which, if not dealt with, may potentially challenge or threaten the person's survival or wellbeing (Ensel & Lin 1991: 323).

Ensel & Lin (1991) report findings which suggest that social resources safeguard or buffer the negative impact of social stressors on an individual's physical health. In other words, social resources helped individuals cope with the negative physiological effects of social stressors. Psychological resources, on the other hand, had a strong and significant direct (deterring) effect on physical distress and appear to function to enhance subsequent levels of social resources which then function to inhibit distress. In addition, social resources were found to play a primary role in mediating the detrimental effects of social stressors on distress. Social resources also appear to deteriorate with previous high levels of social stressors. Although

they reduce the effect of social stressors on subsequent distress, social resources do not eliminate it altogether as social stressors still have a significant direct impact on subsequent distress. Betoret (2006: 534) argues that when teachers' coping resources are insufficient to overcome the effects of stressors, the result is residual stress. The lack of psychosocial resources predisposes teachers to make unfavourable stress appraisals and to cope poorly with stress (Achwarzer & Greenglass 1999: 241).

3. Personality types

Personality type is defined as the dominant and conscious predisposition to either act or react in a characteristic manner when observing one's outer world and assigning meaning to each experience (Coetzee 2005, Myers *et al* 2003). The concept of personality type is based on Jung's (1921) theory of psychological types according to which predictable differences in individuals are caused by differences in the way they prefer to use their minds to take in information, to organise that information and to draw conclusions. This theory postulates two attitudinal orientations and four basic psychological functions (Jung 1990). The attitudinal orientations comprise introversion (I) and extraversion (E), both of which relate to the individual's focus of attention and flow or psychic energy. The extravert's attention is externally focused, whereas the introvert's is inwardly focused.

The basic psychological functions relate to perceptual functions that mediate the way in which an individual handles information. In perceiving their world, Jung (1990) claimed that people develop one of two dominant preferences in using information, namely sensation (S) or intuition (N). Sensation-dominant people prefer precise, specific data that usually come *via* the senses. By contrast, intuition-dominant people seek holistic information that reflects possibilities; the pattern of data is more important than specific data. Jung (1990) also claimed that people develop one of two dominant ways of judging information in order to reach decisions and take action, namely thinking (T) or feeling (F). Thinking-dominant people stress logic in their reasoning; they generalise and abstract. Feeling-dominant

people stress value judgments in their reasoning; they think of things in human terms and focus on how other people may respond.

Implied in Jung's typology are two additional orientations relating to the way in which individuals approach the outer world in terms of judgment or perception. These were made explicit by Myers (1987), who labelled them as judging (J) and perceiving (P). Judging is described as being related to the evaluation of external stimuli and an orientation to cope with these *via* structure and control. Perceiving is explained in terms of receptivity to stimuli and a tendency to seek to understand and adapt to life (based on external stimuli). By adding the judging-perceiving dichotomy, Jung's model was refined by Briggs & Myers (Myers *et al* 2003) in order to describe 16 personality preference types, measured by the *Myers-Briggs Type Indicator* (MBTI).

For the purposes of this article, only the mental functions (ST, SF, NF, NT) and energy/attitude combinations (IP, IJ, EP, EJ) of the MBTI preferences are important. The dominant-type characteristics are assumed to stem from the preferred use of the four mental functions which are often viewed as an individual's' cognitive styles (Myers *et al* 2003: 40). Higgs (2001) also contends that the dominant mental functions associated with the different personality types offer a more practical basis for statistical analysis. Myers *et al* (2003: 37) state that both the mental functions and the energy/attitude combinations provide researchers and practitioners with practical insights into type dynamics. In practice, it is extremely difficult to obtain a sufficiently large sample of all 16 personality preference types in order to conduct non-parametric statistical analyses.

The Sensing-Thinking (ST) types are described as the practical and matter-of-fact types whose main interest focuses on facts that can be collected and verified directly by the senses – seeing, hearing, touching, counting, weighing and measuring. ST types tend to approach decisions about life events using objective, non-personal and logical processes of reasoning. Seeking personal counselling or social support in times of stress is not a natural way of solving problems for ST types who focus on logically assessing the facts of their decisions. The Sensing-Feeling (SF) types prefer to approach their decisions with a subjectivity based on their personal values system. They tend to be

sympathetic and friendly. When experiencing high levels of stress, ST and SF types tend to lose perspective and are concerned about the future (Myers *et al* 2003). Sensing types typically seek solutions for a specific current problem that can be dealt with immediately. They also tend to see the negative rather than the positive possibilities of a situation when experiencing stress (Quenk 1996).

Intuitive-Feeling (NF) types are described as the enthusiastic and insightful types. They prefer to focus their interests on possibilities concerning people. They are also interested in the complexities of communication and their Intuition (N) and Feeling (F) orientation enables them to use their intuitive insights into human relationships. The personal warmth and commitment with which NF types seek and follow up possibilities tend to make them enthusiastic and insightful. Intuitive-Thinking (NT) types, on the other hand, prefer a non-personal approach to life events by using their intuitive insights in order to pursue technical, scientific, theoretical or executive possibilities. They tend to be logical and ingenious and have an interest in solving complex and challenging problems (Myers *et al* 2003).

When experiencing extreme stress, both the NF and NT types tend to experience profound emotions of personal distress, and both types often have emotional outbursts. Intuitive types tend to be independent and enjoy exploring new possibilities of dealing with their life issues. They may, however, become so caught up in the possibilities that they overlook the practical reality of a situation. In times of stress, NF types find it easy to seek psychological services, emotional and social support, particularly those that support a person-centred approach. NT types tend to be more self-reliant, using their strong preference for logical problem solving to work through their stress experiences (Myers *et al* 2003). Thinking types tend to find it hard to express their emotions and feel inadequate in social situations when experiencing stress. Feeling types become negative and cynical when their goals and values are undermined or ignored. They tend to seek affirmation and approval in times of stress (Quenk 1996).

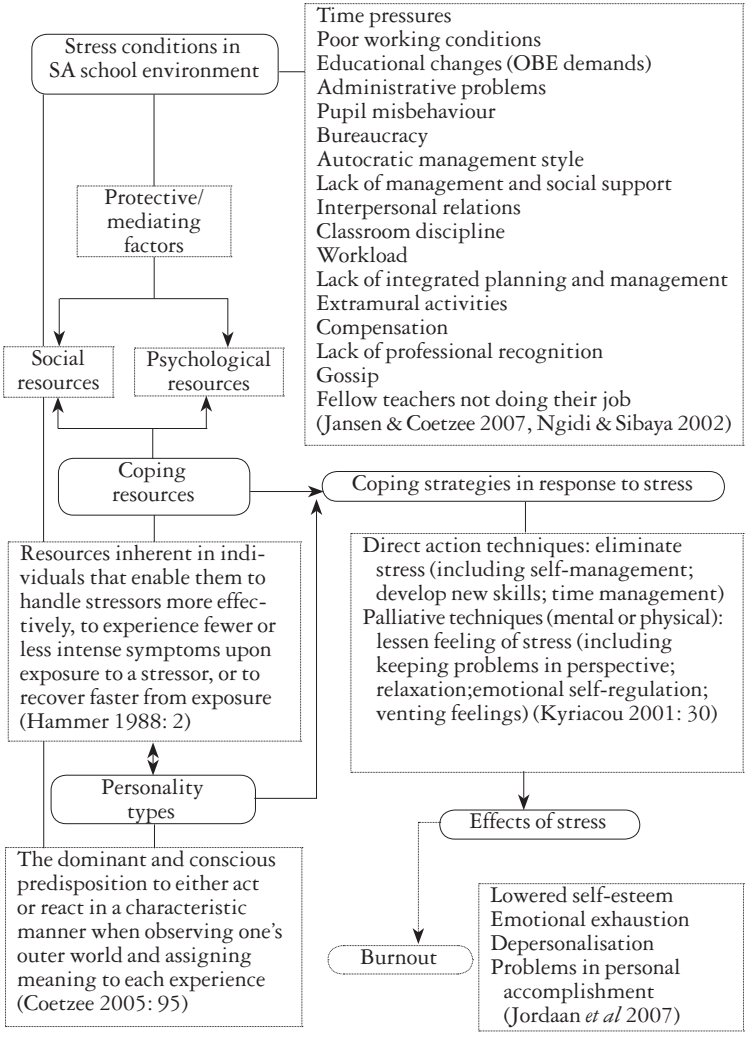
Introverted-Judging (IJ) types are described as decisive introverts. They tend to be introspective, persevering and hard to convince or change, unless compelling data override a decision. Introverted-

Perceiving (IP) types, on the other hand, are introspective and able to adapt to change or new conditions. People with these personality types may resist change when confronted by a situation that affects their logic and values. Extraverted-Perceiving (EP) types are the adaptable extraverts who tend to be active, energetic, optimistic about life in general and sociable. They often seek new experiences and adapt easily to new outer conditions. Extraverted-Judging (EJ) types, the decisive extraverts, are fast moving, decisive and confident; they enjoy "making things happen".

Extraverted types tend to look outwards rather than inwards for an explanation of the events that occur in their lives. When they experience stress, they are more likely to initially blame others or life circumstances for problems rather than examine their own contributions to the problem. Introverts, on the other hand, are more likely to look to themselves for causes of problems rather than to others and the environment (Myers *et al* 2003: 226). Perceiving types view even modest structures as unduly restricting and often experience problems with distraction, procrastination, meeting deadlines and organising their time effectively. Judging types have a high need for structure and order in their lives and find adapting to change stressful. They dislike having their routine being upset. They are more comfortable with clear goals and prescribed timelines (Myers *et al* 2003: 228).

Hammer's (1992) research revealed, not surprisingly, that different types reported different kinds of coping resources. The findings also suggest that daily stresses have different effects on different types and that some types are more naturally reactive to (willing to acknowledge) stress than others. Figure 1 gives an integrated overview of the theoretical relationship between stress, coping resources and personality types.

Figure 1: Integrated model of stress, coping resources and personality types



In the light of the literature review discussed above, it can be hypothesised that people with a preference for using a particular dominant mental function and preferred energy/attitude orientation may also differ in terms of the resources upon which they draw when they have to cope with stress. More specifically, some personality types may have more resources than others and thus be better at coping with stressful conditions in their social environment.

4. Research design

4.1 Research approach

For this exploratory pilot study, a survey design was used to achieve the research objective (Shaughnessy & Zechmeister 2003: 140). Each participant was measured at a particular point in time in terms of the two constructs by applying the various measuring instruments. The relationship between the measurements was then determined. The advantages of using a survey research approach include savings in time and money, lack of interviewer bias, obtaining accurate results, more privacy for participants, and the fact that samples need not be very large (Salkind 1997: 202). The major disadvantage of this design is that findings can only be generalised to the sampled population at the time of the survey (Dooley 1995: 125).

4.2 Participants

The participants were a convenience sample from a secondary school in Gauteng. The total sample of 49 teachers constituted 76% white and 24% black subjects, while females represented 73% of the sample. The age groups <35 (43%) to 45 years (31%) constituted 74% of the sample while the age group 46 and older constituted 26% of the sample. In terms of marital status, 20% of the participants were single; 63% married; 5% widowed and 12% separated or divorced. Approximately 63% of the sample had less than 5 years' service experience as a teacher and 37% had more than 5 years' teaching experience. Sixty one percent (61%) of the sample reported above average levels of stress and only 39% reported low stress. Overall, 92% of the teachers reported good physical health.

In terms of the energy and attitude orientation, the extraversion-judging personality type was predominant in this sample (EJ 37%), followed by the introversion-judging personality preference (IJ 31%). Overall, the extraversion-perceiving (EP 10%) personality type was underrepresented in this sample. The introverted and judging types were predominant in the sample (I 53%; J 68%). The extraverted types constituted 47% and the perceiving types constituted 32% of the sample. In terms of whole types, 12 of the 16 MBTI personality preferences were represented by the sample: ESFJ (N=10); INFP (N=7); INFJ (N=7); ISFJ (N=6); ESTJ (N=5); ENFJ (N=3); ENFP (N=2); ESTP (N=2); ISTP (N=2); INTP (N=2); INTJ (N=2); ENTP (N=1).

In terms of the mental functions, the feeling types were predominant (F 72%). The intuitive feeling (NF) types represented 39% and the sensing-feeling types (SF) 33% of the sample. The thinking types were underrepresented (T 28%). Of the thinking 10% were intuitive thinking types (NT) and 18% were sensing-thinking types (ST).

4.3 Measuring instruments

Two measuring instruments were used, namely Hammer's (1988) *Coping Resources Inventory* (CRI) and the *Myers-Briggs Type Indicator*, Form M (MBTI) (Myers & Myers 1998). In addition, a biographical questionnaire was designed to obtain relevant biographical information from the sample of participants.

4.4 *Coping Resources Inventory* (CRI)

The CRI uses a four-point Likert scale to measure an individual's coping resources. High scores indicate that the individual being assessed has many resources for handling stressors effectively, will experience fewer or less severe symptoms upon exposure to a stressor, and will recover more rapidly from exposure to stress. Low scores indicate areas for improvement and potential symptoms of stress because higher resources are associated with fewer symptoms (Hammer 1988: 2, 8 & 15).

The CRI consists of five sub-scales and 60 items: the cognitive sub-scale (9 items); the social sub-scale (13 items); the emotional sub-scale (16 items); the spiritual/philosophical sub-scale (11 items)

(the content domain of this sub-scale is broader than traditional Western religious definitions of spirituality), and the physical sub-scale (11 items) (Hammer 1988).

Validity studies on the CRI appear to justify the many underlying constructs of the five sub-scales. Hammer (1988) reports Cronbach *alpha* coefficients and test-retest reliability varying from 0.71 (physical); 0.77 (cognitive); 0.79 (social); 0.80 (spiritual/philosophical) to 0.84 (emotional). As the CRI has not been standardised for South African populations, scale reliability tests were conducted for the sample group. The scale reliability tests yielded Cronbach *alpha* coefficients varying from 0.68 (cognitive); 0.71 (spiritual/philosophical); 0.73 (physical); social (0.81) to 0.83 (emotional). The scale reliability as such was considered acceptable.

4.5 *Myers-Briggs Type Indicator*, Form M (MBTI)

The MBTI, Form M, was used for this research project to measure the participants' personality types. The MBTI, Form M has been standardised for South African populations (Myers *et al* 200) and is a self-reporting instrument consisting of three parts. Part I contains 26 items; part II, 47 items and part III, 20 items. Overall, the individual has to respond to 93 items. The MBTI is a questionnaire-style instrument consisting of items arranged in a forced-choice format. For each item, subjects have two responses to choose from. The objective of the MBTI is to classify an individual into one of the 16 personality types (Myers *et al* 2003).

While views differ regarding aspects of the validity of the MBTI, there is general agreement on its high levels of face validity (Myers *et al* 2003: 160). In presenting reliability results in the MBTI manual, Myers *et al* (2003) examined the internal consistency reliability of the Form M scales (continuous scores based on logical split-half correlations and coefficient *alpha*), none of which are below 0.8 for the MBTI Form M scales. Test-retest reliabilities are shown to be high with consistency over time.

5. Research procedure

In the light of ethical considerations, all teachers from the school were invited to voluntarily participate in the coping resources and personality type surveys. Since both the CRI and MBTI items are self-explanatory, no specific training on the instruments was provided to the subjects. The process applicable to the completion of the questionnaires was also explained to the participants. Confidentiality and anonymity were guaranteed. Upon completion of the questionnaires and the interpretation of the results, feedback was given to the participants on their personal profiles. The questionnaires were scored electronically.

5.1 Statistical analysis

The statistical procedures chosen for this research were based on their applicability to the exploratory nature of the research design. The statistical analysis was carried out with the help of the SAS System, Version 9.1, statistical package (SAS 2003). Descriptive statistics were used to analyse the data. Pearson product-moment, point biserial and Spearman correlation coefficients were used to specify the relationships between the variables. Since the MBTI personality type scores are regarded as dichotomous data in this research, and the scores of the CRI are regarded as scale or continuous variables, point biserial correlations were chosen as the appropriate statistical procedure to investigate the relationship between the MBTI personality types and the CRI scales. Point biserial correlation is calculated as a special case of Pearson's product-moment correlation coefficient (Higgs 2001, Lowry 2000-09, Norusis 1994). A cut-off point of $p<0.05$ was set for determining the significance of the findings.

One-way analyses of variance were conducted to investigate the effect of the significance of the indicated relationships between the variables. The general 0.05 significance level was also chosen for the ANOVA analysis. The nature of the established significant dependencies between the CRI scales and the MBTI personality types was determined by conducting multiple comparison of means tests.

6. Results

Table 1 shows the descriptive statistics relating to the biographical variables relevant to this study. It is evident from Table 1 that the participants have overall high resources, with the exception of the physical coping resource. The highest coping resources are the spiritual/philosophical, the social and the cognitive resources. The female participants who predominate in this sample appear to have higher overall coping resources and significantly higher social and emotional resources than the male participants. In terms of race, the white participants show higher overall coping resources and higher social and emotional resources than the black participants. The spiritual/philosophical coping resource appears to be of the same magnitude for both gender and race groups. Other descriptive statistics related to age, years of experience, health and marital status are not reported in Table 1 because the means are of the same magnitude. This implies that these variables do not appear to have a substantial effect on participants' coping resources.

Table 1: Means of sample biographical information on CRI (N=49)

CRI Sub-scale	Mean	*SD*
Total sample (N=49)		
Cognitive	3.18	0.39
Social	3.30	0.42
Emotional	3.03	0.42
Spiritual/Philosophical	3.38	0.32
Physical	2.56	0.46
Total	3.09	0.40
Males (N=13)		
Cognitive	3.14	0.44
Social	3.12	0.42
Emotional	2.77	0.36
Spiritual/Philosophical	3.35	0.39

Physical	2.68	0.39
Total	3.01	0.40
Females (N=36)		
Cognitive	3.20	0.38
Social	3.37	0.41
Emotional	3.12	0.41
Spiritual/Philosophical	3.39	0.30
Physical	2.52	0.48
Total	3.12	0.40
Whites (N=37)		
Cognitive	3.19	0.38
Social	3.35	0.42
Emotional	3.10	0.42
Spiritual/Philosophical	3.39	0.29
Physical	2.52	0.47
Total	3.11	0.40
Blacks (N=12)		
Cognitive	3.17	0.45
Social	3.16	0.42
Emotional	2.80	0.36
Spiritual/Philosophical	3.36	0.41
Physical	2.70	0.40
Total	3.04	0.41

Table 2 shows that the NF types reported overall higher coping resources than the ST, SF and NT types and higher social coping resources, in particular. The ST types reported the lowest overall coping resources. Table 3 shows that the IJ and IP types reported higher overall coping resources than the EJ and EP types. The EJ types reported particularly high spiritual/philosophical resources and while both the IJ and IP types show high social coping resources, the IJ

types, in particular, reported higher social coping resources than the other types. The EP types reported the lowest social resources and both the EP and IP types reported lower emotional coping resources than the other types.

Table 2: Means of MBTI mental functions on CRI (N=49)

MBTI Types	CRI Sub-scale	Mean	SD
ST (N=9)	Cognitive	3.05	0.38
	Social	2.98	0.38
	Emotional	2.76	0.38
	Spiritual/Philosophical	3.28	0.50
	Physical	2.57	0.23
Total		2.93	0.37
SF (N=16)	Cognitive	3.08	0.44
	Social	3.25	0.48
	Emotional	3.02	0.46
	Spiritual/Philosophical	3.35	0.29
	Physical	2.49	0.53
Total		3.04	0.44
NF (N=19)	Cognitive	3.30	0.35
	Social	3.50	0.29
	Emotional	3.20	0.34
	Spiritual/Philosophical	3.44	0.28
	Physical	2.55	0.47
Total		3.20	0.35
NT (N=5)	Cognitive	3.33	0.33
	Social	3.26	0.41
	Emotional	2.91	0.48
	Spiritual/Philosophical	3.40	0.08
	Physical	2.84	0.47
Total		3.15	0.35

Table 3: Means of MBTI energy/attitude orientations on CRI (N=49)

MBTI Types	CRI Sub-scale	Mean	SD
IJ (N=15)	Cognitive	3.25	0.34
	Social	3.59	0.21
	Emotional	3.24	0.34
	Spiritual/Philosophical	3.30	0.25
	Physical	2.55	0.61
Total		3.19	0.35
IP (N=11)	Cognitive	3.33	0.27
	Social	3.42	0.34
	Emotional	2.98	0.43
	Spiritual/Philosophical	3.37	0.31
	Physical	2.60	0.36
Total		3.14	0.34
EP (N=5)	Cognitive	2.89	0.26
	Social	2.83	0.30
	Emotional	2.68	0.42
	Spiritual/Philosophical	3.36	0.51
	Physical	2.56	0.27
Total		2.86	0.35
EJ (N=18)	Cognitive	3.12	0.48
	Social	3.12	0.44
	Emotional	3.10	0.43
	Spiritual/Philosophical	3.45	0.33
	Physical	2.55	0.43
Total		3.07	0.42

The first step in analysing the data was to explore how the CRI sub-scales related to the various MBTI personality types (as represented by the four mental functions ST, SF, NF, NT and the energy/

attitude orientations combinations IJ, IP, EJ, EP) and the biographical variables of gender, age, race, years of experience and stress levels.

The results of the Pearson product-moment (including the point-bi serial correlations) and Spearman correlations are shown in Tables 4 and 5, respectively. In terms of the biographical variables, a significant positive association is observed between gender and race regarding the emotional CRI scale. Health shows a positive association with the cognitive CRI scale, while marital status shows a positive association with the emotional CRI scale. Years of experience shows a positive association with the emotional and spiritual/philosophical CRI scales.

Closer inspection of Tables 4 and 5 also shows a significant positive association between the Extraversion-Introversion (E-I) and Sensing-Intuition (S-N) MBTI scales and the cognitive and social CRI scales. On the other hand, the Feeling-Thinking (T-F) MBTI scale shows a significant negative association with the social and emotional CRI scales. The four MBTI mental functions (ST, SF, NF, NT) also show a positive association with the cognitive and social CRI scales. The MBTI energy/attitude orientations (IP, IJ, EP, EJ) show a significantly negative association with the social CRI scale.

Table 4: Product-moment correlation coefficients between the CRI and MBTI (N=49)

CRI Sub-scale	EI	PJ	SN	TF	Gender	Race	Stress
Cognitive	0.28*	-0.02	0.31*	-0.05	0.07	0.02	-0.08
Social	0.55****	0.11	0.35	-0.33*	0.25	0.19	0.02
Emotional	0.26	0.24	0.25	-0.33*	0.37**	0.32*	0.11
Spiritual/ Philoso-phical	-0.16	0.02	0.17	-0.11	0.06	0.04	-0.18
Physical	0.02	-0.04	0.10	0.14	-0.16	-0.17	-0.24

****$p<0.0001$ ***$p<0.001$ **$p<0.01$ *$p<0.05$

Table 5: Spearman correlation coefficients between the CRI and MBTI (N=49)

CRI Sub-scale	Age	Health	Marital	Experience	MBTI mental functions	MBTI energy/ attitude orientation
Cognitive	0.07	0.32*	0.07	0.06	0.29*	-0.15
Social	0.04	0.15	0.05	0.23	0.32*	-0.50***
Emotional	0.13	0.11	0.30*	0.30*	0.25	-0.27
Spiritual/ Philoso-phical	0.24	0.05	0.14	0.29*	0.10	0.24
Physical	-0.08	0.23	-0.07	-0.14	0.10	-0.00

****$p<0.0001$ ***$p<0.001$ **$p<0.01$ *$p<0.05$

Analyses of variance tests were conducted in terms of only those variables that showed significant associations to investigate the effect of the significance of the indicated relationships between the identified variables. None of the biographical variables showed any significant results in terms of the ANOVA analyses. The results of the analyses of variance for the CRI sub-scales and four mental functions of the MBTI personality types (ST, SF, NF, NT) and the energy/ attitude orientations combinations (IJ, IP, EJ, EP) showed that the MBTI mental functions have a significant effect on the social CRI scale (social: $p \leq 0.02$), whilst the MBTI energy/attitude orientations have a significant effect on both the social and emotional CRI scales (social: $p \leq 0.0001$; emotional: $p \leq 0.05$).

A multiple comparison of means tests was conducted to establish the nature of the established significant dependencies between the CRI scales and the MBTI personality types. The key results, summarised in Table 6, show the significant differences between the means of the NF and ST types, with the NF type having a significant higher mean than the ST types on the social CRI scale. The EP types show a significantly lower mean than the IJ and IP types on the social CRI scale. A similar observation is made in terms of the emotional

CRI scale where the EP types show a significantly lower mean than the IJ types on this scale.

Table 6: Summary of significant differences: CRI and MBTI

MBTI	CRI	Means	SD	N	Significance level
Mental functions	Social	NF: 3.502 ST: 2.983	0.29 0.38	19 9	*
Energy/attitude orientations	Social	IJ: 3.590 EP: 2.831	0.21 0.30	15 5	****
	Social	IP: 3.420 EP: 2.831	0.34 0.30	11 5	****
	Emotional	IJ: 3.238 EP: 2.675	0.34 0.42	15 5	*

**** $p \leq 0.0001$

*** $p<0.001$

** $p<0.01$

* $p<0.05$

7. Discussion

The objective of this study was to establish whether teachers' coping resources depended upon their personality type. In general, the findings indicate that the participants differ in terms of the level of their coping resources and that their personality types appear to have a significant influence on the level of their coping resources.

In interpreting the results, the following biographical characteristics of the sample were borne in mind. The participants were all relatively young, predominantly white, married females with less than five years' teaching experience. This could explain the above average level of stress reported by the sample. Stofile & Green (2007: 59) point out that South African teachers are generally not well equipped with the relevant skills, knowledge and experience they need to deal with the challenges and expanded teacher roles presented by the OBE

system. The teaching profession's inability to deal with the demands and challenges of OBE has led to job dissatisfaction and above average levels of stress in the South African school environment.

The results indicated a significant association between emotional coping resources and marital status, gender and race. In terms of marital status, the single, married and widowed participants reported overall lower emotional coping resources than the separated/divorced participants. The black male participants also reported lower emotional coping resources than the females. This suggests that the separated/divorced white female participants appear to be more in touch with their feelings and more able to engage in emotional responses that help to improve the long-term negative consequences of stress. Chan & Hui (1995) found that men were more constrained in expressing their emotions and that women had a greater tendency to seek advice and social support.

The participants reported good health and an overall moderate level of coping resources. The findings also indicated a significant association between health and cognitive coping resources. With the exception of the ESFJ, ESTP, ENTP and ISTP types, the types reported overall high social and cognitive resources. These findings suggest that the participants have a well-established supportive social network. It also appears that their ability to maintain a positive sense of self-worth and a positive outlook towards others and life in general contributed to their overall health. On the other hand, the participants' physical coping resources were shown to be the lowest. This could indicate that the participants have little time for physical exercise and relaxation activities, probably because of the high workload experienced by South African teachers in general. Hammer (1988: 15) reports findings which indicate low cognitive and physical coping resources as a significant incremental predictor of symptoms related to stress. While a positive self-concept helps individuals to adapt to stress, physical wellbeing is thought to reduce the level of negative response to stress and to enable people to recover faster.

Overall, the participants reported high spiritual/philosophical coping resources. In interpreting and responding to stressful events, it appears that participants are guided in particular by a strong value

system derived from their religious, familial, cultural traditions or from their own personal philosophy. Research indicates that using religion or a form of spiritual practice as a way of coping with stress is a significant predictor of preventing burnout and, in particular, depersonalisation (Johnson 2001, Jordaan *et al* 2007, Storm & Rothmann 2002). As a coping strategy, religious practice elicits reassuring emotions; it provides strength, control and empowerment as well as social and spiritual support, and it facilitates a sense of meaning and acceptance of the stressful situation (Siegel & Schrimshaw 2002).

The NF and, in particular, the Introverted types (IJ and IP) reported significant higher social coping resources than the ST and EP personality types. These findings are similar to those found by Hammer (1992). Each type showed a different order of typical use of the five coping resources. NF types were found to be high in social resources but low in physical resources. It appears from the findings that individuals who are more inclined to be reflective or introverted in nature, who have a preference for harmonious, cooperative interactions and who have a strong need for empathic and supportive relationships tend to have higher social coping resources than individuals who prefer a non-personal, objective and logical problem-solving approach to life events. The findings also seem to confirm that NF types when compared with ST types have different approaches to life events due to their use of either the Intuitive (N) or Sensing (S) function (Myers *et al* 2003).

There is relative consensus in the literature regarding the importance of social support in alleviating teacher stress and protecting individuals from burnout (Collins 2000, Jordaan *et al* 2007). Research also indicates that teachers with high levels of social resources and support enjoy better physical and mental health (Betoret 2006, Burke & Greenglass 1993, Pierce & Molloy 1990). These findings could imply that the NF types, with their characteristic flair and enthusiasm for creating harmonious relationships, find it easy to build or establish social networks that can provide them with support in times of stress. On the other hand, the ST types who are characteristically more inclined to take an impersonal and logical problem-solving approach to life events are less inclined to form close social networks with others in times of stress. Considering the overall

low coping resources of the ST types, the findings could also suggest that these types, as represented by the participants, experience more stress than the NF types who participated in the study.

Research indicates that Sensing types (ST, SF) have significantly higher levels of stress associated with health and balancing work and home than the intuitive types (NF, NT). Feeling types (SF, NF) were found to have significantly higher levels of stress relating to finances, health and the need to balance home and work demands than thinking types (ST, NT) (Myers *et al* 2003). SF types are also found to rate the highest in a number of stressful areas, with a vulnerability to emotional exhaustion and depersonalised forms of burnout. Sensing-Judging types have also been reported to be high stress types (Myers *et al* 2003: 235).

The findings show that the ESTP, ENFP, ENTP and ISTP types (as represented by the participants) are potentially high-risk individuals as these types reported the lowest overall coping resources. According to Hammer (1988), low coping resources indicate symptoms of stress and individuals who may need intervention to help them increase their coping resources. These findings are in contrast with data reported by Hammer (Myers *et al* 2003: 347), indicating that ENFP and ESTJ types are the highest in total coping resources and that extraverted types are higher in social and emotional coping resources than introverted types.

The findings of this study are surprising in the sense that EP types are also reported to be the types who experience the least stress because they have a natural ability to seek change and adapt to changing circumstances. They also find it easy to interact with the outer world and are usually highly confident in their own ability to deal with potentially stressful challenges. On the other hand, considering the overall low coping resources of the EP types reported in this instance, the findings may suggest that these types are currently experiencing more stress than the others, particularly when compared with the IJ and IP types. Introverted types are characteristically more in touch with their inner life and feelings and are inclined to seek important or significant others when they need to vent their feelings. They are also more adept at reflecting on their inner experiences of stress and finding

solutions for these. On the other hand, Extraverted types' orientation is more towards the outside world and not towards their inner experiences. They might therefore find it difficult to express their innermost feelings of stress to others. In the light of the high stress levels reported by the sample, the findings could also indicate that the EP types find the current high-stress school environment restrictive, given their keen preference for freedom, autonomy and the need to have fun.

Extraverted-Perceiving types characteristically find it more difficult to take immediate active steps to address stressors in their life due to their natural inclination to explore a variety of options. On the other hand, as they tend to be quite adept at keeping a broader perspective on events and at positively reframing situations and events, the high spiritual/philosophical coping resources of the EP and IP types might suggest that they have greater confidence in their own ability to deal with stressful conditions and are therefore less inclined to confide in others.

8. Implications of findings

The findings show that it can be helpful for educators and school principals to be sensitive to the different ways each personality type copes with stress and the available coping resources. The present findings suggest that female teachers and, in particular, the NF and introverted types, are more oriented towards establishing or having available social networks that can provide them with support in times of stress. The findings also suggest that different types have different orientations towards the support they need in times of stress. It also appears from the findings that some personality types find it more difficult to deal with stressful situations. In view of this, it is recommended that school principals consider the diverse and unique experiences of stressful situations or conditions in the school environment and the resultant unique socio-psychological needs of their teaching staff.

In particular, school principals can endeavour to involve their teaching staff in creating a high-nurturing school environment by developing individual and organisational practices that not only facilitate healthy organisational functioning but also reduce staff stress.

Johnson & Green (2007) promote the concept of a health-promoting school that aims to achieve healthy lifestyles for the total school population by developing supportive environments that encourage the promotion of health. Health-promoting practices in the school environment emphasise the need to eliminate barriers to teaching and learning and the need to promote wellbeing as a precondition for teaching and learning success. Typical health-promoting practices include policies and programmes designed to reduce the harmful effects of stress in one or more of the following ways:

- Identifying and reducing or eliminating the work stressors, for example: improvements in the physical work environment; changes in workloads and deadlines; changes in work schedules; greater levels of employee participation in planning and decision making, particularly in planning changes that affect them; regular performance feedback and giving positive praise and recognition; improved flow of communication; ensuring extramural activities are matched to teachers' skills and interests; and building a sense of collegiality.
- Helping staff to change their perceptions of the stressors and experiences of stress, for example: life skills education to empower staff to engage and deal successfully with life and its challenges; team building; time management workshops; workshops on burnout and training in emotional intelligence, stress management and relaxation techniques.
- Helping staff to cope more effectively with the outcomes of stress, for example, by creating wellness programmes; establishing mentoring programmes and teacher support teams to provide emotional and social support for at-risk teachers and making available counselling services for staff experiencing high levels of stress (Kyriacou 2001; Slocum & Hellriegel 2007).

9. Conclusion

From the findings of this exploratory pilot study, certain trends and relationships between the coping resources and personality types of a group of South African teachers were conclusive. However, the findings should be interpreted with caution. Firstly, because of its

exploratory survey research design, this study can yield no statements about causation. Associations between variables are therefore interpreted rather than established. In addition, it must be kept in mind that these results were obtained from a relative small sample of teachers in a South African school, which in itself probably limits the generality of the findings. These findings therefore need to be replicated with other samples and measuring instruments before drawing conclusions about the relationships between coping resources and personality types. However, research on teacher stress has established itself as a major area of international and local interest, and the results of this study therefore provide new knowledge and valuable data on empirically significant associations between coping resources and personality types as demonstrated in the stress experiences of a group of South African teachers. It is trusted that the findings and perspectives offered in this paper will encourage researchers to undertake cross-replication studies involving more representative samples of South African teachers.

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