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## **The Fallacy of Laissez-Faire Leadership: A Multilevel Analysis of the Influence of Leadership Avoidance Behaviours on Aspects of School Learning Environment**

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Effective schools literature has emphasised the leadership roles played by school principals in influencing a school's learning environment and teacher satisfaction outcomes. Moreover, transformational leadership theory has provided a new perspective from which to view these relations. Advocates of transformational and transactional leadership behaviour claim the ability to effectively manipulate their environments to achieve their organisational objectives. However, a third type of leadership behaviour, laissez-faire leadership, was demonstrated to have marked positive effects on a number of school learning environment constructs. This paper reports on an investigation of the relation between laissez faire leadership behaviours of school principals in NSW public secondary schools and seven dimensions of school learning environment. A survey was conducted across 52 secondary schools in NSW, Australia, involving 458 respondents. Data was gathered on the leadership style of school principals and seven school learning environment constructs. Multilevel modelling analysis was used to explore the relation between laissez-faire leadership behaviour and the school learning environment dimensions both at the teacher and the school level. Laissez-faire leadership behaviours demonstrated a differential impact on school learning environment, in some cases more influential than alternative types of leadership behaviour.

### **Introduction**

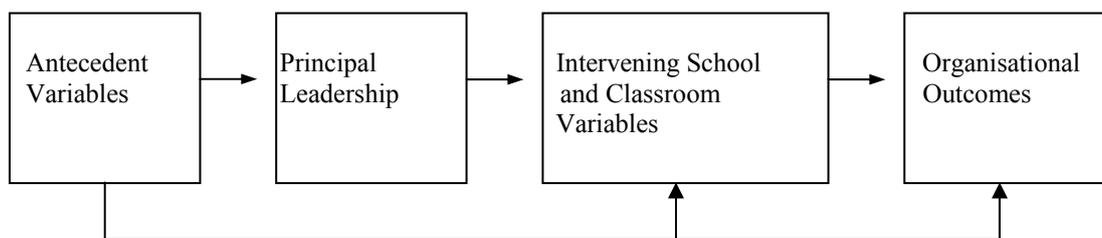
Effective schools research over the past two decades has been directed at exploring the influence of principal's leadership behaviours and the achievement of school goals (Shum & Cheng, 1997). Researchers have been particularly interested in examining those leadership strategies that do not require the spending of additional funding, yet that have the ability to help schools reach their strategic outcomes (Wyatt, 1996). Recent developments in leadership theory (Burns, 1978; Bass, 1985; Bass & Avolio, 1994; Leithwood & Jantzi, 1990) have allowed new perspectives from which to view these leadership relations from, including those exerted by principals in the management and leadership of their schools. However, do different leadership style effect differential outcomes as far as their influence on aspects of school learning environment is concerned, and do perceived negative leadership styles (such as avoidance of decision making) have negative effects on these same school learning environment constructs?

Among the new leadership paradigms is the transformational and transactional model (Burns, 1978; Bass, 1985; Bass & Avolio 1997). The model of transformational leadership hypothesises that follower performance can be lifted to a level beyond that which would be normally expected. Further, it is claimed that transformational leaders are more able to manipulate and alter their environmental constraints in order to achieve their performance goals (Kirby, King & Paradise, 1992).

### *Theoretical Framework*

This paper reports on a quantitative study that evaluated the influence of transformational, transactional and laissez-faire leadership behaviours on teachers' perceptions of seven school learning environment constructs. A quantitative survey was conducted in 52 secondary schools, involving 458 respondents across NSW, and a multilevel modelling analysis was used to explore the relation between principal's leadership styles and teachers' perception of seven school learning environment constructs, including student supportiveness, affiliation, professional interest, centralization, innovation, resource adequacy and achievement orientation.

A mediated-effects model (Hallinger & Heck, 1998, p.162; Figure 1) was used to examine the relations between principal's leadership style behaviours and administrator effects within schools. This model recognises that antecedent variables can have an important causal influence that effect desired outcomes such as teacher satisfaction, and that teachers' perceptions of these outcomes will be mediated not only by principal's leadership style, but by school and classroom level constructs such as school learning environment and school culture as well.



**Figure 1.** Theoretical framework guiding research on leadership, school learning environment and selected teacher outcomes.

### *Transformational, Transactional and Laissez-Faire Leadership*

Transformational leadership is hypothesised to occur when leaders and followers unite in pursuit of higher order common goals, when "one or more persons engage with others in such a way that leaders and followers raise one another to higher levels of motivation and morality" (Burns, 1978, p. 20). This implies that the leader-follower relationship is one in which the purposes of both become fused, creating unity and collective purpose (Barker, 1990). The leader motivates followers to "work for transcendental goals instead of immediate self-interest, for achievement and self-actualisation rather than safety and security" (Murray & Feitler, 1989, p. 3), and creates within followers a capacity to develop higher levels of commitment to organisational goals (Leithwood & Jantzi, 2000).

Transactional leadership is hypothesised to occur when there is a simple exchange of one thing for another. Burns (1978, p. 19) argued that transactional leadership occurs "when one person takes the initiative in making contact with others for the purpose of exchange of valued things". In this relationship the leader and the led exchange needs and services in order to accomplish independent objectives (Barker, 1990; Kirby, Paradise & King, 1992).

Bass et al. (1997) conceptualised a third type of leadership, laissez-faire leadership, which was hypothesised to occur when there is an absence or avoidance of leadership. In this case decisions are delayed, and reward for involvement absent. No attempt is made to motivate followers, or to recognise and satisfy their needs (Bass & Avolio, 1997).

Transformational leadership models emphasize that "transformational leaders are able to alter their environments" to meet their desired outcomes (Kirby, King & Paradise, 1992, p. 303). Transformational school leaders do this by promoting educational restructuring and innovation, focusing on building vision, encouraging collaborative participation and raising the role of followers to that of leader (Silins, 1994).

### *School Learning Environment*

School learning environment refers to that set of factors that can be regarded as influencing the feel or personality that a school exudes. School learning environment can also be defined as that set of internal characteristics that distinguishes one school from another and influences the behaviour of its members, both staff and students (Hoy & Miskel, 1987).

Fraser (1986) argued that school learning environment factors could operate at both classroom and at school levels. Although both are related, school-level environments are more global. A classroom climate may be limited to involve relationships between student and student and between student and teacher within the boundaries of an individual room.

There are many factors that have the potential to influence the personality of a school. Rentoul and Fraser (1983) developed a schema of factors based on the work of Moo's (cited in Rentoul & Fraser, 1983), who delineated three conceptual approaches to measuring human environments. These were referred to as the dimensions of organisational structure, personal characteristics of milieu inhabitants and psychosocial characteristics and organisational climate. The School Level Environment Questionnaire (SLEQ) (Rentoul & Fraser, 1983) focuses on three psychosocial characteristics of a school when measuring school learning

environment, including relationship dimensions, personal development dimensions and system maintenance and system change dimensions. In particular, the two relationship dimensions considered in this paper are student supportiveness, or the degree to which there is good rapport between teachers and students, and students behave in a responsible manner; and affiliation, or the degree of collegiality that exists between staff members.

### **The Purpose of the Study**

This paper reports on the first phase of a multimethod study that examined the influence of principal's leadership style behaviours on seven school learning environment constructs. Specifically, this paper focuses on examining the effects of laissez-faire leadership style behaviour and considers the impact it has on teachers' perceptions of seven school learning environment constructs using a sophisticated multilevel modelling technique.

#### *Method*

In this part of the study, government schools in New South Wales were grouped into forty administrative districts, each with its own District Office, District Superintendent and support staff. Schools were randomly ordered within their administrative districts. The first, second and third schools within each district were contacted regarding possible involvement in this study. Of the 117 schools contacted, 52 secondary schools from 31 regions agreed to participate in this study. After data cleaning, the total sample size consisted of 458 staff and 49 principals.

#### *Teacher Demographics*

In the quantitative phase of the study, the staff sample size ( $n=458$ ) consisted of 200 males (43.7%) and 235 (51.3%) females (missing = 23 or 5.0%), the majority of whom (60.0%) were full time teachers. A smaller number ( $n=132$ ) came from promotions positions held within their schools (28.9%). The majority of respondents ( $n=340$ ; 74.2%) had more than 11 years teaching experience, and had been in their current school for more than 6 years (49.1%). 291 staff (63.5%) reported teaching within their current principal for more than 2 years.

#### *Instruments*

The Multifactor Leadership Questionnaire (5X - Short) (Bass & Avolio, 1997) was used to examine transformational and transactional leadership constructs. Although this instrument reportedly measures five transformational and four transactional constructs, data analysis, confirmatory factor analysis could only identify one transformational factor, vision and one hybrid transformational / transactional factor, individualised consideration. Further, a non-leadership factor, laissez-faire leadership, was also extracted from the data set.

The School Learning Environment Questionnaire (SLEQ) developed by Fraser (1986) was used to examine eight learning environment constructs. Again, confirmatory factor analysis could only find support for seven of Fraser's (1986) eight original constructs, and included Student Supportiveness, Affiliation, Professional Interest, Centralisation, Innovation, Resource Adequacy and Achievement Orientation.

Of particular interest in this paper is the question of whether perceived negative leadership style behaviour, laissez-faire leadership, has negative influences on teachers' perceptions of school learning environment.

### **Phase 1: Quantitative Study**

#### *Identification of the variables*

Confirmatory factor analysis techniques were applied to the data gathered from 458 teachers in 52 schools across New South Wales. Fit indices for the three-factor leadership model indicate a chi square value of 321.229 ( $df = 101$ ) was obtained for this solution, and the accompanying fit statistics indicated a very good fit (TLI = .928; RNI = .940; RMSEA = 0.0691). All these fit statistics were well within the acceptable range

for being considered a good fit. The seven-factor school learning environment model indicated acceptable fit statistics, with TLI, RNI and RMSEA indices recorded at .928, .940 and 0.0691 respectively.

### *Levels of analysis*

Multilevel regression models were fitted to each of the seven teachers' perceptions of school learning environment scores. The power of multilevel analysis lies in the fact that the influence of explanatory variables can be considered on multiple levels. Further, the school learning environment and leadership constructs are group perception constructs and lend themselves to analysis from a group level perspective. To facilitate this individual teacher responses were aggregated to obtain group level means, which were used in the analysis. The analysis could also consider the variation in teacher level scores of group level variables.

### *Data Analysis*

Data was collected using the MLQ-5X (Short) and SLEQ instruments along with a number of demographic and teacher outcome based questions. Initially the data were screened and examined for outliers and missing data using PRELIS 2.30 (Joreskog & Sorbom, 2003; Rowe, 2000) before fitting explanatory multilevel models. Cases with more than 20% missing data were discarded. The EM method (Joreskog & Sorbom, 2003) of estimation of missing data was employed to impute missing values for the remaining cases, which in total accounted for less than 5% of the scores in the data set.

Factor scale scores for each of the variables used in the study were calculated. After examining the underlying structure of the constructs used in the analysis using confirmatory factor analysis, a multilevel modelling technique was employed to examine the relation between variables. Multilevel modelling techniques were then applied to examine the relation between a principal's leadership style and the seven teachers' perceptions of school learning environment scores.

### *Multilevel Modelling*

Multilevel modelling provides a useful analytical tool with which to examine the relations between the explanatory variables (vision, individualised consideration and laissez-faire leadership) and teachers' perception of satisfaction with leadership scores. While multilevel modelling does not infer causality between the variables examined, it is particularly suited to this application, as the data has a nested data structure. This allows relationships to be examined both at a teacher level and a school level.

## **Results and Discussion**

Of interest in this study is the influence of a supposedly negative leadership style behaviour (laissez-faire leadership) on teachers' perceptions of each of the seven school learning environment constructs under examination. In three of the seven school learning environment constructs, principal's laissez-faire style leadership behaviour was demonstrated to have a positive influence on teachers' perception scores.

### **1. Student Supportiveness**

Student supportiveness can be defined as teacher perceptions of the level of rapport between teachers and students, and that students are perceived to behave in a responsible manner. Initially, a two level variance component model was fitted to the data in order to determine the proportion of variance in both the response and explanatory variables. The results are shown in Table 1 (Multilevel Model 1).

Multilevel Model 2 (Table 1) indicates the result of fitting the three leadership explanatory variables, vision (VIs), individualised consideration (ICs) and laissez faire leadership (LFs) to teachers' student supportiveness scores. This was done in order to assess whether the response variable was in anyway influenced by the leadership explanatory variables without first taking into account the complicating influence of other explanatory variables. The ratio of the parameter estimate and standard error for each of the leadership explanatory variables indicate that none of the three leadership factors are statistically significant in influencing teachers' perceptions of student supportiveness.

Table 1

Variation in Teachers' Student Supportiveness Scores (N=458) in 52 Schools.

Explanatory Variables	Multilevel Model 1	Multilevel Model 2	Multilevel Model 3	Multilevel Model 4	Multilevel Model 5	Multilevel Model 6	Reduced Model 6
<b>Fixed:</b>							
Constant							
( $\beta_0; X_0$ ):	-0.005	-0.002	.001	.001	-0.004	-0.009	-0.011
<b>School Level Demographics</b>							
$X_1$ <i>Teachs</i> ( $\beta_1$ )			.105	.122	.128	-.008	
$X_2$ <i>Texps</i> ( $\beta_2$ )			<b>.274</b>	<b>.236</b>	<b>.252</b>	<b>.386</b>	<b>.348</b>
$X_3$ <i>Ssizs</i> ( $\beta_3$ )			.046	.048	.047	.036	
$X_4$ <i>Tages</i> ( $\beta_4$ )			-.157	-.101	-.130	-.192	<b>-.199</b>
$X_5$ <i>Tgens</i> ( $\beta_5$ )			<b>.171</b>	<b>.169</b>	<b>.192</b>	<b>.237</b>	<b>-.209</b>
$X_6$ <i>Pgens</i> ( $\beta_6$ )			.067	.060	.093	<b>.209</b>	<b>.182</b>
<b>Teacher Level Demographics</b>							
$X_7$ <i>Teacht</i> ( $\beta_7$ )				<b>-.095</b>	<b>-.095</b>	<b>-.093</b>	<b>-.089</b>
$X_8$ <i>Texpt</i> ( $\beta_8$ )				.067	.069	.067	
$X_9$ <i>Tcurt</i> ( $\beta_9$ )				-.031	-.033	-.034	
$X_{10}$ <i>Taget</i> ( $\beta_{10}$ )				-.112	-.112	-.111	
$X_{11}$ <i>Tgent</i> ( $\beta_{11}$ )				-.006	-.006	-.007	
$X_{12}$ <i>TSCPt</i> ( $\beta_{12}$ )				.018	.014	.023	
<b>School Level Leadership</b>							
$X_{13}$ <i>VIs</i> ( $\beta_{13}$ )		.102			-.002	.060	
$X_{14}$ <i>ICs</i> ( $\beta_{14}$ )		-.133			.015	.065	
$X_{15}$ <i>LFs</i> ( $\beta_{15}$ )		.021			.120	<b>.257</b>	<b>.185</b>
<b>School Level School Learning Environment</b>							
$X_{16}$ <i>SSs</i> ( $\beta_{16}$ )						na	na
$X_{17}$ <i>AFs</i> ( $\beta_{17}$ )						.048	
$X_{18}$ <i>PIs</i> ( $\beta_{18}$ )						-.139	
$X_{19}$ <i>CENs</i> ( $\beta_{19}$ )						.000	
$X_{20}$ <i>INNs</i> ( $\beta_{20}$ )						.061	
$X_{21}$ <i>RAs</i> ( $\beta_{21}$ )						<b>.266</b>	<b>.239</b>
$X_{22}$ <i>AOs</i> ( $\beta_{22}$ )						<b>-.149</b>	<b>-.133</b>
<b>Random:</b>							
$u_{0j}$ (School-level)	<b>.252</b>	<b>.239</b>	<b>.161</b>	<b>.170</b>	<b>.157</b>	<b>.082</b>	<b>.100</b>
$e_{0ij}$ (Teacher-level)	<b>.689</b>	<b>.690</b>	<b>.694</b>	<b>.677</b>	<b>.677</b>	<b>.680</b>	<b>.685</b>
% of Variance Explained		1.3%	9.1%	9.9%	11.4%	19.0%	16.6%
-2 (Log-Likelihood)	1200.875	1199.389	1187.909	1179.201	1176.857	1159.288	1167.733

NOTE: IGLS solutions shown; fitted parameter estimates.

Statistically significant beyond the  $p < .05$  level by univariate two tailed test i.e. the parameter estimate is greater than twice its standard error (bold); "na" indicates that the associated school learning environment variable was omitted from the analysis.

Four "blocks" of explanatory variables were then examined to account for the variance found in this response variable. Multilevel Model 3 (Table 1) indicates the results of adding in the first block of school level explanatory demographic variables. This block of school-average level demographic explanatory variables together explained 9.1% of the variance recorded in the data scores for teachers' student supportiveness (SSs) scores. An analysis of the effect of a block of school level demographic variables indicated that two variables, teacher experience (Texps) and teacher gender (Tgens) had a positive, statistically significant influence on teachers' perceptions of student supportiveness (SSs) scores. School-average teacher experience (Texps) is the average experience level of teachers who participated in the survey, while teacher gender (Tgens) is defined as the proportion of female or male teachers in a particular school. These results suggest that as the school-average level of experience increases, teachers' perceptions of student supportiveness increases. The statistically significant, positive influence of teacher gender (Tgens) on student supportiveness (SSs) scores is reflective of the fact that the schools with greater proportions of female teachers perceive student supportiveness to be higher. The large decrease in the school level parameter estimate when compared with the teacher level parameter estimate in the random part of the model (Model 1; .252(.067) to Model 3; .161(.049)) indicates that much of the variance at the school level can be explained in terms of this block of school-level demographic variables.

Multilevel Model 4 (Table 1) shows the influence of adding in teacher level demographic explanatory variables in accounting for variation in teachers' student supportiveness scores. The teacher level demographic explanatory variable of teacher position (Teach $t$ ) is indicated as having a statistically significant, negative influence on teachers' student supportiveness scores. This suggests that more experienced teachers perceive that as teachers become more senior in terms of their administrative position in schools, the less supportive of students they become. This may well reflect a department head's focus on curriculum, teaching, and learning issues rather than on student welfare issues. The school level demographic explanatory variables teacher experience (Texps) and teacher gender (Tgens) continue to indicate statistical significance, as was previously explained. However, there was a marginal decline in the parameter estimates for each of these variables.

The random part of the model indicates that the variance accounted for by the combination of these explanatory variables is statistically significant, both at the school level and the teacher level. The analysis shows that residual variance at teacher level actually increases whereas there is a decrease in the residual variance at the school level. As expected, the introduction of this block of teacher-level demographic variables led to a decrease in the residual variance at the teacher level (.694 in Model 3 vs. .677 in Model 4; see Table 5.1). The change in the log likelihood statistic between Multilevel Model 3 and Multilevel Model 4 also confirms the statistical significance of this block of explanatory variables.

Multilevel Model 5 (Table 1) shows the cumulative effect of adding three leadership explanatory variables in combination with school-average and teacher demographic variables in accounting for variance in teachers' student supportiveness scores. Again, the explanatory variables (teacher experience (Texps), teacher gender (Tgens) at school average level, and teacher position (Teach $t$ ) at teacher level) that were indicated in earlier models are still shown to be statistically significant. However, the addition of the three leadership explanatory variables demonstrated no statistical significance. The change in the log likelihood statistic also indicates that there is no statistically significant influence of the three leadership variables on teachers' student supportiveness (SSs) scores.

Multilevel Model 6 (Table 5.1) indicates the cumulative effect of adding in six school-average level school learning environment explanatory variables in accounting for variation in teachers' student supportiveness scores. As was the case in previous models, the school-average level demographic variables of teacher experience (Texps) and teacher gender (Tgens), along with the teacher level demographic variable of teacher position (Teach $t$ ) are indicated as being statistically significant. An analysis of the block of school learning environment explanatory variables indicates that resource adequacy (RAs) has a statistically significant, positive influence on teachers' student supportiveness scores, while achievement orientation (AOs) has a statistically significant, negative influence on these scores. The addition of the school learning environment explanatory variables has resulted in the leadership explanatory variable laissez faire leadership (LFs) being statistically significant. Hence, after controlling for all of the school and teacher demographic variables, the effect of laissez faire leadership (LFs) on student supportiveness is positive.

Reduced Multilevel Model 6 (Table 1) indicates the aggregated effects of all statistically significant explanatory variables considered in this analysis. Four variables are indicated as having a statistically significant positive influence on teachers' perceptions of student supportiveness. They include teacher experience (Texps) and principal gender (Pgens) at the school-average level, and resource adequacy (RAs) at the school-average level. Laissez-faire leadership is also indicated as having a statistically significant, positive influence on teachers' student supportiveness scores. Four explanatory variables are shown as having a statistically significant, negative influence on teachers' student supportiveness scores. They include teacher age (Tages) and teacher gender (Tgens) at the school-average level, and teacher position (Teacht) at the teacher level. Achievement orientation (AOs) is also indicated as having a statistically significant, negative effect on teacher perceptions of student supportiveness. Together, these explanatory variables account for 16.6% of the explained variance, with the change in the school level parameter estimate indicating that this explained variance is at this level. Interestingly, the transformational leadership behaviour of visionary leadership and transformational/transactional leadership style of individualised consideration did not have a statistically significant influence on teachers' scores of student supportiveness. This is considered an unexpected and provocative result given the literature in this area. Furthermore, the laissez-faire leadership style behaviour (LFs) was indicated as having a statistically significant, positive influence on teachers' perceptions of student supportiveness (SSs). This indicates that as teacher perceptions of principal's laissez-faire style behaviour increases, teacher perceptions of student supportiveness also increase.

There are several factors that influenced teachers' perceptions of student supportiveness (SSs). While it was anticipated that principal leadership would influence teacher perceptions of student supportiveness (SSs), it was unexpected that student supportiveness (SSs) as a school learning environment relational dimension would be unaffected by principals' individualised consideration (ICs) behaviours. Individualised consideration (ICs) behaviours emphasise the personal interaction between principal and staff member. It was further unexpected that a principal's visionary leadership style would not be related to teachers' perceptions of student supportiveness (SSs), given the emphasis that most schools place on creating a caring and supportive environment in their published vision statements. Contrary to expectation and as far as leadership styles are concerned, this analysis has demonstrated that it is the principal's laissez-faire behaviours in conjunction with other variables that influence teachers' perceptions of student supportiveness (SSs). This suppression effect is common in regression and multilevel modelling, namely that one variable, laissez-faire (LFs) leadership becomes statistically significant as other variables were considered in the analysis. Among the other variables considered, teacher perceptions of resource availability (RAs) and teacher experience (Texpt) were indicated as having a strong, statistically significant positive effect on perceptions of student supportiveness (SSs).

## 2. Affiliation

In the same way as outlined for student supportiveness, a multilevel regression model was fitted to teachers' affiliation scores. Affiliation can be defined as the perception of collegiality among staff, and the degree to which staff perceive they can obtain assistance and advice from other staff members.

Multilevel Model 2 (Table 2) indicates the effect of considering the three leadership factors (vision (VIs), individualised consideration (ICs) and laissez faire leadership (LFs)) as explanatory variables in accounting for variations in teachers' affiliation scores. This set of three explanatory leadership variables accounted for 2.9% of the variance, with individualised consideration (ICs) and laissez-faire (LFs) leadership styles indicated as being statistically significant and positive. This indicates that as teacher perception of a principal's individualised consideration (ICs) and laissez-faire (LFs) leadership behaviour increases, so does teacher perception of affiliation.

Multilevel Model 3 (Table 2) shows the effect of school-average level demographic variables as explanatory variables influencing teachers' affiliation scores. None of the individual school level variables was indicated as being statistically significant, and the block as a whole accounted for 1.9% of the recorded variance, and all of the residual variance was at the teacher level. The change in the log likelihood statistic between Models 1 and 3 also indicated that this block of variables was statistically non-significant. Multilevel Model 4 (Table 2) adds in the combined effect of teacher level demographic factors as explanatory variables in accounting for changes in teachers' affiliation scores. No individual teacher level demographic variable was indicated as being statistically significant.

Table 2

Variation in Teachers' Affiliation Scores (N=458) in 52 Schools.

<b>Explanatory Variables</b>	<b>Multilevel Model 1</b>	<b>Multilevel Model 2</b>	<b>Multilevel Model 3</b>	<b>Multilevel Model 4</b>	<b>Multilevel Model 5</b>	<b>Multilevel Model 6</b>	<b>Reduced Model 6</b>
<b>Fixed:</b>							
Constant							
( $\beta_{0j}X_0$ ):	-0.11	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12
<b>School Level</b>							
<b>Demographics</b>							
$X_1$ <i>Teachs</i> ( $\beta_1$ )			.031	.033	.060	.036	
$X_2$ <i>Texps</i> ( $\beta_2$ )			.024	.005	-.005	-.056	
$X_3$ <i>Ssizs</i> ( $\beta_3$ )			-.068	-.065	-.033	-.034	
$X_4$ <i>Tages</i> ( $\beta_4$ )			.024	.056	.064	.102	
$X_5$ <i>Tgens</i> ( $\beta_5$ )			.087	.088	.092	.050	
$X_6$ <i>Pgens</i> ( $\beta_6$ )			-.050	-.045	.000	-.012	
<b>Teacher Level</b>							
<b>Demographics</b>							
$X_7$ <i>Teacht</i> ( $\beta_7$ )				-.065	-.059	-.066	
$X_8$ <i>Texpt</i> ( $\beta_8$ )				-.026	-.031	-.027	
$X_9$ <i>Tcurt</i> ( $\beta_9$ )				.066	.065	.073	
$X_{10}$ <i>Taget</i> ( $\beta_{10}$ )				-.052	-.050	-.053	
$X_{11}$ <i>Tgent</i> ( $\beta_{11}$ )				.021	.019	.021	
$X_{12}$ <i>TSCPt</i> ( $\beta_{12}$ )				.032	.057	.025	
<b>School Level</b>							
<b>Leadership</b>							
$X_{13}$ <i>VI<math>s</math></i> ( $\beta_{13}$ )		.076			.085	.117	
$X_{14}$ <i>IC<math>s</math></i> ( $\beta_{14}$ )		<b>.150</b>			.152	.138	<b>.182</b>
$X_{15}$ <i>LF<math>s</math></i> ( $\beta_{15}$ )		<b>.198</b>			<b>.202</b>	<b>.248</b>	<b>.209</b>
<b>School Level</b>							
<b>School Learning Environment</b>							
$X_{16}$ <i>SS<math>s</math></i> ( $\beta_{16}$ )						.000	
$X_{17}$ <i>AFF<math>s</math></i> ( $\beta_{17}$ )						na	na
$X_{18}$ <i>PI<math>s</math></i> ( $\beta_{18}$ )						.120	<b>.124</b>
$X_{19}$ <i>CEN<math>s</math></i> ( $\beta_{19}$ )						-.030	
$X_{20}$ <i>INN<math>s</math></i> ( $\beta_{20}$ )						-.015	
$X_{21}$ <i>RA<math>s</math></i> ( $\beta_{21}$ )						.115	<b>.102</b>
$X_{22}$ <i>AO<math>s</math></i> ( $\beta_{22}$ )						-.021	
<b>Random:</b>							
$u_{0j}$ (School-level)	.014	.000	.000	.000	.000	.000	.000
$e_{0ij}$ (Teacher-level)	<b>.924</b>	<b>.911</b>	<b>.920</b>	<b>.912</b>	<b>.889</b>	<b>.869</b>	<b>.887</b>
% of Variance Explained		2.9%	1.9%	2.8%	5.2%	7.4%	5.4%
-2 (Log-Likelihood)	1270.179	1257.185	1261.677	1257.805	1245.909	1235.513	1244.670

NOTE: IGLS solutions shown; fitted parameter estimates.

Statistically significant beyond the  $p < .05$  level by univariate two tailed test i.e. the parameter estimate is greater than twice its standard error (bold); "na" indicates that the associated school learning environment variable was omitted from the analysis.

Multilevel Model 5 (Table 2) indicates the combined effect of the three leadership factors as explanatory variables in accounting for the variation in teachers' affiliation scores. While Multilevel Model 2 (Table 2) indicated that individualised consideration (ICs) and laissez-faire leadership (LFs) were statistically significant, only laissez-faire leadership (LFs) has remained statistically significant (Multilevel Model 5) when its effect is considered in conjunction with the other school and teacher level demographic variables.

The issue of the importance of these effects needs to be carefully considered, as the interpretation of any results is dependent on the causal ordering of explanatory variables as they are introduced to the model. If a variable such as individualised consideration (ICs) comes first in the causal ordering of explanatory variables, then the effect of individualised consideration (ICs) will be mediated by other variables as they are considered in the analysis. Further, as this analysis consists of only a single wave of data, it is perhaps more appropriate to consider the effect of individualised consideration (ICs) as having a mediated effect, its influence being negated by the inclusion of other explanatory variables.

Multilevel Model 6 includes the influence of school-average level school learning environment explanatory variables. Although these additional explanatory variables accounted for an additional 2.2% of the recorded variance (the difference in % of variance explained between Multilevel Models 5 and 6), initially none are indicated as having any statistical significance. In Reduced Multilevel Model 6 (Table 2), all non-statistically significant explanatory variables were removed to produce a final solution. The random part of the model indicated that 100% of the residual variance recorded in teachers' affiliation scores is at the teacher level. Four explanatory variables accounted for 5.4% of the recorded variation in teachers' affiliation scores, and included individualised consideration (ICs), laissez-faire leadership (LFs), professional interest (PIs) and resource adequacy (RAs). Each of these four explanatory variables was indicated as having a positive influence on teachers' affiliation scores.

As far as the relation between school learning environment variables and principal leadership behaviours is concerned, this analysis has demonstrated that teachers' perception of affiliation within schools is influenced by principal's individualised consideration (ICs) and laissez-faire (LFs) leadership behaviours. This is suggestive that as principals demonstrate increasing individualised consideration (ICs) behaviour, teachers perceive an increase in overall affiliation in their schools. While the relation between individualised consideration behaviours and teacher affiliation is expected, principal's laissez-faire leadership style also is indicated as having a positive influence on teachers' perception of affiliation, and may possibly reflect a substitutionary leadership effect (Kerr & Jermier, 1978; Swenson, 2000) that groups of teachers can experience in the presence of disinterested leadership.

### 3. Achievement Orientation

Achievement orientation refers to the degree to which teachers expect and value high student achievement. Table 3 indicates the results of fitting multilevel regression models to teachers' achievement orientation scores. Multilevel Model 1 (Table 3) shows the result of fitting a two level variance component model to teachers' achievement orientation scores. The random part of the model indicates that most of the statistically significant variance is at the teacher level.

Multilevel Model 2 (Table 3) examines the influence of the three leadership variables alone in accounting for the variance in teachers' achievement orientation scores. While together these three explanatory variables account for 2.5% of the recorded variance in teachers' scores, only laissez-faire leadership (LFs) is indicated as having a positive yet statistically significant influence on teachers' achievement orientation scores.

Multilevel Models 3 to 6 (Table 3) show the cumulative addition of four blocks of explanatory variables to account for the variation in teachers' achievement orientation scores. Multilevel Model 3 (Table 3) indicates the effect of six school-average level demographic explanatory variables. The random part of the model indicates that this block of explanatory variables is responsible for 6.6% of the recorded variation, the majority of which has occurred at the school level. The large change in the log likelihood statistic between Multilevel Model 1 and Multilevel Model 3 also indicates its significance. Two factors in this block are indicated as having statistical significance, school-average level teacher position (Teachs) having a negative influence and school-average level teacher experience (Texps) a positive influence on teachers' achievement orientation scores. Schools where the school average level of experience is higher (Texps) may be more likely to focus on conveying to students the importance academic achievement rather than inexperienced staff who focus on mastery of content.

Table 3.

Variation in Teachers' Achievement Orientation Scores (N=458) in 52 Schools.

<b>Explanatory Variables</b>	Multilevel Model 1	Multilevel Model 2	Multilevel Model 3	Multilevel Model 4	Multilevel Model 5	Multilevel Model 6	Reduced Model 6
<b>Fixed:</b>							
Constant							
( $\beta_{0j}X_0$ ):	-0.009)	-0.011	-0.011	-0.011	-0.011	-0.011	-0.011
<b>School Level</b>							
<b>Demographics</b>							
X <sub>1</sub> <i>Teachs</i> ( $\beta_1$ )			<b>-0.118</b>	<b>-0.130</b>	<b>-0.121</b>	<b>-0.138</b>	<b>-0.148</b>
X <sub>2</sub> <i>Texps</i> ( $\beta_2$ )			<b>.160</b>	.065	.062	.166	<b>.184</b>
X <sub>3</sub> <i>Ssizs</i> ( $\beta_3$ )			.071	.074	.068	.053	
X <sub>4</sub> <i>Tages</i> ( $\beta_4$ )			.066	.085	.079	.020	
X <sub>5</sub> <i>Tgens</i> ( $\beta_5$ )			.040	.006	.012	.047	
X <sub>6</sub> <i>Pgens</i> ( $\beta_6$ )			-0.040	-0.033	-0.001	.026	
<b>Teacher Level</b>							
<b>Demographics</b>							
X <sub>7</sub> <i>Teacht</i> ( $\beta_7$ )				-0.023	-0.023	-0.019	
X <sub>8</sub> <i>Texpt</i> ( $\beta_8$ )				.077	.079	.084	
X <sub>9</sub> <i>Tcurt</i> ( $\beta_9$ )				.098	.089	.095	<b>.148</b>
X <sub>10</sub> <i>Taget</i> ( $\beta_{10}$ )				.007	.009	.007	
X <sub>11</sub> <i>Tgent</i> ( $\beta_{11}$ )				<b>.138</b>	<b>.138</b>	<b>.138</b>	<b>.120</b>
X <sub>12</sub> <i>TSCPt</i> ( $\beta_{12}$ )				.084	.091	.064	
<b>School Level</b>							
<b>Leadership</b>							
X <sub>13</sub> <i>VIs</i> ( $\beta_{13}$ )		.080			.082	.131	
X <sub>14</sub> <i>ICs</i> ( $\beta_{14}$ )		-0.045			.004	.052	
X <sub>15</sub> <i>LFs</i> ( $\beta_{15}$ )		<b>.168</b>			<b>.170</b>	<b>.278</b>	<b>.146</b>
<b>School Level</b>							
<b>School Learning Environment</b>							
X <sub>16</sub> <i>SSs</i> ( $\beta_{16}$ )						<b>-0.127</b>	
X <sub>17</sub> <i>AFFs</i> ( $\beta_{17}$ )						.022	
X <sub>18</sub> <i>PIs</i> ( $\beta_{18}$ )						-0.061	
X <sub>19</sub> <i>CENs</i> ( $\beta_{19}$ )						-0.107	
X <sub>20</sub> <i>INNs</i> ( $\beta_{20}$ )						<b>.174</b>	<b>.104</b>
X <sub>21</sub> <i>RAs</i> ( $\beta_{21}$ )						.111	
X <sub>22</sub> <i>AOs</i> ( $\beta_{22}$ )						na	na
<b>Random:</b>							
$u_{0j}$ (School-level)	.062	.035	.003	.006	.000	.000	.000
$e_{0ij}$ (Teacher-level)	<b>.883</b>	<b>.886</b>	<b>.880</b>	<b>.837</b>	<b>.827</b>	<b>.809</b>	<b>.840</b>
% of Variance Explained		2.5%	6.6%	10.8%	12.5%	14.4%	11.1%
-2 (Log-Likelihood)	1267.101	1259.277	1243.024	1221.234	1212.933	1202.785	1219.749

NOTE: IGLS solutions shown; fitted parameter estimates.

Statistically significant beyond the  $p < .05$  level by univariate two tailed test i.e. the parameter estimate is greater than twice its standard error (bold); "na" indicates that the associated school learning environment variable was omitted from the analysis.

Multilevel Model 4 adds six teacher level demographic explanatory variables into this analysis. These two blocks (teacher level and school level demographic variables) explain 10.8% of the recorded variance, and a large statistically significant portion of this is at the teacher level. Within the teacher level demographic block of explanatory variables, teacher gender (*Tgent*) is indicated as being statistically significant and having a positive influence on teachers' perception of achievement orientation scores. This result indicates that teachers' perceptions are that female teachers are more orientated towards encouraging achievement in their students than are male teachers.

Multilevel Model 5 (Table 3) includes in this analysis the accumulative effect of three leadership explanatory variables, vision (*VI*s), individualised consideration (*IC*s) and laissez-faire leadership (*LF*s), along with the influence of the previous two blocks of explanatory variables. These three blocks account for 12.5% of the recorded variance, with reductions in variance components occurring at both the school and the teacher level. Laissez-faire leadership (*LF*s) is indicated as having a positive statistically significant influence on teachers' achievement orientation scores. Multilevel Model 6 (Table 3) adds in the effect of six school level school learning environment explanatory variables into this analysis. Initially, two variables, student supportiveness (*SS*s) and innovation (*INN*s) are indicated as having a statistically significant negative and positive effect respectively on teachers' achievement scores. The four blocks of explanatory variables account for 14.4% of the recorded variance.

Reduced Model 6 removes the influence of all non-significant explanatory variables from the analysis, the remaining explanatory variables accounting for 11.1% of the variance in teachers' achievement orientation scores. All of the residual variation in these scores is at the teacher level. The results indicated a negative, statistically significant relation between teacher position (*Teachs*) at the school level and teachers' perception of achievement orientation. However, five explanatory variables were indicated as having a statistically significant enhancing effect on teachers' perceptions of the push for achievement orientation. School level teacher experience (*Texps*), teacher level teacher time in current school (*Tcurt*) and teacher gender (*Tgent*) were all indicated as enhancing teachers' perceptions of achievement orientation. Innovation (*INN*s) was also indicated by teachers as a catalyst for promoting an achievement orientation, this finding suggestive that change implementation and innovation fostered a greater push for achievement. Laissez faire leadership (*LF*s) had a statistically significant and positive impact on perceptions of achievement orientation, indicating that schools where principals took a "hands off" approach to leadership were more likely to have a higher achievement orientation. A possible explanation for this result is the loose coupling that occurs between teachers and principals (Weick, 1976). Teachers' perceive that principals who take a hand-off approach in their leadership style are less likely to interfere in their classrooms, allowing them to be more autonomous.

Laissez-faire leadership (*LF*s) was the only leadership explanatory variable that demonstrated any statistically significant positive effect on teachers' perception of achievement orientation (*AO*s) scores. Four antecedent variables, two at the teacher level and two at the school level were also indicated as having a statistically significant effect on these teachers' scores.

### **Summary and Conclusions**

A multilevel analysis of three school learning environment constructs, student supportiveness, affiliation and achievement orientation indicated that a principal's laissez-faire leadership behaviour can have a positive influence of teachers' perceptions of these constructs. The study also indicated that principal's laissez-faire leadership styles had no statistically significant effect on teachers' perceptions of professional interest, centralisation and innovation scores. However, laissez-faire leadership behaviours did have a statistically significant, negative effect on teachers' perceptions of resource adequacy.

Statistical analysis of the data collected indicated that the laissez-faire leadership style of principals at the school level was significantly and positively related to perceptions of teacher affiliation (Table 1). If staff respondents perceived high levels of laissez-faire leadership style behaviour displayed by their principal, then their perceptions of affiliation or staff collegiality also rose. Perhaps when leadership is absent or avoided by the principal, staff will band together collegially in strong sub-units or groups. Previous research has found that a leadership substitution effect (Swenson, 2000; Kerr & Jermier, 1978; Dionne, Yammarino, Atwater & James, 2002) occurs when leadership seems irrelevant to an organisation, or when leadership becomes dysfunctional and that schools are particularly prone to a substitutionary leadership effect

(Swenson, 2000). Teachers are highly trained, work in small groups that rely less on supervision and where feedback and collegial support is available from peers. It seems reasonable, therefore, that as laissez-faire leadership style behaviour is perceived to increase, so too does teacher perception of affiliation. This style of leadership may foster collegial relations to the point where no one group member's decision-making is considered more important than another's, and so a genuine atmosphere of working together is created.

Laissez-faire leadership behaviours were also found to share a statistically significant, positive relation with teachers' perceptions of both student supportiveness and achievement orientation (Tables 2 and 3). These results suggest that teachers perceive that increases in laissez-faire leadership behaviours in their principals are related to positive teachers' perceptions of student supportiveness and achievement orientation. However, this result might echo the effect that substitute leaders can have (e.g. autonomous staff such as teachers who work in teams) and as such the result is likely to be confounded. For example, collegial work groups who emphasize the relational aspects of school life may well counter the effects of a principal who is perceived to be laissez-faire in the relational aspects of school community life. Hence, this result warrants further investigation.

Principal's who employ a variety of leadership style behaviours will differentially effect teacher's perceptions of their school learning environment. Furthermore, while principal's who delay in decision making, or who are absent from their schools when needed can be frustrating to teachers, it is a fallacy to consider that all aspects of a schools learning environment will be negatively influenced. Principals would be wise to employ laissez-faire style behaviours in the leadership of their schools if they wished to target specific improvements in selected school learning environment factors such as student supportiveness, affiliation ad achievement orientation.

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