

Occupational Stress and Satisfaction of NSW Department of School Education Teachers¹

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A conceptual framework based on the attribution of responsibility for stress provides a sound foundation for the study of the occupational stress and job satisfaction of teachers. Occupational stress and job satisfaction are treated as multidimensional phenomena and associations between the dimensions are explored.

Introduction

Stress is not experienced uniformly by groups of people, but rather personally by an individual (Albertson and Kagan, 1987; Worrall and May, 1989; Dworkin et al., 1990; Pierce and Molloy, 1990). Stress may be considered as a product of the individual's interaction with the environment or social setting (Lazarus and Folkman, 1984; Fleishman, 1984; Worrall and May, 1989; Kremer-Hayon and Goldstein, 1990). Moreover, a distinction should be drawn between negative "distress" and positive "eustress" (Selye, 1976; Milstein and Farkas, 1988; Pierce and Molloy, 1990). The latter relates to stress which is stimulating and associated with positive feelings. When one considers stress in such general terms, one concludes that it is an inevitable part of life (Selye, 1976). However, such a generalised view is not adequate if we are to attain a better understanding of the nature of occupational stress, and particularly, the occupational stress of teachers.

It is important, for our purposes, to attempt to specify the construct of teachers' occupational stress. First, it has generally been viewed as a negative, undesirable phenomenon (Fletcher and Payne, 1982; Laughlin, 1984; Kyriacou and Pratt, 1985; Dworkin et al., 1990; McCormick and Solman, 1992a). Second, it relates specifically to the occupation of teaching and its attendant "environment". If the assumption that stress is pervasive is indeed correct, clearly one might expect life events separate from work to mediate stress experienced in the work environment, and some studies of teacher stress have attempted to take this into account (for example, Malik et al., 1991). Notwithstanding this, a conceptual framework which is contextually bound to the occupation of teaching is likely to be more useful.

McCormick and Solman (1992a), drew together various areas of the literature to argue for a conceptual framework for teachers' occupational stress in organisational terms. The organisational work environment of teachers is not a single, discrete system.

Rather, it is characterised as a cluster of loosely-coupled systems (Weick, 1976) or domains, to which teachers attribute responsibility for components of their occupational stress. These domains can be conceptualised, in relative terms, as being at a notional distance from each other. In this context, the phenomenon of the self-serving bias in attributions (Kashima and Triandis, 1986; Forsterling, 1988) suggests that teachers will attribute greater responsibility for their stress to domains, the more distant they are from the personal domain (self).

Teacher stress and teacher job satisfaction are generally treated as distinct phenomena (for example, Kyriacou and Sutcliffe, 1979; Laughlin, 1984; Mykletun, 1985; Borg et al., 1991). When the association between single, global measures of self-reported teacher stress and job satisfaction has been investigated, it has been found to be negative and mild; for example, Kyriacou and

Sutcliffe (1979), $r = -0.27$; $p < 0.01$, Laughlin (1984), $r = -0.43$; $p < 0.01$. This measure is arguably less meaningful than those provided by considering each construct as multidimensional and investigating associations between those dimensions (McCormick and Solman 1992a). However, it can be also argued that for an individual teacher, each single measure does present a Gestalt of sorts. We suggest, then, that the use, and marriage, of both approaches could be fruitful in gaining greater insight into each phenomenon, and how they are related.

When teachers' occupational stress is considered in terms of the attribution of responsibility conceptual framework, another reason for investigating the relationship between occupational stress and satisfaction is forthcoming. In reviewing the two factor theory of Herzberg et al. (1959), McCormick and Solman (1992b) suggested that the formers' dichotomisation of factors affecting job satisfaction to "intrinsic to the job" and "extrinsic to the job" might more productively be considered as "intrinsic to the person" and "extrinsic to the person", respectively. Smilansky's (1984) study, which suggested that satisfaction is associated with internal factors and stress with external factors, offers further support for the externalized nature of teachers occupational stress, inherent in the attribution of responsibility conceptual framework.

Method

The Sample

One thousand questionnaires were distributed among 109 New South Wales (NSW) Department of School Education schools of various types: single teacher, infants/primary, central and high school, throughout the state of NSW. The schools were randomly selected from a list of all the schools not selected in the two earlier

studies (McCormick and Solman, 1992a, 1992b). Although selection was random, schools were chosen so that each school type and region was approximately proportionally represented in the distribution. Each questionnaire was accompanied by a letter requesting each teacher to participate in a study of the occupational stress and satisfaction of teachers, by completing the survey form. It was emphasised that participation was completely voluntary and confidentiality was assured. No other information was given. Each teacher also received a self-addressed, postage paid envelope, so that completed forms could be returned directly to the researchers, circumventing any fears that responses might be viewed by peers or supervisors.

Four hundred and eighty seven questionnaires were returned, providing a total response rate of approximately 49%. Approximately 54% of infants/primary and 44% of secondary teachers returned survey forms. Approximately 42% of metropolitan teachers returned completed survey forms compared to 52% of non-metropolitan teachers. Sixty three percent of all respondents were female and 37% male. Some items were not completed by some subjects.

The Instrument Only those parts of the questionnaire which are concerned with this report are described here. The first section of the questionnaire consisted of a measure of general occupational satisfaction as well as a scale comprised of 25 statements related to the job satisfaction of teachers. In its original form (McCormick and Solman, 1992b), this scale contained some items used by Lester (1987), as well as others included by the researchers and items suggested by a group of teachers. The scale was refined following two earlier studies (McCormick and Solman, 1992a, 1992b). The second section consisted of a measure of general occupational stress and 34 individual items related to

the occupational stress of teachers. In its original form (McCormick and Solman, 1992b), this scale contained items used by Payne and Furnham (1987), as well as items suggested by a group of teachers and items included by the researchers. As before, this scale was refined after two earlier studies (McCormick and Solman, 1992a, 1992b). In the third section, subjects were asked to rate how responsible they felt each of society, peers, the Government, superiors, your school organisation, parents, the Department of Education, yourself, and students, were for their occupational stress.

Results and Discussion

All procedures were carried out using SPSS.

Responsibility for Occupational Stress

Table I reports subjects' ratings of how responsible nominated entities are for their occupational stress. Subjects responded to the statement: "Below are listed persons and institutions whom you may, or may not, consider responsible for your occupational stress. Please indicate, by shading the appropriate box, HOW RESPONSIBLE you feel each is". Possible responses were "not at all", "slightly", "moderately", "very" and "extremely". Reliability coefficients for the nine items were: Cronbach's α , 0.74 and Guttman's split half, 0.72. When the percentages of respondents in the two extreme categories of "very" and "extremely" are considered, considerably greater responsibility is attributed to the Government and Department of Education, than to the other entities. Whilst it is of value to look at the individual contributions of each of these entities, Wieck's (1976) view of schools suggests that these might be associated and be perceived in "clusters" or systems. Thus, a principal components factor analysis with varimax rotation was carried out on the nine items. This is reported in Table II. Three factors were identified with eigenvalues 3.0, 1.8 and 1.2, accounting for 33%, 20% and 13% of the variance, respectively. We have named the factors school structure, bureaucratic authority and student behaviour. School structure clearly consists of those items related to each teacher's own school. It is of interest that the item "yourself" loaded on this factor, and that it cross-loaded, with a loading of 0.42, on the factor student behaviour. This equivocation is worthy of some consideration. On one hand, each teacher is a member of the school's staff, a part of the school structure. On the other, there is some evidence provided by the factor solution of the stress items, reported later, that these teachers associate their ability to set and maintain standards with stress in the personal domain. The item "society" which loaded on student behaviour, also cross-loaded with a loading of 0.48, on bureaucratic authority. Teachers may perceive the nebulous concept of "society" in two distinct ways. First, as the entity responsible for setting expectations and controlling children's "behaviour". Second, as the entity which demands so much of them and chronically criticises their performance.

Principal components analysis of stress items

The occupational stress items identified a possible source of stress. For each, teachers responded to the statement: "Below is a list of some possible sources of stress. Please indicate by shading the appropriate circle, how stressful each is for YOU". Possible responses were "no stress", "mild stress", "moderate stress", "much stress", and "extreme stress". Reliability coefficients for the items were: Cronbach's α 0.93, and Guttman's split half 0.87. A principal components analysis with varimax rotation was carried out on the items, yielding a five factor solution which is reported in Table III. Eigenvalues

were 10.5, 3.7, 2.4, 2.1 and 1.4, accounting for 31%, 11%, 7%, 6% and 4% of the variance respectively. The factors were named

external (to school) domain, student domain, time demands, school domain and personal domain. This factor solution is consistent with the conceptual framework outlined earlier. However, when viewed in terms of attribution of responsibility or blame, the factor time demands may appear as an exception. A "lack of time" has consistently been found to be a source of stress in many other studies (for example, Fimian, 1987; Borg et al., 1991; Punch and Tuetteman, 1991), and it is not surprising that it is a distinct factor here. Indeed, "lack of time" may be such a well-developed concept that teachers may well perceive it as a distinct domain to which responsibility can be attributed.

Principal components analysis of satisfaction items

In the occupational satisfaction section, subjects responded to: "Below are statements relating to job satisfaction. Please shade the circle which most closely indicates your level of agreement with each statement". Possible responses were: "strongly disagree", "disagree", "neutral", "agree" and "strongly agree". Reliability coefficients for the items were: Cronbach's α 0.85, and Guttman's split half 0.83. A principal components analysis with varimax rotation was carried out on the items, yielding a five factor solution which is reported in Table IV. Eigenvalues were 5.5, 2.9, 2.0, 1.8 and 1.3, accounting for 22%, 12%, 8%, 7% and 5% of the variance respectively. The factors were named supervision, income, external demands, school culture and workload. The most interesting aspect of this factor solution is in the terms in which it deviates from the solution obtained from essentially the same set of items in earlier studies (McCormick and Solman, 1992a, 1992b). In the earlier analyses there was a factor called "advancement" consisting of items related to opportunities for advancement as well as the Department of Education's concern for teachers' welfare. Items related to "an excessive workload for teachers", loaded on the equivalent of the external demands factor. In this most recent solution, workload is a distinct factor. This would certainly appear to reflect changes in organisational structures since the earlier administrations of the instrument. As indicated in outlining the background, a major reform in the NSW public education system was the devolution of much of the power from the Department of School Education to regional departments and the schools. In most instances, by the time of the latest survey, decisions about appointment to executive teacher positions, were made at the school level. Similarly, a teacher's actual workload was less likely to be influenced by the Department of School Education, and more likely to be a product of the school environment.

The association between occupational stress and satisfaction

For the item on general occupational stress, subjects responded to the question: "In GENERAL, how stressful do you find being a teacher?". Choices were: "not at all", "mildly", "moderately", "very" or "extremely". Similarly, for the item on general job satisfaction, the teachers responded to the question: "In GENERAL, how satisfied are you with your job as a teacher?", with possible responses of "very satisfied", "satisfied", "neutral", "dissatisfied" or "very dissatisfied". The Pearson correlation coefficient for this pair of single measures of general satisfaction and general stress was calculated and found to be $r = -0.39$ (significant, using the one-sided z-test, at the 0.001 level). The isolation of factors and the complexities of these two phenomena, however, suggest that a canonical correlation analysis might be more helpful. Canonical correlation analysis is an appropriate technique for examining the inter-relationships between the elements of two sets of variables. This is precisely what is required here. We seek to investigate the relationships between the stress factors and the satisfaction factors, in the form of factor scores, generated from the principal components

analyses. In canonical correlation analysis, variates, pairs of linear combinations of variables, are generated such that correlations between the linear combinations are maximised. The results of this analysis are shown in Table V. Three canonical variates were generated, and redundancy indices were calculated as suggested by Stewart and Love (1968). These redundancy indices are a conservative measure of the variance in the set of stress variables explained by the set of satisfaction variables for each canonical variate; in this instance, approximately 10%, 4% and 3% respectively. Interpretation of the canonical variates is by examination of the correlations of the original factors with the generated canonical variate, as argued by Levine (1984). External (to school) domain (stress) and external demands (satisfaction) correlate quite highly with the first variate. Both these relate to the Government and the Department of School Education. For the second variate, student domain (stress) and workload (satisfaction) have the most notable correlations with the variate. For these teachers, high levels of stress, attributable to students' poor behaviour and performance, may be associated with low levels of satisfaction with the amount of work expected, and vice versa. One interpretation might be that a "high" demand of resources in one area, affects teachers' capacity to meet the demands of the other. For the third canonical variate, the two largest correlations are with school domain (stress) and school culture (satisfaction). One interpretation is that teachers experiencing low occupational stress attributable to levels of support from colleagues might tend to be more satisfied with the job of teaching and their prospects for advancement, and vice

versa. Of course, we have conservatively focused only on those variables with correlations greater than 0.50. However, other variables are correlated with the variates to a lesser degree. For example, workload (satisfaction) in the first and external demands (satisfaction) in the second. This reflects the multidimensional nature of the constructs, and, indeed, this is one reason for using the multivariate canonical correlation technique in the first instance.

Discriminant analyses involving general occupational stress and satisfaction

Table VI shows the results of a step-wise discriminant analysis, using Mahalanobis' distance. This procedure was carried out in an attempt to identify those stress and satisfaction factors which best discriminate between teachers in this sample reporting low, and those reporting high, occupational stress. For the purpose of this analysis, responses of "not at all" and "mildly" were recoded into "low stress"; responses of "moderately" were excluded; and responses of "very" or "extremely" were recoded into "high stress". The new sample was randomly split in half, whilst preserving the proportions of the two categories in each sub-sample. The discriminant analysis was carried out on one sub-sample, and the resultant discriminant function checked for predictive accuracy (hit ratio) with the other. The hit ratio of approximately 89% is well above the success rate expected by chance. This is approximately 59% when calculated as the proportional chance criterion, recommended by Hair et al. (1987). These results are of interest for two reasons. First, it provides profiles of each of the two groups in particular domains and a basis for further examination of the underlying reasons for differences. Second, we have three satisfaction factors in the discriminant function which are better predictors than the two stress factors not entered, namely school domain and personal domain.

A discriminant analysis was also carried out using the general satisfaction item, after dichotomising responses. The responses "dissatisfied" and "very dissatisfied" were recoded into

"dissatisfied"; responses of "neutral" were excluded; and "satisfied" and "very satisfied" were recoded into "satisfied". The results are reported in Table VII. Again, the validity of the discriminant function was checked using a 50% proportional holdout sample, yielding a hit ratio of approximately 89%, above the proportional chance criterion of approximately 67%. The first four variables in the discriminant function are satisfaction factors. Two stress factors, personal domain and time demands were entered into the function. Only one satisfaction factor, workload was not entered into the function. School culture is the

best discriminator between the two groups. School culture relates to the intrinsic nature of teaching, teaching at a particular school and opportunities for advancement.

Perhaps the most tantalising aspect of this discriminant analysis, however, is offered by the factor means for personal domain. In this domain, teachers in the "generally satisfied" group proportionally report higher stress from their own frailties and weaknesses, than those in the "generally dissatisfied" group. A possible interpretation is that general dissatisfaction is associated with a biased externalization of responsibility for stress. This is certainly consistent with our conceptual framework.

It is worthwhile considering the results of the two discriminant analyses together. Three variables, school culture, supervision and time demands are in both functions. These are discriminators for both general occupational stress and satisfaction. It could be argued that these are the areas most worthy of attention in any attempts to reduce occupational stress and increase job satisfaction. This is important in practical terms also, as these can all be addressed at the school level in the context of organisational development.

Conclusions

Teachers attribute responsibility for their occupational stress to identifiable domains. The attribution of responsibility conceptual framework is useful for the investigation of occupational stress and satisfaction. Because the framework is founded in the organisational context, results and implications can indicate directions or emphases at an organisational level for amelioration of stress and increase of job satisfaction. Teachers in this study generally attributed greater responsibility for their occupational stress to the Government and the employing educational authority, namely the NSW Department of School Education, than to other entities. A main purpose of recent changes to the structure of the education system in NSW has been devolution of authority from the central bureaucracy, to schools. It is certainly possible that the high level of attribution of responsibility may reflect teachers perceptions of these imposed changes as very stressful. However, it is also possible that the high level of attribution is explained by the "remoteness" of the Government and Department of School Education, as teachers seek to externalize their stress. If the latter case applies, there is likely to be little that can be done, in practical terms, to alter this situation. In considering self-reported general occupational stress and satisfaction, this study suggests that actions at the school level, to ameliorate occupational stress and dissatisfaction, are likely to be the most worthwhile. This is particularly so, if the

quality of supervision in terms of inter-personal relations, the "culture" of the school, and the rationalization of demands of teachers' time are addressed. In this vein, a future study of teachers' stress and satisfaction, which includes these variables, could be of value.

This study suggests that teachers who report that they are generally dissatisfied with their job, may be distinguished, in an unexpected way, from those who report as satisfied. The former are less likely to attribute their stress to their own shortcomings, than the latter. Although this finding is not conclusive, it does suggest that dissatisfaction is associated with a biased externalization of responsibility for that dissatisfaction. Finally, this study has attempted to demonstrate some associations, but delineation between teachers' occupational stress and job satisfaction is unclear. These results suggest that neither phenomenon should be studied in isolation from the other.

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REFERENCES

- Albertson, L. M. and Kagan, D. M. (1987) Occupational Stress among teachers, *Journal of Research and Development in Education*, 21, 1, 69-75.
- Borg, M. G., Riding, R. J. and Falzon, J. M. (1991) Stress in teaching: a study of occupational stress and its determinants, job satisfaction and career commitment among primary schoolteachers, *Educational Psychology*, 11, 1, 59-75.
- Dewe, P. J. (1985) Coping with work stress: an investigation of teachers' actions, *Research in Education*, 33, 27-40.
- Dworkin, A. G., Haney, C. A., Dworkin, R. J. and Telschow, R. L. (1990) Stress and illness behaviour among urban public school teachers, *Educational Administration Quarterly*, 26, 1, 60-72.
- Fimian, M. J. (1987) Teacher stress: an expert appraisal, *Psychology in the Schools*, 24, 5-14.
- Fleishman, J. A. (1984) Personality characteristics and coping patterns, *Journal of Health and Social Behavior*, 25, 229-244.
- Fletcher, B, and Payne, R. (1982) Levels of reported stressors and strains amongst schoolteachers: some UK data, *Educational*

Review, 34, 267-278.

Forsterling, F. (1988) Attribution theory in clinical psychology (Great Britain, Wiley).

Hair, J., Anderson, R. E. and Tatham, R. L. (1987) Multivariate data analysis with readings (New York, Macmillan).

Herzberg, F., Mausner, B. and Snyderman, B. (1959) The motivation to work (New York, Wiley).

Kashima, Y. and Triandis, H. C. (1986) The self-serving bias in attributions as a coping strategy, *Journal of Cross-Cultural Psychology*, 17, 1, 83-97.

Kremer-Hayon, L. and Goldstein, Z. (1990) The inner world of Israeli secondary school teachers: work centrality, job satisfaction and stress, *Comparative Education*, 26, 2/3, 285-298.

Kyriacou, C. and Pratt, J. (1985) Teacher stress and psychoneurotic symptoms, *British Journal of Educational Psychology*, 55, 61-64.

Kyriacou, C. and Sutcliffe, J. (1979) Teacher stress and

satisfaction, *Educational Research*, 21, 2, 89-96.

Laughlin, A. (1984) Teacher stress in an Australian setting: the role of biographical mediators, *Educational Studies*, 10, 1, 7-21.

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

Lester, P. E. (1987) Development and factor analysis of the teacher job satisfaction questionnaire, *Educational and Psychological Measurement*, 47, 223-233.

Levine, M. (1984) Canonical Analysis and Factor Comparison (Beverly Hills, Sage Publications).

McCormick, J. and Solman, R. (1992a) Teachers' attributions of responsibility for occupational stress and satisfaction: an organisational perspective, *Educational Studies*, 18, 2, 201-222.

McCormick, J. and Solman, R. (1992b) The externalised nature of teachers' occupational stress and its association with job satisfaction, *Work & Stress*, 6, 1, 33-44.

McIntyre, T. C. (1984) The relationship between locus of control

and teacher burnout, *British Journal of Educational Psychology*, 54, 235-238.

Malik, J. L., Mueller, R. O. and Meinke, D. L. (1991) The effects of teaching experience and grade level taught on teacher stress, *Teaching and Teacher Education*, 7, 1, 57-62.

Milstein, M. and Farkas, J. (1988) The over-stated case of educator stress, *The Journal of Educational Administration*, 26, 2, 232-249.

Mykletun, R. J. (1985) Work stress and satisfaction of comprehensive school teachers: an interview study, *Scandinavian Journal of Educational Research*, 29, 57-71.

Payne, M. A. and Furnham, A. (1987) Dimensions of educational stress in West Indian secondary school teachers, *British Journal of Educational Psychology*, 57, 141--150.

Pierce, C. M. B. and Molloy, G. N. (1990) Relations between school type, occupational stress, role perceptions and social support, *Australian Journal of Education*, 34, 3, 330-338.

Punch, K. F. and Tuetteman, E. (1991) Stressful factors and the likelihood of psychological distress among classroom teachers, *Educational Research*, 33, 1, 65-69.

Selye, H. (1976) *The stress of life* (New York, McGraw-Hill).

Smilansky, J. (1984) External and internal correlates of teachers' satisfaction and willingness to report stress, *British Journal of Educational Psychology*, 54, 84-92.

Stewart, D. and Love, W. (1968) A general canonical correlation index, *Psychological Bulletin*, 70, 160-163.

Washington, K. R. (1989) Controlling job stress: some tips for urban teachers, *School Organisation*, 9, 3, 315-318.

Weick, K.E. (1976) Educational organisations as loosely coupled systems, *Administrative Science Quarterly*, 21, 1-19.

Wilson, D., Mutero, C., Doolabh, A. and Herzstein, M. (1990) Type A behavior and self-reported stress among Zimbabwean teachers, *The Journal of Social Psychology*, 130, 1, 115-116.

Woodhouse, D. A., Hall, E. and Wooster, A. D. (1985) Taking control of stress in teaching, *British Journal of Educational*

Psychology, 55, 119-123.

Worrall, N. and May, D. (1989) Towards a person-in-situation model of teacher stress, British Journal of Educational Psychology, 59, 174-186.

Table I. Responses (rounded percentages). to the statement: "Below are listed persons and institutions whom you may, or may not, consider responsible for your occupational stress. Please indicate, by shading the appropriate box, how responsible you feel each is, The choices are: not at all, slightly, moderately, very, extremely".

	Not at all	Slightly	Moderately	Very	Extremely	
Society	5	22	36	28	9	
Peers	26	43	22	6	3	
The Government		2	13	21	31	34
Superiors	15	33	30	16	7	
Your school organisation	15					
	38					
	29					
	13					
	5					
Parents	14	40	30	11	6	
The Department of Education	2					
	12					
	21					
	30					
	35					
Yourself	11	45	29	10	6	
Students	7	39	33	15	7	

Table II. Factor groupings of responsibility for occupational stress items with factor loadings and (rounded) percentages of teachers responding in the two most extreme categories of very and extremely.

	Loading	Percentage
Factor 1: School structure		
School organisation	0.84	18

Superiors 0.80 23
Peers 0.72 9
Yourself 0.46 22

Factor 2: Bureaucratic authority

The Government 0.93 65
The Department of Education 0.91 65

Factor 3: Student behaviour

Students 0.76 22

Parents 0.74 17

Society 0.63 37

Table III. Factor groupings of occupational stress items with factor loadings and (rounded) percentages of teacher responses in the two positive extremes of much stress or extreme stress.

	Loading	Percentage
Factor 1: External (to school) domain		
The Government's education policies	0.84	55
Unrealistic demands from the Department of School Education	0.81	55
The rate at which change occurs	0.75	56
The relationship which the Department of School Education has with its schools	0.73	44
Having to implement Departmental policies	0.70	34
The conviction that the education system is getting worse	0.65	41
Feeling of powerlessness	0.50	37
Excessive curriculum demands	0.49	40
Factor 2: Student Domain		
Poor work attitudes of students	0.83	32
Having to deal with students who constantly misbehave	0.80	41
Difficulty in motivating students	0.79	22
Inadequate discipline in the school	0.67	23
Maintaining discipline with difficult classes	0.66	38
Verbal abuse by students	0.54	23
Factor 3: Time Demands		

Just not enough time in the school day 0.78 43
 Insufficient time for lesson preparation and marking
 0.74
 41
 Insufficient time for personal matters 0.71 39
 Demanding nature of the job 0.67 51
 Difficulty of doing a good job in the classroom because of other
 delegated responsibilities
 0.61
 37
 Difficulty in covering the syllabus in the time available
 0.61
 36

Factor 4: School Domain

Lack of support from the principal 0.82 18
 Lack of opportunity to participate in school decision-making
 0.79
 12
 Principal's reluctance to make tough decisions 0.76 18
 Not being appreciated by the principal 0.75 13
 Lack of a supportive and friendly atmosphere 0.62 17
 Lack of support from other colleagues 0.55 10

Factor 5: Personal Domain

Personal failings 0.75 21

Feeling of not being suited to teaching 0.58 6
 Criticism from parents 0.54 18
 Difficulty of setting and maintaining standards 0.44 21

Table IV. Factor groupings of occupational satisfaction items with factor loadings and (rounded) percentages of teacher responses in the two positive extremes of agree and strongly agree for positive statements, or disagree and strongly disagree for statements of a negative nature; the latter items were reversed for analysis and are indicated by *.

Loading	Percentage
Factor 1: Supervision	
My immediate supervisor backs me up	0.84 78
*My immediate supervisor is not willing to listen to suggestions	0.80
	79
My immediate supervisor treats everyone equitably	0.79

69

I receive recognition from my immediate supervisor

0.77

66

*My immediate supervisor makes me feel uncomfortable

0.76

76

Factor 2: Income

*My income is less than I deserve 0.81 16

I am well paid in proportion to my ability 0.79 14

*My income from teaching is inadequate 0.79 31

My pay compares well with other non-teaching jobs

0.72

14

Teaching provides me with financial security 0.54 46

Factor 3: External Demands

The Government is striving for a better education system

0.77

19

Overall, the changes taking place in education are for the better

0.76

19

The Department of School Education is concerned for teachers' welfare

0.63

5

*There are too many changes in Education 0.57 12

*Some people are more concerned about "getting on" than they are about educating children

0.49

9

Factor 4: School Culture

Teaching is very interesting work 0.72 84

I enjoy teaching at least as much as I used to 0.64 53

Teaching provides me with an opportunity to advance professionally

0.55

49

I am happy to be working at this particular school

0.51

82

*I am not getting ahead in my present position 0.47 27

Factor 5: Workload

*Teachers have an excessive workload 0.78 5

*Teachers are expected to do too many non-teaching tasks
0.71

6

*People expect too much of teachers 0.67 4

Table V. Correlations between (dependent) stress and (independent) satisfaction scores and canonical variates.

Stress factors	Canonical variates		
	1	2	3
External (to school) domain	0.83	-0.23	0.50
Student domain	0.33	0.93	-0.01
Time demands	0.29	0.03	-0.54
School domain	0.40	-0.26	-0.66
Personal domain	0.12	-0.06	0.02
Satisfaction factors			
Supervision	-0.17	-0.19	0.37
Income	-0.37	0.23	0.09
External demands	-0.69	0.50	-0.36
School culture	-0.34	0.01	0.81
Workload	-0.46	-0.83	-0.27
Squared canonical correlations	0.47	0.21	0.14
Redundancy indices	0.10	0.04	0.03

Multivariate tests of significance

Test name	Value	Approx F
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Pillais	0.84	16.74***
Hotelling's	1.33	21.70***
Wilk's	0.35	19.70***
Roy's	0.47	

*** significant at the 0.001 level

Table VI. Step-wise (Mahalanobis) discriminant analysis of a sub-sample of respondents, categorised as having either low or high occupational stress, on stress and satisfaction factors with 50% holdout, selected randomly in the proportions of the analysis

analysis sample, for validation .

high satisfaction, n=139; low satisfaction, n=37

Factors in the Discriminant Function Wilk's Lambda Minimum D2
Structure loadings Factor means, SD by group
satisfied
dissatisfied

School culture 0.71**** 2.49**** 0.83 0.37, 0.79
-1.01, 1.11

External demands 0.68**** 2.83**** 0.23 0.01, 1.03
-0.42, 0.94

Income 0.65**** 3.16**** 0.19 0.11, 1.08
-0.27, 0.89

Supervision 0.64**** 3.34**** 0.12
0.12, 0.87
-0.10, 1.22

Personal domain 0.63**** 3.52**** 0.10
0.00, 0.90
-0.17, 0.85

Time demands 0.62**** 3.61**** -0.38 -0.30, 0.93
0.39, 1.07

Group centroids: high satisfaction: 0.40
low satisfaction: -1.50

Multivariate statistics:

Canonical correlation of the discriminant function: 0.61

Chi-square: 80.97 (df=6)****

Hit ratio on 50% holdout sample: 89.2%

Proportional chance criterion: 66.8%

**** significant at the 0.0001 level

1 A paper presented at the AARE National Conference, Fremantle,
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