STRESS & MORALE: THEIR INDEPENDENCE IN DETERMINING TEACHER QUALITY OF WORK LIFE *

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ABSTRACT

What are the positive and negative work experiences reported by teachers, and how do these contribute to their quality of work life? This paper reports structural equation analyses conducted on questionnaire data obtained from 1,539 Victorian primary and secondary school teachers, as part of the evaluation of three organisational health programs. Drawing on Perceived Quality of Life research it was hypothesised that stress and morale would be separate outcomes of positive and negative work experiences. Results confirmed that stress and morale operate on different dimensions. Three structural equation models showed that positive experiences were stronger determinants of morale than stress, whereas negative experiences were stronger determinants of stress than morale. Stress and morale contributed equally to a teacher's overall quality of work life. When examined simultaneously it was found that positive experiences contributed only to morale whilst negative experiences...
contributed only to stress. These findings challenge conventional wisdom and suggest that it is not possible to enhance morale by reducing negative experiences, nor is it possible to reduce stress by focusing on positive experiences.

STRESS & MORALE: THEIR INDEPENDENCE IN DETERMINING TEACHER QUALITY OF WORK LIFE

Although a concern for improving quality of work life is one of the reasons cited for the growing body of international research into teacher stress (Kyriacou, 1987), there has been little theoretical development to explain the relationship between occupational stress and a teacher's quality of work life. Worrall and May (1989) have noted that the lack of theory in teacher stress research has resulted from an emphasis being placed on the practical issues associated with reducing teacher stress. The theoretical developments that have been made in other areas of stress research (e.g., Lazarus & Folkman, 1984; Hart, Wearing & Headey, 1992a, 1992b), however, bring into question the orientation of teacher stress researchers who still continue to focus almost exclusively on the negative aspects of teaching (e.g., O'Connor & Clarke, 1990; Pierce & Molloy, 1990; Wearing, Bell, McMurray, Conn & Dudgeon, 1990; and see reviews by Borg, 1990; Kyriacou, 1987; cf. Kyriacou, 1978a, 1978b, 1978c). These developments suggest that it is necessary to take account of both positive (beneficial to well-being) and negative (harmful to well-being) work dimensions in order to bring about sustainable improvements in the quality of teachers' work lives. This paper outlines the development of a theoretical model of teacher quality of work life that integrates both positive and negative experiences into a more systemic view of the relationship between a teacher's work environment and their psychological well-being.

It is generally believed in the lay community that occupational stress refers to the aversive or unpleasant emotional states that people experience as a result of their work, and that its presence will be associated with the absence of more pleasurable emotional experiences. The notion that a person's positive and negative emotional experiences are related much like the opposite ends of a see-saw, whereby one rises as the other falls, has a degree of intuitive appeal. When evaluating their level of happiness, a person weighs up the good and bad experiences to form an overall impression (Bradburn, 1969). Job satisfaction is viewed in a similar way, in that people form an overall judgement about their work according to a satisfaction continuum ranging from very dissatisfied to very satisfied (e.g., Weiss, Dawis, England & Lofquist, 1967). This general belief about stress has also been reflected in occupational research. Newton (1989) has observed that when investigating occupational stress, researchers tend to assess a person's negative emotional response (e.g., anxiety), overall attitude to their job (e.g., job satisfaction), or level of psychological distress (e.g., psychosomatic or depressive symptoms).
Teacher stress research has also adopted this conventional view. Most studies define stress as the unpleasant feelings that teachers experience as a result of their work (Borg, 1990). The belief that positive and negative emotional experiences are mutually exclusive is also evidenced by the surprise Kyriacou & Sutcliffe (1978a) acknowledged when they found only a small relationship between the level of occupational stress and job satisfaction reported by teachers. If the conventional model of teacher stress adequately explained the relationship between a teacher's work environment and their psychological well-being, it would seem reasonable to expect that teacher stress measures would explain considerably more variance in teachers' psychological outcomes than is typically the case. The results of a study by Kyriacou and Pratt (1985) have shown that teacher stressors only account for between 5% and 17% of the variance in teachers' responses to various dimensions of the Middlesex Hospital Questionnaire. This is similar to other results which have shown that teacher stressors account for between 10% and 15% of the variance in responses to the General Health Questionnaire (Galloway, Panckhurst, Boswell, Boswell & Green, 1984; Tuettemann & Punch, 1992). It is therefore time to reassess the theoretical approach, albeit limited, that underpins teacher stress research, and to examine the policies and practices that have been based on this work.

Since the early work of Bradburn (1969) quality of life researchers have made a distinction between the positive and negative dimensions of psychological well-being (Diener & Emmons, 1985; Headey, Holmstrom & Wearing, 1985; Headey & Wearing, 1992; Warr, Barter & Brownbridge, 1983; Watson, 1988; Watson & Tellegen, 1985). This has led to considerable support for the assertion that a person's emotional experience can be explained by the two independent dimensions of positive and negative affect. Positive affect is a pleasurable emotional state characterised by terms such as enthusiasm, energy, mental alertness and determination, whereas negative affect refers to the subjective experience of distress and includes emotional states such as anger, anxiety, fear, guilt, and nervousness (Watson, 1988). A person's emotional state, however, is only one component of their overall quality of life, which also includes cognitive (e.g., Diener, Emmons, Larsen & Griffin, 1985) and somatic health (e.g., Cox & Gotts, 1988) dimensions. Taking this broader perspective, Headey, Holmstrom & Wearing (1984) have made a distinction between ill-being and well-being. They argue that ill-being and well-being contribute to a person's overall quality of life, in much the same way that a person's overall level of intelligence comprises of both verbal and nonverbal dimensions.

Quality of life researchers have developed various models which relate social background factors, personality, life experiences, coping responses and domain satisfactions to one another and to both well-being and ill-being indices (Campbell, Converse & Rodgers, 1976; Costa & McCrae, 1980; Headey, Glowacki, Holmstrom & Wearing, 1985; Headey, Holmstrom & Wearing, 1985; Headey & Wearing, 1992; Holahan & Moos, 1986; and see a review by Diener, 1984). These models have generally shown that the positive and
negative dimensions of psychological well-being are independent, although slightly related factors. There is also strong evidence to suggest that positive and negative life experiences operate differently in determining a person's level of psychological well-being (Cohen & Hoberman, 1983; Headey, Holmstrom & Wearing, 1985; Headey & Wearing, 1992; Kanner, Coyne, Schaefer & Lazarus, 1981; Warr et al., 1983). Different patterns of association often emerge, with negative life experiences correlating more strongly with the ill-being dimension, whilst positive experiences tend to relate more strongly to the well-being component.

These findings are consistent with the cognitive-relational theory of stress proposed by Lazarus and his coworkers (e.g., DeLongis, Folkman & Lazarus, 1988; Lazarus, 1990; Lazarus & Folkman, 1984) who have been most influential in demonstrating that everyday life experiences can be appraised in either negative or positive terms, and that the nature of these appraisals has different consequences for adaptational outcomes (Kanner et al., 1981). Although this approach has often been used during the past decade in the area of health psychology (e.g., DeLongis, Coyne, Dakof, Folkman & Lazarus, 1982; DeLongis et al. 1988; Williams, Zyzanski & Wright, 1992), it has only recently been applied to occupational stress research. In a study that employed a sample of 330 police officers, Hart, Wearing and Headey (1992a) demonstrated the need to assess both positive and negative work experiences in order to understand a police officer's quality of life. It was found that a police officer's negative work experiences tended to correlate more strongly with ill-being indices, whereas positive work experiences tended to correlate more strongly with well-being indices. These relationships were replicated in a later study, which also controlled for the personality dimensions of neuroticism and extraversion (Hart, Wearing & Headey, 1992b). Given that the indices employed in both studies assessed the affective, cognitive and somatic health dimensions of a person's overall quality of life, it is possible that the reported correlations were partly spurious due to nonwork influences. Similar results, however, have been found using dependent variables specifically related to a person's work environment (Hart & McIntosh, 1991).

Little work has been done to investigate the role that positive and negative work experiences play in determining psychological outcomes among teachers. One of the few exceptions was a recent study reported by Tuettemann and Punch (1992) who concluded that positive experiences (termed destressors) ameliorated the distress associated with negative experiences (teacher stressors). However, the theoretical rationale for these findings was limited, and it was difficult to evaluate the researcher's claims as the method used to assess teacher work experiences was not specified, and details of the contingency table analyses which gave rise to their conclusion were not provided. Furthermore, they reported the results of regression analyses which suggested that after negative experiences had been taken into account there was little, if any, relationship between positive experiences and psychological distress. This result is not surprising, given that positive events are typically associated with
positive psychological outcomes rather than psychological distress.

Some insight into the relationship between a teacher's positive and negative work experiences can be gained from a study into stress and job satisfaction reported by McCormick and Solman (1992). This study employed a measure of job satisfaction which asked teachers to indicate their level of agreement, as opposed to satisfaction, with a number of statements that described either the absence or existence of positive work experiences (e.g., "I receive recognition from my immediate superior", cf. Hart, Conn & Carter, 1992). As such, this measure is likely to reflect positive teaching experiences rather than the level of satisfaction that teachers experience as a result of their work. A canonical correlation analysis suggested that there was little relationship between teacher stressors and positive teaching experiences, with positive experiences accounting for less than 10% of the variance in teacher stressors for each of three canonical variates. Other researchers have found only small to moderate correlations between self-report measures of teacher stress and job satisfaction (e.g., Borg & Falzon, 1989; Galloway et al., 1984; Kyriacou & Sutcliffe, 1978a). In a recent international review, Kyriacou (1987) commented that:

"Self-reported teacher stress is negatively associated with job satisfaction only to a moderate extent ... as such, it appears that some teachers report both high stress and high job satisfaction" (p.148).

The relationship between teacher stress and job satisfaction is not quite analogous to the distinction that has been made between positive and negative dimensions of psychological well-being. Most research into teacher stress has adopted Kyriacou & Sutcliffe's (1978c) definition which describes teacher stress as the experience of unpleasant emotions such as tension, frustration, anxiety, anger and depression. This is very similar to Watson's (1988) definition of negative affect and, like the constructs of positive and negative affect, teacher stress is generally measured along a unipolar scale that assesses a person's emotional experience from its total absence through varying degrees of intensity. Job satisfaction, however, is a bipolar construct, typically measured on scales that range from 'extremely dissatisfied' to 'extremely satisfied' (Weiss, et al., 1967), and as such, embraces both positive and negative dimensions. Notwithstanding the tendency for people to respond more toward the positive end of these scales (Oskamp, 1984), and some organisational writers referring to job satisfaction as a pleasurable or positive emotional state (Milton, Entrekin & Stening, 1984), job satisfaction is actually an umbrella construct that refers to the overall level of affect associated with a person's work. Although job satisfaction differs both conceptually and empirically from positive affect, the observation made by Kyriacou (1987) lends some support to the notion that a teacher's positive and negative psychological responses to their work are independent, and are likely to be determined by different factors.

It is not appropriate to distinguish between stress and job satisfaction when investigating the positive and negative dimensions of a person's quality of work life or psychological well-being. The bipolar nature of job satisfaction means that it will be confounded to some extent with measures of stress, rather than forming an independent positive
dimension. A more appropriate distinction can be made between stress and morale. Although morale is often viewed as a group phenomena (Smith, 1966, 1976), a growing number of researchers recognise that the individual experience of morale is psychologically more meaningful (Doherty, 1988; Evans, 1992; Hart, Conn & Carter, 1992). Morale has been defined by Hart, Conn and Carter (1992) as the energy, enthusiasm, team spirit and pride that teachers experience in their school. This definition places central importance on the experience of individual teachers, and reflects a unipolar construct that ranges from the absence of morale to more intense experiences. Coupled with Kyriacou and Sutcliffe's (1978) approach to teacher stress, the concepts of stress and morale can be considered analogous to positive and negative affect, in that they represent the aversive and pleasurable emotional states that teacher's experience as a result of their work. It is therefore likely that stress and morale are independent constructs and that each contributes to a teacher's overall quality of work life. Furthermore, it would seem reasonable to argue that stress and morale are determined separately by a teacher's positive and negative work experiences.

This paper reports three separate studies that were based on secondary analysis of data obtained during the evaluation of three organisational health programs that were conducted by the Victorian Department of School Education. Conventional wisdom suggests that teacher stress is associated with the absence of more pleasurable emotional states. Although policy and intervention programs have been based on this belief, a growing body of evidence suggests that it is necessary to consider both positive and negative dimensions in order to enhance a teacher's quality of work life. The studies reported here attempt to clarify this issue, and present evidence supporting the notion that teacher quality of work life is determined by the independent constructs of stress and morale.

Study 1

This study aimed to investigate the relationship between a teacher's negative work experiences, and their level of stress and morale. Following the approach taken by perceived quality of life researchers (e.g., Headey & Wearing, 1992) and the recent findings in occupation stress research which suggest positive and negative work experiences contribute differently to well-being and ill-being indices (Hart, Wearing & Headey, 1992a, 1992b), it was hypothesised that stress and morale were independent outcomes of a teacher's negative work experiences. It was also hypothesised that a teacher's negative work experiences contributed more strongly to stress than morale.

Method

Participants

The data were derived from responses to a post-test survey used to evaluate an organisational development program conducted by the Victorian Department of School Education during 1990. All teachers working in the schools that took part in these programs were invited to participate in the
evaluation. Completed questionnaires were provided by 652 teachers (response rate: 71%) from 16 primary (N = 231) and 11 secondary (N = 421) schools in both country and metropolitan regions. Their ages ranged from 22 to 64 years (M = 39.9, SD = 8.43), and 52.7% were female.

Measures

Stress. The General Strain Index (Tellenback, Brenner & Lofgren, 1983) was used to measure the aversive feelings that teachers experienced as a result of their work. Teachers were asked to indicate the extent to which they experienced various emotional states on a 5-point scale ranging from 'rarely or never' to 'very often'. Four of the five items in this scale refer to aversive feelings associated with work in general (e.g., "Worry or feeling of discomfort before work"), whereas one item refers to feelings associated with a specific class (e.g., "Worry or feeling of discomfort before a particular class"). Only those items associated with work in general were used, as internal consistency and confirmatory factor analyses suggested that the item referring to a specific class did not form part of the overall scale (alpha = .88).

Morale. The Morale subscale from Hart, Conn and Carter's (1992) School Organisational Health Questionnaire was used to measure the degree of energy, enthusiasm, team spirit and pride that teachers perceived in their school. Teachers were asked to rate the extent to which five statements described their school on a 5-point scale ranging from 'strongly disagree' to 'strongly agree'. Sample items include "There is a lot of energy in this school" and "The morale in this school is high" (alpha = .92).

Negative Work Experiences. Five subscales from the Teacher Stress Inventory employed by Wearing et al. (1990) were used to measure the negative experiences associated with a teacher's work. The subscales were: (a) Authoritarian Leadership (3 items, alpha = .78); (b) Ministry Demands (5 items, alpha = .87); (c) Parent demands (5 items, alpha = .74); (d) Poor Staff Relations (5 items, alpha = .81); and, (e) Student Behaviour (4 items, alpha = .86). Teachers were asked to rate each item according to how stressful they found that aspect of their teaching during the preceding month, on a 5-point scale ranging from "Absolutely no stress at all" to "Much more stress than I can cope with", where "stressful" was defined as the total amount of "tension, anxiety and pressure" that teachers experienced. Sample items from each subscale include "Authoritarian nature of the school organisation", "Excessive parental interference", "The inability of teachers to influence the direction of Ministry policy", "Unnecessary 'cliquishness' amongst staff", and "Poor student behaviour".

Results and Discussion

The summary statistics and Pearson product-moment intercorrelation matrix for the seven constructs measured in this study are shown in Table 1. All correlations were significant, and were in the expected direction. As hypothesised, the pattern of correlations showed that the five dimensions of negative work experiences were more strongly related to stress (M = .40, SD = .07) than morale (M = -.25, SD = .08). Only a small association was found between stress and morale.

The Linear Structural Relations (LISREL VII) Program (Joreskog & Sorbom, 1989) was used to test the hypothesised model which predicted that
negative work experiences contributed more strongly to stress than morale, and that stress and morale were independent constructs. LISREL is ideally suited for modelling correlational and nonexperimental data, as the technique can account

Table 1
Summary Statistics and Intercorrelation Matrix for Stress, Morale and Five Dimensions of Positive Work Experiences Among Teachers.

<table>
<thead>
<tr>
<th>Scale</th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stress</td>
<td>9.5</td>
<td>4.04</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Morale</td>
<td>16.4</td>
<td>4.64</td>
<td>-16</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Authoritarian Leadership</td>
<td>7.8</td>
<td>3.25</td>
<td>41</td>
<td>-28</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ministry Demands</td>
<td>13.1</td>
<td>4.29</td>
<td>39</td>
<td>-13</td>
<td>46</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent Demands</td>
<td>10.0</td>
<td>3.03</td>
<td>32</td>
<td>-22</td>
<td>43</td>
<td>47</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Poor Staff Relations</td>
<td>8.1</td>
<td>2.99</td>
<td>50</td>
<td>-35</td>
<td>66</td>
<td>44</td>
<td>48</td>
<td>-</td>
</tr>
<tr>
<td>Student Behaviour</td>
<td>10.7</td>
<td>3.10</td>
<td>38</td>
<td>-28</td>
<td>34</td>
<td>43</td>
<td>55</td>
<td>37</td>
</tr>
</tbody>
</table>

Note. Decimal points omitted. Listwise deletion of missing cases (N = 570).
Critical values of r (two-tailed, N = 473): .08 at .05 level; .11 at .01 level; .14 at .001 level. Correlations are significant at the .05, .01, or .001 level if the absolute value of the correlation is equal too or greater than the corresponding critical value.

for the measurement error that is inevitable when assessing latent psychological constructs (cf. Cuttance & Ecob, 1987; Hayduk, 1987). The program estimates both a measurement and structural model. The measurement model relates observed indicators (measures) to the latent construct they are thought to approximate, whilst the structural model assesses the explanatory links (hypothesised causal paths) between latent constructs. A number of 'goodness-of-fit' and diagnostic statistics are also provided, which are useful for assessing the extent to which theoretical models are consistent with empirical data. Four goodness-of-fit statistics are reported for each of the models tested in this paper: (a) likelihood ratio test statistic (reported as a chi-square statistic); (b) goodness-of-fit index (GFI); (c) adjusted goodness-of-fit index (AGFI); (d) and the root mean square residual (RMSR). Although the likelihood ratio test statistic provides the only true parametric test of a model’s fit (Cuttance & Ecob, 1987), this statistic is strongly influenced by sample size and departures from multivariate normality. It is therefore best to consider several indicators of fit when evaluating the merits of a particular model.
Each of the models reported in this paper were tested using two different methods of estimation. Maximum likelihood (ML) estimates were obtained using a Pearson product-moment correlation matrix. This is the most common method of estimation reported in the psychological literature. Given that the survey items were measured on either five or seven point ordinal scales, and that multivariate normality cannot easily be demonstrated, it would be more appropriate (in terms of the distributional assumptions being made) to have examined the asymptotic covariances of a combined polychoric, polyserial and product-moment correlation matrix, using the generally weighted least-squares method of estimation. This procedure, however, requires a sample size larger than those that were available for these studies. A compromise suggested by Joreskog and Sorbom (1989) is to examine only the asymptotic variances of the correlation matrix, using the diagonally weighted least squares (DWLS) method of estimation. Each model was tested with DWLS estimation, using a combined polychoric, polyserial and product-moment correlation matrix. It should be noted, however, that the DWLS method of estimation does not provide asymptotically efficient estimates of model parameters, and the likelihood ratio test statistic and standardised residuals are calculated under the assumption of multivariate normality. Furthermore, the ML method of estimation is robust against moderate departures from the skewness and kurtosis of the normal distribution (Cuttance & Ecob, 1987). The skewness and kurtosis was less than 1.3 in absolute value for the indicators used in these studies, with the vast majority being less than 1.0. All latent constructs in the tested models were treated as endogenous variables to maximise identification.

The model depicted in Figure 1 shows the standardised parameter estimates from the ML solution, using a Pearson product-moment correlation matrix based on listwise deletion of missing cases (N = 570). All estimates were significant at the .01 level. There were 14 observed variables which were used to measure 3 latent constructs. Individual survey items were used to estimate the latent constructs of Stress and Morale, whereas the unit weighted composite scores for the five
Figure 1. Standardised maximum likelihood (ML) parameter estimates, using a Pearson product-moment (PPM) correlation matrix, showing the relationship between negative teaching experiences, stress and morale. (All parameter estimates were significant at the .01 level. Goodness-of-fit statistics for the ML and diagonally weighted least squares (DWLS) method of estimation, using the asymptotic variances (AV) of a combined polychoric, polyserial and product-moment (PPP) correlation matrix, are shown. Both solutions yielded similar parameter estimates).

dimensions of negative work experiences were used as indicators for the latent construct Negative Teaching Experiences. Correlations between the unique variances associated with Authoritarian Leadership and Poor Staff Relations (.16) and with Parent Demands and Student Behaviour (.18) were estimated after examination of the goodness-of-fit and diagnostic statistics provided by LISREL VII. These correlations reflect shared variance between each pair of indicators that is not explained by the latent construct Negative Teaching Experiences. Theoretical support for these correlations can be found in the second-order factor structure proposed by Wearing et al. (1990) in their models of teacher stress.

The goodness-of-fit indices suggested a reasonable fit between the observed correlation matrix and theoretical model. Solutions obtained from the different estimation procedures gave rise to the same substantive interpretation. In support of the hypotheses, the model suggested that negative teaching experiences contributed more strongly to a teacher's level of stress than morale, and that stress and morale were independent, although not entirely orthogonal factors. It was shown that Negative Teaching Experiences accounted for 42% of the variance in Stress (standardised beta coefficient of .65, residual variance of .58), whilst accounting for only 15% of the variance in Morale (standardised beta coefficient of -.39, residual variance of .85). Examination of the confidence intervals for the parameter estimates associated with the paths from Negative Teaching Experiences to Stress and Morale showed that the estimated coefficients were significantly different (p < .05). Furthermore, the correlation between the residual variances for Stress and Morale (.09) suggested that whilst being independent, there was a small degree of shared variance between the two constructs that was not accounted for by the model.

The parameter estimates linking the observed indicators to their latent construct can be interpreted in much the same way as factor loadings. Examination of the measurement model for Negative Teaching Experiences suggested (within the context of the variables measured in this study) that poor staff relationships and an authoritarian leadership style were the greatest sources of stress, followed by external factors (Ministry and Parental Demands) and student behaviour.

The results of this study question the conventional wisdom that suggests teacher stress is associated with an absence of pleasurable emotions. It has been demonstrated that teacher stress and morale operate on separate dimensions, and that a teacher's negative work experiences
contribute more to their level of stress than morale. This is consistent with quality of life research (Headey & Wearing, 1992), and suggests that while some teachers might report high stress and low morale or vice versa, others will experience both high stress and high morale or low stress and low morale. It is therefore necessary to identify those factors which determine teacher morale, given that a teachers' negative work experiences explain very little variance in their level of morale. This will require a different perspective to the approach typically taken by teacher stress researchers.

Study 2

The aim of the second study was to investigate the relationship between stress and morale in determining the overall judgements that teachers make about the quality of their work life, and to examine the contribution made by positive work experiences to a teacher's level of stress and morale. It was hypothesised that stress and morale were independent factors that each contributed to a teacher's quality of work life. It was also hypothesised that positive work experiences contributed more strongly to morale than stress.

Method

Participants

The data were derived from responses to a pretest survey used to evaluate a staff development program conducted by the Victorian Department of School Education during 1991. All teachers working in the schools that took part in these programs were invited to participate in the evaluation. Completed questionnaires were provided by 563 teachers (response rate: 92%) from 12 primary (N = 209) and 9 secondary (N = 343) schools in both country and metropolitan regions. Their ages ranged from 21 to 62 years (M = 39.7, SD = 8.30), and 56.2% were female.

Measures

Quality of Work Life. Teacher quality of work life refers to the judgements that teachers make about the extent to which their work is satisfying and meeting their needs (cf. Efraty & Sirgy, 1990). Quality of work life was measured with a 5-item scale adapted from Diener, Emmons, Larsen & Griffins's (1985) Satisfaction With Life Scale by replacing the word 'life' in each item with the phrase 'life at work'. For example, the item "The conditions of my life are excellent" became "The conditions of my life at work are excellent". Teachers were asked to rate their level of agreement with each of the five items on a 7-point scale ranging from 'strongly disagree' to 'strongly agree' (alpha = .88).

Stress and Morale. Teacher stress and morale were assessed by the same instruments employed during Study 1 (alpha's .82 and .86 respectively).

Positive Work Experiences. Nine subscales from the School Organisational Health Questionnaire (Hart, Conn & Carter, 1992) were used to provide a measure of the positive experiences associated with a teacher's work. The subscales were: (a) Curriculum Consultation (2 items, alpha = .71); (b) Participative Decision-Making (4 items, alpha = .75); (c) Discipline Policy (4 items, alpha = .71); (d) Feedback (6 items, alpha = .90); (e) Goal Congruence (5 items, alpha = .77); (f) Professional
Development (5 items, alpha = .74); (g) Professional Interaction (7 items, alpha = .80); (h) Role Clarity (4 items, alpha = .71); and, (i) Supportive Leadership (5 items, alpha = .79). Both exploratory and confirmatory factor analyses have shown that these subscales form separate, although moderately related dimensions (Hart et al.). Teachers were asked to rate the extent to which each item described their school on a 5-point scale ranging from 'strongly disagree' to 'strongly agree'. Sample items include "I am regularly given feedback on how I am performing my role", "I receive support from my colleagues", "I am encouraged to pursue further professional development", and "The school has a clearly stated set of objectives and goals".

Results and Discussion
The summary statistics and Pearson product-moment intercorrelation matrix for the 12 constructs measured in this study are shown in Table 2. All correlations were significant and in the expected direction. The overall pattern of correlations supported the hypotheses, showing that the nine dimensions of Positive Work Experiences were more strongly related to Morale (M = .52, SD = .09) than Stress (M = -.20, SD = .08), and that there was only a weak relationship between Stress and Morale. The small correlation found between Stress and Morale is consistent with the finding in Study 1, and adds support to the notion that stress and morale are independent constructs. Positive Work Experiences also tended to be more strongly associated with Morale than with Quality of Work Life (M = .37, SD = .08), whereas the correlation between Morale and Quality of Work Life was generally larger than those found between Positive Work Experiences and Quality of Work Life. Given that a greater relationship should be found between variables that are more proximal in time within a causal sequence (notwithstanding the extent to which a correlation is spurious due to the influence of additional factors), this pattern of correlations supports the notion that positive work experiences contribute to morale, which in turn contributes to the quality of a teacher's work life.

LISREL VII was used to test the hypothesised model which predicted that positive work experiences contribute more strongly to morale than stress, and that stress and morale are independent factors which in turn contribute to a teacher's overall quality of work life. Two methods of estimation were used to test the model: (a) ML, using a Pearson product-moment correlation matrix; and, (b) DWLS, using the asymptotic variances of a combined polychoric, polyserial

Table 2
Summary Statistics and Intercorrelation Matrix for Quality of Work Life, Stress, Morale and Nine Dimensions of Positive Work Experiences Among Teachers.

<p>| Scale | M   | SD  | 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   |
|-------|-----|-----|------|------|------|------|------|------|------|------|------|------|------|
| 11    |     |     |      |      |      |      |      |      |      |      |      |      |      |</p>
<table>
<thead>
<tr>
<th>Variable</th>
<th>QWL</th>
<th>Stress</th>
<th>Morale</th>
<th>CC</th>
<th>EDP</th>
<th>FB</th>
<th>GC</th>
<th>PDM</th>
<th>PD</th>
<th>PI</th>
<th>RC</th>
<th>SL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>18.0</td>
<td>10.9</td>
<td>16.3</td>
<td>6.2</td>
<td>12.8</td>
<td>15.9</td>
<td>16.3</td>
<td>11.2</td>
<td>13.5</td>
<td>24.7</td>
<td>13.9</td>
<td>17.9</td>
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<tr>
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<td>3.99</td>
<td>4.16</td>
<td>1.71</td>
<td>3.46</td>
<td>5.37</td>
<td>3.66</td>
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<td>-16</td>
<td>-19</td>
<td>30</td>
<td>37</td>
<td>42</td>
<td>30</td>
<td>-10</td>
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<td>-33</td>
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**Positive Work Experiences**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Value</th>
<th>Standard Error</th>
<th>Correlation</th>
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<td>40</td>
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<td>PI</td>
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<tr>
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</tr>
<tr>
<td>SL</td>
<td>17.9</td>
<td>4.33</td>
<td>41</td>
</tr>
</tbody>
</table>

---

**Note.** Decimal points omitted. Listwise deletion of missing cases (N = 473).

Critical values of r (two-tailed, N = 473): .09 at .05 level; .12 at .01 level; .15 at .001 level. Correlations are significant at the .05, .01, or .001 level if the absolute value of the correlation is equal to or greater than the corresponding critical value.

Key to variables: (1) Quality of Work Life; (2) Stress; (3) Morale; (4) Curriculum Consultation; (5) Effective Discipline Policy; (6) Feedback; (7) Goal Congruence; (8) Participative Decision-Making; (9) Professional Development; (10) Professional Interaction; (11) Role Clarity; (9) Supportive Leadership.

The model depicted in Figure 2 shows the standardised parameter estimates for the ML solution. Twenty-three observed variables were used to measure four latent constructs. Individual survey items were used to estimate the latent constructs of Morale, Stress and Quality of Work Life, whereas the unit weighted composite scores for the nine dimensions of positive work experiences were used as indicators for the latent construct Positive Teaching Experiences. Correlations between the unique variances associated with two pairs of indicators for Positive Teaching Experiences (Effective Discipline Policy and Goal Congruence, .20; Participative Decision-Making and Supportive Leadership, .16) were estimated after examination of the modification indices provided by LISREL VII. These correlations were not surprising, as it is quite plausible that a causal structure exists within the indicators of Positive Teaching Experiences. A further correlation was estimated between two unique variances associated with the indicators of Stress (Worry or Discomfort and Too Tired, -.17). This indicates that the latent construct of Stress does not account for all the shared variance between these two indicators, and is consistent with measurement models of Stress previously estimated by the author with data derived from different samples.
Figure 2. Standardised maximum likelihood (ML) parameter estimates, using a Pearson product-moment (PPM) correlation matrix, showing the relationship between positive work experiences, stress, morale and quality of work life among teachers. (All parameter estimates were significant at the .01 level. Goodness-of-fit statistics for the ML and diagonally weighted least squares (DWLS) method of estimation, using the asymptotic variances (AV) of a combined polychoric, polyserial and product-moment (PPP) correlation matrix, are shown. Both solutions yielded similar parameter estimates).

The goodness-of-fit indices suggested a reasonable fit between the observed correlation matrix and theoretical model. Both estimation procedures yielded solutions that gave rise to the same substantive interpretation. In support of the hypotheses, the model suggested that a teacher's positive work experiences contributed more strongly to their level of morale than level of stress, and that stress and morale were independent constructs which both contributed to the quality of a teacher's work life. The parameter estimate for the path between Positive Teaching Experiences and Morale (.85) was significantly larger (p < .001) than the estimate for the path between Positive Teaching Experiences and Stress (-.34). Positive Teaching Experiences accounted for 72% of the variance in Morale, whilst only accounting for 11% of the variance in Stress. Consistent with the finding in Study 1, the model also showed that there was a small correlation (.10) between the residual variances associated with Stress and Morale. The model also explained 44% of the variance in a teacher's quality of work life, with stress and morale making equal contributions. There was no significant difference between the two parameter estimates relating both Stress and Morale to Quality of Work Life (p > .05).

The measurement model for Positive Teaching Experiences suggested that general organisational factors (particularly Professional Interaction and Feedback) were more important sources of morale than those factors typically associated with teaching (e.g., Curriculum Consultation and Effective Discipline Policy). Together with the results of Study 1, these findings lend support to Cox, Boots, Cox and Harrison's (1988) assertion that it is necessary to promote the well-being of teachers and their school organisation. Although this view is somewhat contrary to the public
perception that student behaviour and classroom management practices are the greatest source of teacher stress, it is consistent with the results obtained from other occupational groups suggesting that organisational characteristics have a strong influence on a person’s psychological well-being (Hart, Wearing & Headey, 1992a, 1992b; Kelloway & Barling, 1991). These findings are also consistent with multivariate models of teacher stress which have purported that administrative style and staff relations stressors determine, to a large extent, the stress associated with student behaviour, parent demands and time pressures (Wearing et al., 1990).

Study 3

In the previous two studies it has been shown that positive and negative work experiences tended to operate differently in determining a teacher's level of stress and morale. However, there still remains a question as to how positive and negative experiences operate when considered simultaneously, and this was addressed in the third study. It was hypothesised that positive experiences would contribute to morale, whilst negative experiences would contribute to stress. Following the findings of the previous two studies, it was also hypothesised that stress and morale were independent constructs, and that each contributed equally to a teacher's quality of work life.

Method

Participants

The data were derived from responses to a pretest survey used to evaluate an organisational development program conducted by the Victorian Department of School Education during 1991. All teachers working in the schools that took part in these programs were invited to participate in the evaluation. Completed questionnaires were provided by 342 teachers (response rate: 91%) from 1 primary (N = 18) and 6 secondary schools (N = 324) in the metropolitan area. Their ages ranged from 21 to 61 years (M = 38.4, SD = 8.77), and 53.9% were female.

Measures

Quality of Work Life, Stress and Morale. The same measures as those employed during Studies 1 and 2 were used to assess a teacher's Quality of Work Life (alpha = .86), Stress (alpha = .77) and Morale (alpha = .85).

Positive Work Experiences. Six subscales from the School Organisational Health Questionnaire5 (Hart, Conn & Carter, 1992) were used to measure separate dimensions of positive work experiences associated with teaching. The subscales were: (a) Curriculum Consultation (4 items, alpha = .70); (b) Effective Discipline Policy (4 items, alpha = .70); (c) Participative Decision-Making (4 items, alpha = .78); (d) Professional Interaction (5 items, alpha = .76); (e) Student Orientation (4 items, alpha = .77); and, (f) Supportive Leadership (3 items, alpha = .79).

Negative Work Experiences. The Teacher Stress Inventory (Wearing et al., 1990) employed during Study 1 was used to assess the negative experiences associated with a teacher's work. Six subscales were used: (a) Authoritarian Leadership (alpha = .77); (b) Ministry Demands (alpha = .77); (c) Parent Demands (alpha = .75); (d) Poor Staff Relations (alpha = .82);
Results and Discussion

The summary statistics and Pearson product-moment intercorrelation matrix for the 15 constructs measured in this study are shown in Table 3. All correlations were in the expected direction. In support of the hypotheses, Negative Work Experiences tended to correlate more strongly with Stress (M = .37, SD = .10) than Morale (M = .27, SD = .11), whilst Positive Work Experiences tended to correlate more strongly with Morale (M = .57, SD = .07) than Stress (M = .21, SD = .05). Only a small correlation (-.22, p < .001) was found between Stress and Morale. There was also a small to moderate relationship between the various dimensions of Positive and Negative Work Experiences, with the correlations ranging from -.09 to -.51 (M = .27, SD = .12). An exploratory principal components analysis, however, supported the notion that positive and negative teaching experiences were independent. Two factors were extracted according to Kaiser's criterion, and the results of an orthogonal rotation showed that the 6 subscales of Positive Work Experiences loaded on the first factor (loadings ranged from .74 to .81) and that the 6 subscales of Negative Work Experiences loaded on the second factor (loadings ranged from .67 to .87). There were no significant crossloadings, and the two factors accounted for 44.8% and 18.9% of the variance respectively.

LISREL VII was used to test the hypothesised model which predicted that positive work experiences contributed to morale whilst negative work experiences contributed to stress, and that stress and morale were independent factors which in turn contributed to a teacher's overall quality of work life. Two methods of estimation were used to examine the model: (a) ML, using a Pearson product-moment correlation matrix based on pairwise deletion of missing cases (minimum N = 260); and, (b) DWLS, using the asymptotic variances of a combined polychoric, polyserial and product-moment correlation matrix, based on listwise deletion of missing cases (N = 226). A pairwise matrix was used for the ML solution in order to maintain at least 10 subjects per indicator.

Table 3
Summary Statistics and Intercorrelation Matrix for Quality of Work Life, Stress, Morale and Six Dimensions of Both Positive and Negative Work Experiences Among Teachers.

<table>
<thead>
<tr>
<th>Scale</th>
<th>M</th>
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<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<th>8</th>
<th>9</th>
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<tbody>
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<td>6.40</td>
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<td></td>
</tr>
<tr>
<td>2</td>
<td>Stress</td>
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</tr>
<tr>
<td>3</td>
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</table>
Critical values of r (two-tailed, N = 224): .13 at .05 level; .17 at .01 level; .22 at .001 level. Correlations are significant at the .05, .01, or .001 level if the absolute value of the correlation is equal to or greater than the corresponding critical value. Key to variables: (1) Quality of Work Life; (2) Stress; (3) Morale; (4) Curriculum Consultation; (5) Effective Discipline Policy; (6) Participative Decision-Making; (7) Professional Interaction; (8) Student Orientation; (9) Supportive Leadership; (10) Authoritarian Leadership; (11) Ministry Demands; (12) Parent Demands; (13) Poor Staff Relations; (14) Student Behaviour; (15) Time Demands.

The model depicted in Figure 3 shows the standardised parameter estimates for the ML solution. Individual survey items were used to estimate the latent constructs of Morale, Stress and Quality of
Figure 3. Standardised maximum likelihood (ML) parameter estimates, using a Pearson product-moment (PPM) correlation matrix, showing the relationship between positive and negative work experiences, stress, morale and quality of work life among teachers. (All parameter estimates were significant at the .001 level, unless otherwise stated. Goodness-of-fit statistics for the ML and diagonally weighted least squares (DWLS) method of estimation, using the asymptotic variances (AV) of a combined polychoric, polyserial and product-moment (PPP) correlation matrix, are shown. Both solutions yielded similar parameter estimates).

Work Life, whereas the unit weighted composite scores for the subscales of positive and negative work experiences were used as indicators for the latent constructs of Positive and Negative Teaching Experiences. As suggested by LISREL VII diagnostic statistics and the correlation matrix reported in Table 3, Poor Staff Relations was used as an indicator of both Positive and Negative Teaching Experiences. Correlations between the unique variances associated with three pairs of indicators for Positive and Negative Teaching Experiences (Participative Decision-Making and Authoritarian Leadership, -.18; Parent Demands and Student Behaviour, .12; Ministry and Time Demands, .22) were estimated after examination of the modification indices provided by LISREL VII. These correlations were not surprising given that a causal structure is likely to exist among the indicators of positive and negative teaching experiences.

The goodness-of-fit indices suggested a reasonable fit between the observed correlation matrix and theoretical model, and there was no substantive difference in the interpretation of the solutions derived from the two estimation procedures. In support of the hypotheses, the model suggested that a teacher’s positive work experiences contributed to morale, whereas their negative work experiences contributed to stress. It was also shown that stress and morale were independent constructs which both contributed to the quality of a teacher's work life. Positive and Negative Teaching Experiences were moderately related (r -.43), and together they accounted for 74% of the variance in Morale and 28% of the variance in Stress. The model also accounted for 47% of the variance in Quality of Work Life, with Stress and Morale making equal contributions. There was no significant difference between the parameter estimates for the paths linking Stress and Morale to Quality of Work Life (p > .05).

There were some notable differences in the structural components of this model, when compared to the models reported in Studies 1 and 2. Unlike the models in Studies 1 and 2, the correlation between the residual variances for Stress and Morale was nonsignificant. This suggests that
when Positive and Negative Teaching Experiences are both taken into account, the small amount of shared variance that existed between Stress and Morale can be fully explained. The model also showed that when Positive and Negative Teaching Experiences are considered simultaneously, there was no significant relationship between Positive Teaching Experiences and Stress (beta -.08, p > .05) or between Negative Teaching Experiences and Morale (beta .05, p > .05). Although moderately sized parameter estimates were found for corresponding relationships in Studies 1 and 2, the results of this study suggest that those relationships were in fact spurious and can be fully accounted for by the correlation that exists between a teacher's positive and negative work experiences.

Replication is the best way to test a model's validity. This study has replicated and built on the findings of the preceding two studies. It has again been shown that stress and morale are independent outcomes of a teacher's work experience, and that it is important to consider both stress and morale in order to understand a teacher's quality of work life. This study also demonstrates that it is not possible to enhance morale by reducing negative teaching experiences, nor is it possible to reduce stress by focusing on positive experiences. The moderate correlation found between a teacher's positive and negative work experiences, however, suggests that it may be fruitful to explore the causal relationships between different aspects of a teachers work environment. This may identify points of entry that will enable policy makers and practitioners to influence a teacher's total work context, and thereby improve both stress and morale. For example, it may be found that a school's leadership and the way in which teachers work together are fundamental building blocks which give rise to other positive (e.g., feedback and professional development) and negative (e.g., student misbehaviour and parent demands) experiences (cf. Wearing et al., 1990).

General Discussion

A considerable amount of effort has been invested by researchers in their attempts to understand the dynamics of teacher stress (e.g., Kyriacou & Sutcliffe, 1987a, 1987b, 1987c; Kyriacou & Pratt, 1985; McCormick & Solman, 1992; O'Connor & Clarke, 1990; Pierce & Molloy, 1990; Tuettemann & Punch, 1992; Wearing et al., 1990). Much of this work has been motivated by a concern for improving teacher quality of work life (Kyriacou, 1987), and was based on the assumption that teacher stress is associated with unpleasant feelings that are experienced at the expense of more pleasurable emotions. The results of the studies reported in this paper fail to support this assumption, and suggest that stress and morale are independent factors which contribute equally to a teacher's overall quality of work life. Furthermore, it was found that a teacher's negative work experiences contributed only to stress, whilst their positive work experiences contributed only to morale. These findings are consistent with perceived quality of life research (Cohen & Hoberman, 1983; Headey, Holmstrom & Wearing, 1985; Headey & Wearing, 1992; Kanner, Coyne, Schaefer & Lazarus, 1981; Warr et al., 1983) and demonstrate the need to consider both positive and negative dimensions in order to understand the quality of a person's

It is worth noting that people will generally evaluate new findings by making reference to their own experience. Whilst contemplating the results of these studies some may ask, "What are the good and bad experiences associated with my job, and can these cause me to have high stress and high morale at the same time?" When findings such as these are drawn to our attention, it is quite easy to identify situations within our own realm of experience that accord with the findings. The difficulty, however, is that we can also identify experiences that are consistent with the conventional model of teacher stress. This demonstrates the need for a strong link between theory and practice, in order to address the real issues associated with improving a teacher's quality of work life (cf. Worrall & May, 1989).

Practice has generally been based on the conventional model of teacher stress, and although this model is not entirely wrong, it will not always lead to the most appropriate intervention. For example, quality of work life has been related to the behavioural outcomes of job involvement, job effort and job performance (Efraty & Sirgy, 1990). Conventional wisdom would suggest that to improve these outcomes among teachers, practitioners only have to improve quality of work life by reducing the amount of stress that teacher's experience as a result of their work. It is possible, however, that poor quality of work life is due to a lack of morale, rather than the presence of stress. This would require an intervention strategy with a totally different focus to that suggested by the conventional model. The challenge for researchers and educational practitioners is to develop a more systemic view of a teacher's work environment, and thus provide a more adequate framework to explain the relationship between a teacher's work experience and their affective responses. The results of this paper strongly suggest that sustainable improvements in a teacher's quality of work life can only be achieved once this more systemic view has been taken.

Notes
1 The response rates reported in this paper were based on the staff establishment size for each school during 1990. This may have resulted in slightly higher response rates being reported than were actually obtained, as the staff establishment refers to full-time equivalent positions rather than the number of teachers in a particular school.
2. The sample design effect, typically associated with educational research and cluster sampling techniques, is not considered relevant in the present circumstances, as no sample of teachers was selected. However, it could still be argued that teachers were clustered within schools. Therefore, if it is assumed that the average intraclass correlation was .10 (across all measures), the sample design effect would have been 3.32, 3.58, and 5.79 for Studies 1, 2 and 3 respectively.
3. Use of the weighted least squares method of estimation, with the asymptotic covariances of a combined polychoric, polyserial and product-moment matrix, requires a listwise sample of $1.5k(k + 1)$, where $k$ is the number of observed variables (Joreskog & Sorbom, 1988). Sample sizes of 315, 828 and 1,053 were required for Studies 1, 2 and 3 respectively.
4. The ML, rather than DWLS, parameter estimates were reported to maintain
comparability between all three studies. The ML solution reported in Study 3 was based on a pairwise correlation matrix, and was considered more appropriate, given that the listwise deletion of missing cases (required for computation of asymptotic variances) resulted in a sample of less than 10 subjects per indicator. In all cases, the parameter estimates in one solution fell within the 95% confidence limits of the same parameter estimate in the other solution. The standard errors for the parameter estimates were not reported, as these are only meaningful in the context of an standardized solution. Further information about the LISREL VII analyses is available from the author.

5. An earlier developmental version of the questionnaire was used for this study. There were minor differences in the wording of some items used in this version, compared to the final version used during Study 2. The earlier version also had two additional items in Curriculum Consultation and two items less in both Professional Interaction and Supportive Leadership.

REFERENCES


