Australian Journal of Educational & Developmental Psychology. *Vol 3, 2003, pp 35-47*

Testing a Model for Teacher Burnout

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ABSTRACT

Research was conducted on the predictors of burnout in a sample of teachers in Queensland private schools. A total of 246 teachers responded to scales that assessed burnout, school and classroom environments, work pressure, role overload, role ambiguity, role conflict, teaching efficacy, external locus of control, and self-esteem. The Maslach Burnout Inventory was used to assess three facets of burnout: emotional exhaustion, depersonalisation and personal accomplishment. An hypothesized model of burnout was tested in a LISREL analysis with post hoc modifications indicating that role overload, work pressure, classroom environment and self-esteem were predictors of emotional exhaustion. Depersonalisation was significantly related to emotional exhaustion, role conflict, self-esteem and school environment. Teaching efficacy, self-esteem and depersonalisation were predictors of personal accomplishment.

In 1974, Freudenberger introduced the term burnout to describe the inability to function effectively in one's job as a consequence of prolonged and extensive job related stress. Since that time, incidences of, and research into stress and burnout have increased with popular emphasis on employees in the human services sector including social workers, nurses, teachers, lawyers, medical doctors and police officers (Jackson, Schwab, & Schuler, 1986; Maslach & Jackson, 1981). A common characteristic of these occupations is that the nature of the work can be highly emotional. For teachers, the potential for emotional stress is high since they work with classes of up to 35 students for long periods of time. The intensely relational nature of classrooms means that teachers are vulnerable to emotionally draining and discouraging experiences (Maslach & Leiter, 1999). Such experiences can lead to dysfunctional teacher behaviour with obvious implications for the teacher's well-being and student learning.

This article reports the findings of a study of burnout in Queensland private school teachers. Specifically, the study investigated the influence of several hypothesized predictor variables. To provide a contextual basis for the research, background information on theoretical and empirical perspectives relating to this research is provided.

THEORETICAL AND EMPIRICAL PERSPECTIVES ON BURNOUT

According to Byrne (1991) and Maslach, Jackson, & Leiter (1996), the burnout syndrome has three distinct but loosely coupled dimensions: emotional exhaustion (feelings of being emotionally overextended and exhausted with one's work), depersonalisation (the development of negative and uncaring attitudes towards others), and negative personal accomplishment (the loss of feelings of self-competence and dissatisfaction with one's achievements). Maslach et al. have developed and validated the Maslach Burnout Inventory (MBI), an instrument that assesses these three dimensions. This instrument has been used in burnout research across a wide range of human environments.

Australian and overseas research has shown that high school teachers exhibit high levels of stress when compared to other white collar workers (Bransgrove, 1994). Otto (1986) showed that as many as one third of Australian teachers reported being very or extremely stressed. Teachers operating under high levels of stress for significant periods of time can develop burnout characteristics including less sympathy towards students, reduced tolerance of students, failure to prepare lessons adequately and a lack of commitment to the teaching

profession. It follows that the study of teacher burnout is of great importance to the productivity of teachers and subsequent student learning.

Early attempts to describe stress and burnout emphasized their personal nature and, accordingly, blamed the individual teacher. This view has been superseded by a more social view of burnout that recognizes both background personality variables of the individual and school characteristics as contributing to burnout in teachers. However, most studies of burnout have focused largely on the investigation of background variables like marital status, age, years of teaching and gender as predictors of burnout (Anderson & Iwanicki, 1984; Byrne, 1991, 1994; Malik, Mueller, & Meinke, 1991; Maslach & Jackson, 1981). In fact, empirical studies involving psychosocial environment dimensions of schools and classrooms as antecedents to teacher burnout are rare.

According to Guglielmi and Tatrow (1998), serious conceptual problems have confronted stress and burnout research. Two examples demonstrate the divergent findings that can arise if variables are operationalized in quite different ways. On the influence of student misbehaviour on teacher stress, Hart, Wearing and Conn (1995) concluded that 'there is little point in trying to reduce teacher stress by reducing student misbehaviour' (p. 27). By contrast, Boyle, Borg, Falzon and Baglioni (1995) reported that workload and student misbehaviour accounted for the most variance in predicting teaching stress. Hart et al. measured student misbehaviour with a single self-report item that assessed the time that the teacher spent dealing with student misbehaviour. It could be argued that such a simplistic and naïve conceptualisation of student misbehaviour does not in any way reflect the complex student misbehaviour issues that teachers handle on a daily basis and which are not related to time. Similarly, the measure of organizational climate employed by Hart et al. is simplistic and does not reflect advances in school climate research since the early 1980s (see, e.g. Fraser, 1994). It seems clear that different researchers operationalize constructs in quite different ways.

Recent research involving burnout has investigated links between teacher burnout and perceived self-efficacy in classroom management (Brouwers & Tomic, 2000), compared stress and burnout in rural and urban schools (Abel & Sewell, 1999), and studied the sources of stress and burnout in Hong Kong teachers (Tang & Yeung, 1999). Although research on learning environments and teacher burnout have shown remarkable progress over the past 25 years, no studies utilizing the latest approaches to research in these two fields have been conducted. The recognition of school and classroom environments as possible predictors of burnout is consistent with Lens's and Jesus' (1999) psychosocial interpretation of teacher stress and burnout and Maslach's (1999) view that the social environment is at the heart of both understanding the teacher burnout phenomenon and ameliorating it.

Design of Present Study

The aims of the present study were to:

- validate scales to assess possible predictors of teacher burnout (viz. school and classroom environment, work pressure, role overload, role conflict, role ambiguity, teaching efficacy, locus of control, self-esteem) and Maslach Burnout Inventory scales (viz. emotional exhaustion, depersonalisation, and personal accomplishment), and
- investigate whether the postulated model of relationships among the above predictors and Maslach Burnout Inventory scales shown in Figure 1 fits the data through the use of structural equation modelling.

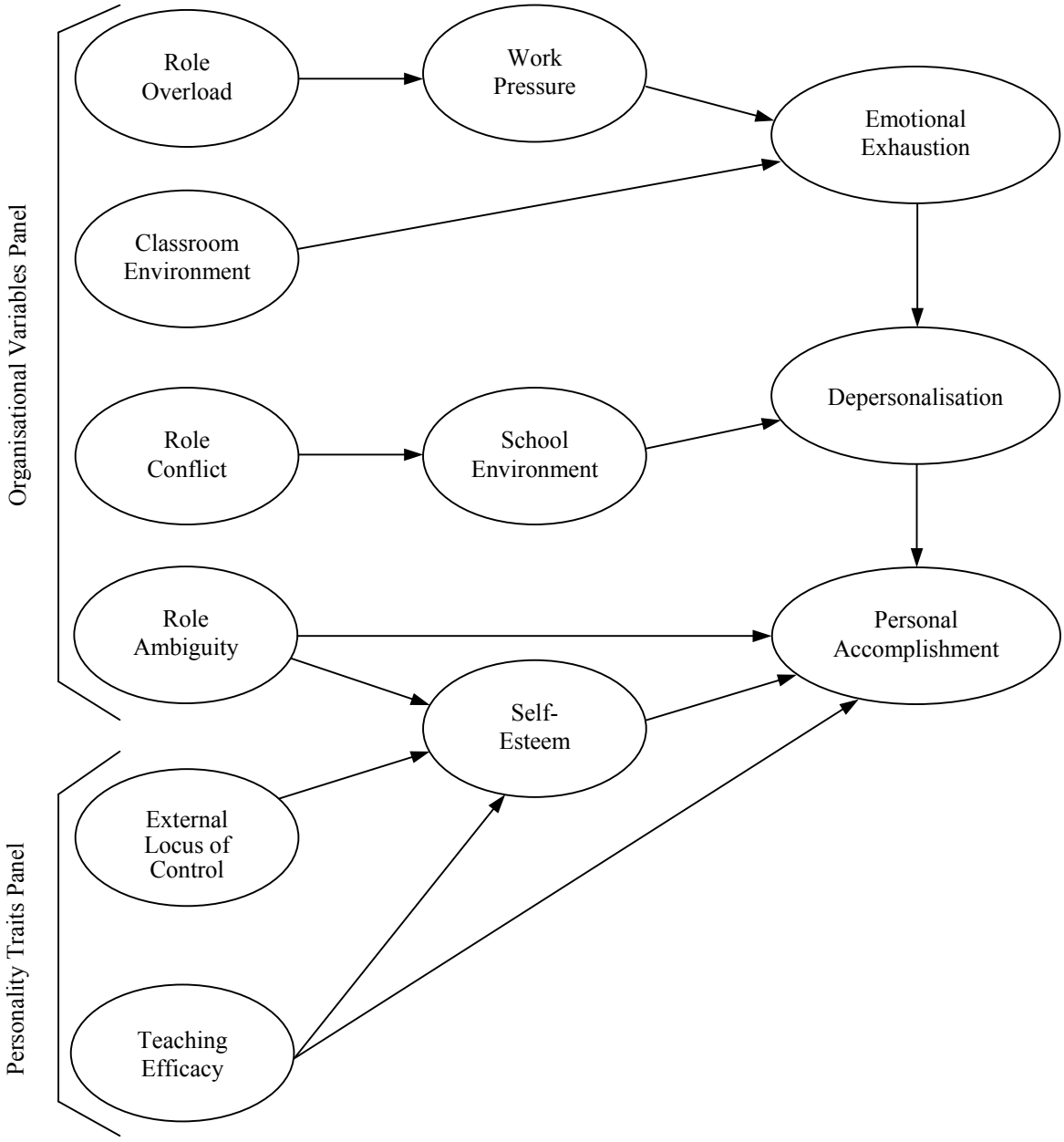

Figure 1. Postulated structural model for teacher burnout (observed variables, fixed path loadings from observed variables to latent variables and error variances for observed variables have been omitted.)

As shown in Figure 1, both organizational and personality variables predict burnout variables. It is noteworthy that this model was based on Byrne's (1994) research that has related a host of variables with the three scales of the Maslach Burnout Inventory.

METHOD

Participants
The sample employed in this study consisted of 246 teachers who teach in private (i.e. non-government) schools in Queensland. Table 1 describes the sample which consisted of 99 primary, 103 secondary and 44 teachers from combined primary and secondary schools. As indicated earlier in this article, age and gender have been shown to influence teacher burnout. While Table 1 describes the sample in terms of gender and age group, these two variables are not the focus of the present investigation.

Instrumentation
A test battery consisting of several instruments was administered to each respondent. All instruments had been employed in previous research in the United States but it was considered mandatory that the psychometric properties of each scale be reported. Details of the specific instruments which are described in Table 2 are as follows:

Classroom environment. A 24-item instrument which assesses teacher's perceptions of their classroom psychosocial environments was used. Items were taken from four scales of a contemporary classroom environment instrument, the What is Happening in this Classroom (Aldridge & Fraser, 2000; Fraser, 1998). These scales assessed Interactions, Cooperation, Task Orientation, and Order and Organization in the classroom. Because of the problematic nature of conducting structural equation modelling with a large number of observed variables, a single classroom environment score based on a linear combination of item responses using factor scores as coefficients was computed and used in subsequent modelling. These factor scores were obtained from a confirmatory factor analysis (CFA). All classroom environment items employed a 5-point response format (viz. Strongly Disagree, Disagree, Not Sure, Agree, and Strongly Agree).

School environment. In an analogous manner to the assessment of classroom environment, school-level environment, was assessed with 36 items from an instrument employed previously in school environment research (Dorman, Fraser, & McRobbie, 1997). These items were from six underlying scales (viz. mission consensus, empowerment, student support, affiliation, professional interest, and resource adequacy). As with classroom environment, a single school environment score based on a linear combination of item responses using factor scores from a CFA as coefficients was computed. The response format for all school environment items was the same as for classroom environment items.

Role conflict, role ambiguity and role overload. Three 5-item scales that have been validated in previous research by Pettegrew and Wolf (1982) were used. These scales have been successfully used by Byrne (1994) in teacher burnout research in North America. All items employed a five point response format (viz. Strongly Disagree, Disagree, Not Sure, Agree, and Strongly Agree).

Table 1: Description of Sample

Gender	Age Group				Total
	<30	31-40	41-50	>50	
Male	7	19	22	24	72
Female	29	37	65	43	174
Total	36	56	87	67	246

Table 2: Descriptive Information for Nine Predictor and Three Burnout Scales

Scale	Scale Description	Number of Items	Sample Item
Classroom Environment	The extent to which the classroom is a high-quality psychosocial environment.	24	Students cooperate with each other when doing assignment work.
School Environment	The extent to which teachers experience a high-quality school-level psychosocial environment.	36	Teachers fell that they are authorized to make decisions in this school.
Work Pressure	The extent to which teachers experience work pressure.	6	Teachers have to work long hours to complete all their work.
Role Conflict	The extent to which two or more work demands are incompatible.	5	It is difficult to satisfy the conflicting demands of students, parents, and administration.
Role Ambiguity	The extent to which clear information about the role are absent.	5	I can predict what will be expected of me at school tomorrow.
Role Overload	The extent to which teachers feel overloaded in their teaching role.	5	I have to work beyond what should normally be expected of me.
Teaching Efficacy	The extent to which teachers believe that they are contributing significantly to the academic progress of their students and can effectively teach all students.	7	I can deal with almost any learning problem.
Self-Esteem	The extent to which teachers believe that they are capable, significant, successful and worthy.	7	People usually follow my ideas.
External Locus of Control	The extent to which a teacher has a generalized expectancy of external rather than internal control over reinforcement.	10	I feel that I have little influence over the school events that happen to me.
Emotional Exhaustion	The extent to which a teacher feels emotionally overextended and exhausted by work.	8	I fell emotionally drained from my teaching.
Depersonalisation	The extent to which a teacher is unfeeling and impersonal in responding towards others.	4	I don't really care what happens to some students.
Personal Accomplishment	The extent to which a teacher feels competent and is successful in one's work with people.	7	I have accomplished many worthwhile things in teaching.

Teaching efficacy. This 7-item scale is from the Patterns of Adaptive Learning Survey (PALS) (Midgley et al., 1997). Items employed the same five point response format used for the above scales.

Self-esteem. Seven items from the adult form of Coopersmith's (1981) Self-Esteem Inventory were used. A five-point scoring format was used (viz. Very Unlike Me, Unlike Me, Neither, Like Me, Very Like Me).

External locus of control. Byrne (1994) suggested the use of Rotter's Locus of Control scale (MacDonald, 1974; Rotter, 1966) as a measure of locus of control in burnout research. A modified 10-item form of Rotter's Locus of Control scale was used. Items relating to internal locus of control were reverse-scored so that scale scores were an indication of the respondent's perceived level of external locus of control. Items used a five point response format: 1 (Strongly Disagree), 2 (Disagree), 3 (Not Sure), 4 (Agree), and 5 (Strongly Agree).

Burnout. A set of 19 items from the latest version of the Maslach Burnout Inventory Form ES (MBI) (Maslach et al., 1996) which has been developed especially for educational institutions was used to provide a self-assessment of each teacher's perceived burnout level. The original 22-item MBI has three factor-analytically derived scales: emotional exhaustion, depersonalisation and personal accomplishment. Whereas emotional exhaustion and depersonalisation are positively related to burnout, personal accomplishment is negatively related to burnout. A five-point Likert response format ranging from Almost Never to Almost Always was used to score each item.

Data Analysis and Interpretation

To investigate relationships among the above variables, structural equation modelling (SEM) using LISREL 8.3 (Jöreskog & Sörbom,1993) was conducted. A weighted least squares (WLS) method with data from polychoric correlation and asymptotic covariance matrices was used in the analyses. The WLS method was preferred because item data had five response categories, and polychoric correlations rather than Pearson product–moment correlations were computed. In these circumstances, Jöreskog and Sörbom (1993) have argued that WLS is the appropriate method of analysis.

There were two distinct components to the analyses conducted in the present study. First, measurement models for each of the variables were explored. While confirming the measurement of a particular variable, each of these models provided factor scores to be used in generating composite factor scores from items. Using theory described by Holmes-Smith and Rowe (1994), these congeneric measurement models maximized the reliability of composite and latent variables. This was achieved by computing scale scores as linear combinations of items with factor scores as item coefficients. According to Holmes-Smith and Rowe, the composite score reliability (e.g. Cronbach alpha) is maximized if the weights on each item (i.e. coefficients) are corresponding factor scores rather than unity.

Second, computed composite variables were used subsequently in structural equation modelling that examined relationships among latent variables. Munck (1979) showed that path loadings (λ) and error variances (θ) for observed variables can be fixed in structural equation modelling and that, provided correlation matrices are analysed, they are related to reliability (r) by the formulae

$$\lambda = \sqrt{r} \qquad \text{and} \qquad \theta = 1 - r.$$

These formulae allow for paths from observed composite variables to latent variables and error variances of observed composite variables to be fixed. The advantage of this approach is that the number of parameters to be estimated by LISREL is sharply reduced with consequent improvement in model robustness.

Of the many indices available to report model fit, model comparison and model parsimony in structural equation modelling, three indices are reported in the present article: the Root Mean Square Error of Approximation (RMSEA), the Tucker-Lewis Index (TLI) and the Parsimony Normed Fit Index (PNFI). Whereas the RMSEA assesses model fit, the TLI and PNFI assess model comparison and model parsimony respectively. To interpret these indices, the following rules which are generally accepted in the SEM literature as reflecting good models

were adopted: RMSEA should be below .05 with perfect fit indicated by an index of zero, TLI should be above 0.90 with perfect fit indicated when TLI = 1.00, and PFNI should be above 0.50 with indices above 0.70 unlikely even in a very sound fitting model. Further discussion on indices and acceptable values is provided in Byrne (1998), Kelloway (1998) and Schumacker and Lomax (1998). While the use of χ^2 tests to report goodness of fit of the model to the data is acknowledged as problematic in SEM, it was used in the present study to report improvements to the overall model fit as post hoc adjustments were made.

Statistics reported in the present study included squared multiple correlation coefficients (R^2) for each structural equation and a total coefficient of determination (Jöreskog & Sörbom, 1989). While R^2 is a measure of the strength of a linear relationship, the total coefficient of determination is the amount of variance in the set of dependent variables explained by the set of independent variables. In addition to overall fit statistics, it is important to consider the strength and statistical significance of individual parameters in the model. Each path was tested using a *t*-test ($p < .05$).

RESULTS

Scale Statistics

Based on the approach described in the preceding section, optimal reliability coefficients (Cronbach Coefficient alpha) were computed for each scale (see Table 3). These results show that all scales had at least satisfactory internal consistency. Indices ranged from .66 for role ambiguity to .91 for school environment and compared favourably with those reported in previous learning environment and burnout research (e.g. Byrne, 1994; Dorman, Adams, & Ferguson, in press; Dorman et al., 1997; Maslach et al., 1996). Table 3 also shows values for λ and θ for each scale which provide a sound basis for examining the postulated structural model. Means and standard deviations for each scale are also shown in Table 3.

Table 3: Internal Consistency Reliability (Cronbach Coefficient α) , Path Loading (Composite Observer Variable to Latent Variable) and Error Variance and Scale Statistics for Nine Predictor and Three Burnout Scales

Scale	Coefficient α	Path Loading (λ)	Error Variance (θ)	Mean	Standard Deviation
Classroom Environment	.80	.89	.20	90.94	8.05
School Environment	.91	.95	.09	125.33	17.95
Work Pressure	.75	.87	.25	25.15	3.47
Role Conflict	.81	.90	.19	15.61	4.65
Role Ambiguity	.66	.81	.34	10.75	3.14
Role Overload	.78	.88	.22	16.63	4.11
Teaching Efficacy	.75	.87	.25	21.18	4.33
Self-Esteem	.69	.83	.31	25.85	4.09
External Locus of Control	.71	.84	.29	28.92	5.59
Emotional Exhaustion	.88	.94	.12	23.29	6.02
Depersonalisation	.71	.84	.29	7.17	2.61
Personal Accomplishment	.77	.88	.23	25.98	3.49

LISREL Analyses

The LISREL analysis of the postulated (initial) model shown in Figure 1 revealed a sound but not outstanding fit to the data. Fit and modification indices shown in Table 4 indicated that better fit might be achieved if one path (self-esteem → emotional exhaustion) was added to the model. Additionally, two paths (role ambiguity → self-esteem and role ambiguity → personal accomplishment) were not statistically significant ($\beta = .16$, $p = .11$ and $\beta = .31$, $p = .17$ respectively). Accordingly, role ambiguity was deleted from the model. Fit indices for this modified model improved with RMSEA reduced to .05. Two further model revisions involving the addition of two paths resulted in significant changes in χ^2 (see Table 4).

The final model fitted the data very well with an RMSEA of .03 and TLI of 1.00. Structural components of this model with standardized path coefficients are shown in Figure 2. All path coefficients in the final model were statistically significant ($p < .05$). The strength and direction of these coefficients are plausible. For example, role overload was a strong, positive predictor of work pressure ($\beta = .91$) which, in turn, positively predicted emotional exhaustion. Self-esteem was negatively related to both emotional exhaustion ($\beta = -.37$) and depersonalisation ($\beta = -.30$) but positively related to personal accomplishment ($\beta = .22$). The strongest negative relationship was between role conflict and school environment ($\beta = -1.07$).

The squared multiple correlation coefficient for the prediction of personal accomplishment (R^2) was computed to be .64 which indicates that 64% of variance in personal accomplishment could be explained by its contributing variables (viz. depersonalisation, self-esteem, teaching efficacy). Similarly, work pressure, classroom environment and self-esteem accounted for 69% of variance in emotional exhaustion. Over 46% of variance in depersonalisation was attributable to school environment, classroom environment, emotional exhaustion and self-esteem. The coefficient of determination for all structural equations jointly was computed to be .98. That is 98% of variance in the set of dependent variables (viz. school environment, work pressure, self-esteem, emotional exhaustion, depersonalisation and personal accomplishment was explained by the set of independent variables (viz. role overload, role conflict, classroom environment, teaching efficacy and external locus of control). Overall, Figure 2 provides a comprehensive structural model for burnout based on the data collected in the present study.

Table 4: Summary of Specifications and Fit Statistics for Tested Models of Burnout

Model	Actions	χ^2	df	$\Delta\chi^2$	Δdf	RMSEA	TLI	PNFI
1 (Initial)	-	89.87	37	-	-	.07	.99	.56
2	Role Ambiguity deleted from model. Path Self-Esteem → Emotional Exhaustion added.	64.42	38	25.45*	1	.05	.99	.57
3	Path Self-Esteem → Depersonalisation added.	52.08	37	12.34*	1	.04	.99	.56
4 (Final)	Path Classroom Environment → Depersonalisation added.	44.60	36	7.48*	1	.03	1.00	.54

* $p < .01$

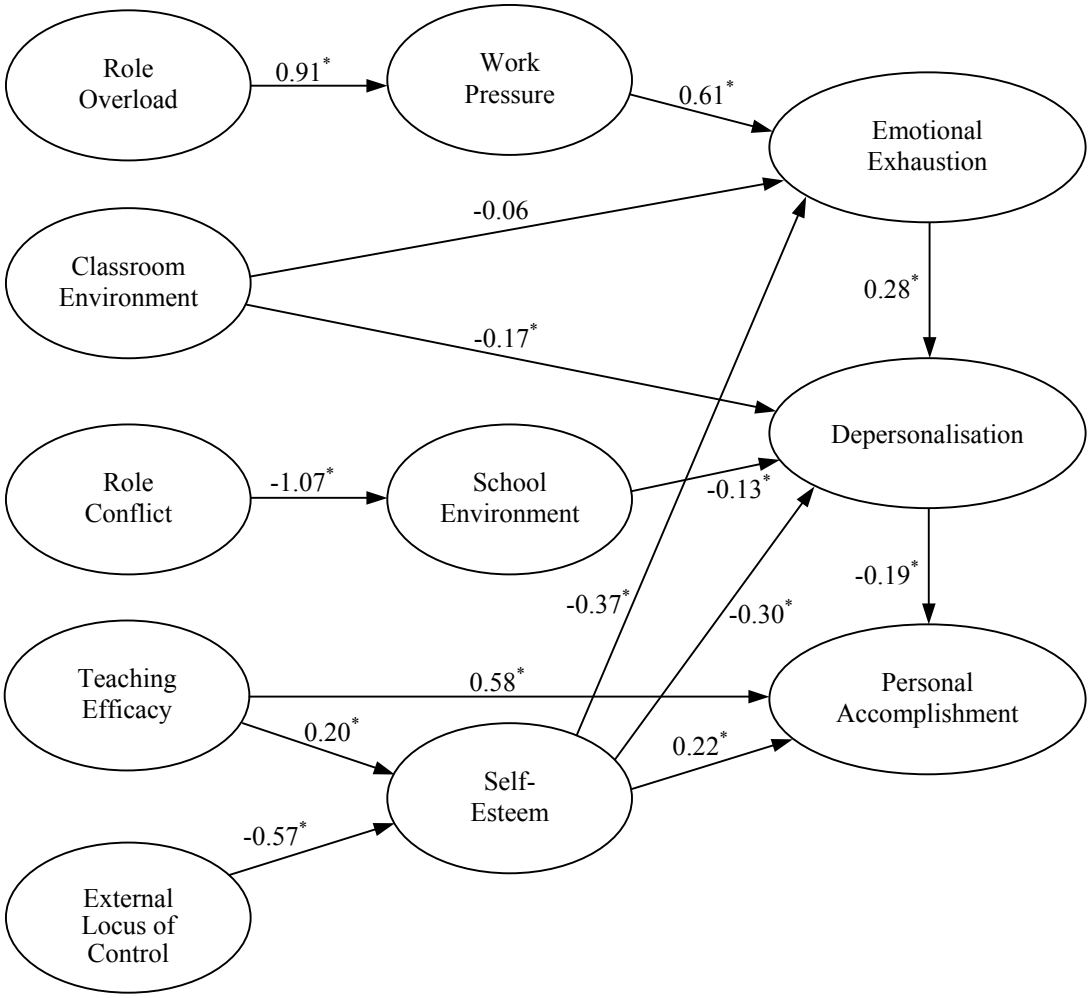

Figure 2. Structural model for teacher burnout
* $p<.05$

DISCUSSION

The results of this study can be discussed in terms of both the full model and specific organizational and personality variables. Holistically, the results support, to some degree, the burnout models for primary, intermediate and secondary school teachers developed by Byrne (1994). Those models involved role conflict, work overload, classroom climate, decision making, peer support, self-esteem and external locus of control as predictors of the same three burnout dimensions of the present study: emotional exhaustion, depersonalisation and personal accomplishment. However, differences in model structure among these three levels of schooling were evident. For example, Byrne found that external locus of control was a predictor of one burnout dimension (viz. personal accomplishment) for secondary teachers only. In the present study, the burnout predictors were role overload, role conflict, classroom environment, school environment, work pressure, teaching efficacy, self-esteem and external locus of control. It is particularly noteworthy that while role ambiguity was included in the present study as a possible burnout predictor, this variable was deleted from the final model.

This is consistent with Byrne's findings. Clearly, role ambiguity is not a significant predictor of burnout and its retention in future modelling is questionable.

One point of contrast between Byrne's research and the present study concerns the number of statistically significant paths. While Byrne found six statistically significant paths common to all three types of school teachers, the present study identified 12 such paths. While this difference could be due to the additional variables included in the present study (e.g. school environment, work pressure, teaching efficacy), it could also be due to two other characteristics of the present study: improved instrumentation and the data modelling approaches employed. The classroom and school environment scales were based on the latest instrumentation in learning environment research. Teaching efficacy was assessed with a well-validated scale developed by Midgley et al. (1997). In addition, data modelling involved congeneric measurement models that maximized reliabilities and facilitated the fixing of path loadings and error variances for observed variables in structural equation modelling.

With regard to the organizational variables that impacted on teacher burnout, role overload was a potent variable. It influenced work pressure and subsequently emotional exhaustion. Clearly, teachers who experience significant role overload reported high levels of work pressure and this pressure leads to increased levels of emotional exhaustion. Role conflict was also a potent negative predictor of school environment which, in turn predicted negatively depersonalisation. While Byrne's model did not include school environment as a possible predictor or mediating variable of burnout, it did find that role conflict influenced depersonalisation in secondary teachers only. That role conflict influences negatively teachers' perceptions of overall school environment is not surprising. If teachers are confused about their work demands, they are not likely to report a positive overall working environment. The negative relationship between school environment and depersonalisation supports the finding of the only study linking school environment and burnout in Australian and Singaporean schools (see Ball, Moselle, & Fraser, 1995). In that study, significant associations were found between six of the seven dimensions of the School-Level Environment Questionnaire (SLEQ) (Fraser, 1994) and depersonalisation. Positive school environments were associated with reduced levels of depersonalisation.

The final organizational variable, classroom environment was found to have significant negative relationships with emotional exhaustion and depersonalisation. While this finding supports Byrne's contention that classroom environment is a key nomological predictor of burnout, it should be noted that the present study used a set of items with a Cronbach Coefficient alpha of .80 from the WIHIC – an instrument developed within contemporary learning environment research (see Fraser, 1998). Byrne used Bacharach, Bauer and Conley's (1986) Classroom Environment Scale which reported a Cronbach Coefficient alpha of .60. It is recommended that future burnout research employ scales that have been developed within the generally accepted framework for studying classroom environments.

The three personality variables, teaching efficacy, external locus of control and self-esteem were all predictors of personal accomplishment. However, while teaching efficacy has a significant direct effect on personal accomplishment and an indirect effect via self-esteem, external locus of control had only an indirect negative effect via self-esteem. Clearly, teachers with an elevated external locus of control tended to have reduced self-esteem which then reduced personal accomplishment. Additionally, self-esteem had significant negative effects on emotional exhaustion and depersonalisation. These effects are highly plausible.

Finally, it is clear that the present modelling supports the hypothesized intraburnout relationships of emotional exhaustion influencing positively depersonalisation which subsequently influences negatively personal accomplishment. It is noteworthy that the direction and strength of these relationships are consistent with those reported by Byrne (1994) for intermediate and secondary school teachers.

CONCLUSION

The issue of teacher burnout is very important to schools and school systems. For too long, teacher burnout has been explained largely in terms of individual teacher personality characteristics. Such a narrow set of predictors has suited employers who do not wish to accept any moral or legal responsibility for burning out teachers through poor organizational and managerial processes. The present research focused on both organizational variables and personality factors of individual teachers. It has reported the validation of a nomological network of burnout for teachers by building upon and extending prior research in the burnout area, principally the work of Byrne (1994).

This Australian research needs to be complemented by further research in Western countries so that a widely generalizable model for teacher burnout can be developed and a theory of teacher burnout firmly established.

One direction for future research would be the validation of the model of teacher burnout postulated recently by Maslach and Leiter (1999). In this elaborate model, political, policy and economic contexts, school ecology, task qualities (the work of teachers), organizational characteristics and teacher person qualities combine to predict burnout. Consequences of burnout are teacher behaviour which influences student perceptions and evaluation, and subsequent student behaviours and outcomes. While it might be desirable to have simple solutions to the teacher burnout issue, the reality is that, as Maslach (1999) suggests, such a complex social phenomenon will require complex solutions.

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