

## **Organisational Learning in Australian High Schools - Nature and Practices**

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### **Introduction**

The general consensus, after years of educational reform initiatives to improve schools and schooling, is that too little changes too slowly (Deal, 1990; McLaughlin, 1998; Murphy & Hallinger, 1993). This is particularly so in a context where too much is implemented too quickly. Fullan (1995) has argued that the multitude of initiatives and the rapidity with which they are implemented "creates constant overload, fragmentation, and mystery. Even the most reform minded educators have difficulty figuring out what is meant by the latest fads as they burn out attempting to find coherence and meaning" (p.230).

In Australia, the current move to restructure schools as site-based managed (SBM) organisations echoes efforts in other countries such as Canada, USA and UK where indifferent results of these initiatives are provoking considered criticism from respected educators and researchers. In reviewing the evidence for a connection between enhanced teaching and learning and decentralisation, Fullan (1995) found no increase in student involvement in learning or improved teaching strategies. This lack of connection between governance structure reforms and the core mission of schools was previously reported in North America by Hallinger, Murphy, and Hausman (1991) and in Australia by Bishop and Mulford (1999). The empirical evidence in the literature indicates that successful SBM initiatives are rare and those that do succeed go far beyond SBM.

More recently, Wohlstetter, Van-Kirk and Robertson (1997) reported their findings from a study of American, Canadian and Australian schools that were involved in curriculum and instruction reform and had been operating under SBM for at least 3 years. They concluded that decentralised management works best when there are conditions in place that support organisational learning and integrating processes. Actively restructuring, as opposed to struggling, schools could be differentiated in terms of availability of resources such as power, knowledge and skills, information, and rewards, as well as the nature of leadership and the existence of instructional guidance mechanisms. The model they developed indicates that actively restructuring schools have more of the conditions in place that support organisational learning, which enables the adoption of more innovative teaching practices.

### **Major Constructs of the Study**

#### **Organisational learning**

The concept of schools as learning organisations has evolved in response to the difficulties experienced in bringing about school reform. Over a relatively short period of time, support for the importance of organisational learning in schools has grown (Chapman, 1997; Leithwood, Leonard & Sharratt, 1998; Louis, 1994; Mulford, 1998). Schools that function as learning organisations in a context of rapid global change are those that have systems and structures in place that enable staff at all levels to collaboratively and continuously learn and put new learnings to use. This capacity for collaborative learning defines the process of organisational learning in schools. Marks, Louis and Printy (1999) have identified six dimensions of this capacity for organisational learning - school structure, participative

decision making grounded in teacher empowerment, shared commitment and collaborative activity, knowledge and skills, leadership, and feedback and accountability (p.3).

The study reported in this paper used a conceptualisation of organisational learning developed from 2503 Australian secondary teachers' responses to a survey conducted in 96 South Australian and Tasmanian schools (Silins, Zarins & Mulford, 1999). This survey was part of a larger, federally funded, 3 year collaborative research project titled "Leadership for Organisational Learning and Student Outcomes" (LOLSO). The project is supported by the Australian Research Council and the respective state education authorities. The LOLSO Project was developed to systematically investigate the emerging conceptualisation of schools as learning organisations. The Project surveyed students, teachers and principals from 50 South Australian secondary schools and 46 Tasmanian secondary schools to determine their perceptions of schools as learning organisations, their views on school management, the nature of principals' leadership and the impact of these variables on student outcomes. The aims, nature and scope of the larger project and the results of some of the preliminary investigations have been reported elsewhere (Silins, Zarins, Mulford & Bishop 1999).

The LOLSO Project data supported a four factor nested model of organisational learning which we have employed in this study (Mulford & Silins, 1998; Silins, Zarins & Mulford, 1998). From our empirical investigation, four dimensions (reported in Table 1) characterise a school's capacity for organisational learning. These are:

- Collaborative Climate - The extent to which the school's climate and culture is one that supports collaborative work, sharing of information and open communication.
- Taking initiatives and risks - The extent to which the school leaders and school structures support experimentation and teachers feel valued and rewarded for taking the initiative.
- Teacher Involvement (in previous reports referred to as Improving Practice) - The extent to which teachers participate in all aspects of the school's functioning, including decision making and review, sharing a coherent sense of direction and acknowledging the wider school community.
- Professional Development - The extent to which staff draw on available knowledge and skills to continuously improve their performance.

For this report, we examined the nature of organisational learning and the leadership practices and processes that foster organisational learning in Australian high schools. We also tested the impact of leadership and organisational learning on student outcomes.

## **Leadership**

Approaches to leadership that support the development of schools as learning organisations find more in common with cultural, collaborative approaches in which teachers are viewed as partners, than with the technological, hierarchical, rational planning models (Sheppard & Brown, 1999). One such approach is the transformational model of leadership which encompasses many of the leadership practices identified as promoting successful school restructuring (Leithwood, Jantzi & Steinbach, 1999). Research describing productive forms of leadership has referred to aspects of this transformational model of leadership, for example, leadership which is empowering (Reitzug, 1994); sensitive to local community aspirations (Limerick & Nielsen, 1995); supportive of followers (Blase, 1993); that builds collaborative school cultures (Deal & Peterson, 1994); and emphasises the importance of

developing a shared vision (Mulford, 1994). The transformational conception of leadership includes: developing a mission and vision for the school and maintaining its relevance for all concerned; developing and maintaining a school culture supportive of the school's mission and the work required to achieve that mission; and, nurturing the capacity and commitment of staff (Duke & Leithwood, 1994). This view of leadership also includes: structuring the school to facilitate achieving its mission and goals; ensuring the continuous improvement of programs and instruction; building and maintaining high levels of support for the school among parents and the wider community; and, providing administrative support for achieving the school's vision, mission, and goals (Leithwood & Duke, 1999).

The LOLSO Project identified the nature of principals' practices that promote organisational learning by constructing and employing questionnaire items which were drawn from the transformational model of leadership (Duke & Leithwood, 1994). The following categories of items relating to the principal were included: setting the tone of the school; the nature of the decision-making structures; the level of individualised support and intellectual stimulation provided; establishment of school direction and goals; and, performance expectations. The nature of the principals' leadership and practices was defined and confirmed as a six-factor nested model (Mulford & Silins, 1998; Silins, Zarins & Mulford, 1998). These six factors are operationally defined in Table 2 and have been employed in this study.

Based on our empirical investigations, the following six dimensions define the transformational nature of principals' leadership practices that promote organisational learning:

- Vision and Goals - The extent to which the principal works toward whole staff consensus in establishing school priorities and communicates these priorities and goals to students and staff giving a sense of overall purpose.
- Culture - The extent to which the principal promotes an atmosphere of caring and trust among staff, sets a respectful tone for interaction with students and demonstrates a willingness to change his or her practices in the light of new understandings.
- Structure - The extent to which the principal establishes a school structure that promotes participative decision making, supports delegation and distributive leadership and encourages teacher autonomy for making decisions.
- Intellectual Stimulation - The extent to which the principal encourages staff to reflect on what they are trying to achieve with students and how they are doing it; facilitates opportunities for staff to learn from each other and models continual learning in his or her own practice.
- Individual Support - The extent to which the principal provides moral support, shows appreciation for the work of individual staff and takes their opinion into account when making decisions.
- Performance Expectation - The extent to which the principal has high expectations for teachers and for students and expects staff to be effective and innovative.

### **Distributed Leadership**

Our concept of distributed leadership relates to Ogawa and Bossert's (1995) concept of leadership as a quality of organisations. We support the idea that leadership is an ubiquitous characteristic of organisations that is inherent in the roles and structures of the organisation

and can be recognised in the emergent organisational relationships. Within an organisation, influence is exerted through social interactions. Leadership, as a relational concept, can permeate every level of the organisation and the extent of its influence can ebb and flow according to the extent organisational members choose to, or find opportunities to, exert influence. The bottom line, however, is that all members of schools and their communities can lead and so affect the performance of their schools.

This concept of organisational leadership has its genesis in the work of a group of researchers in the '60s from the Institute for Social Research of the University of Michigan. Ogawa and Bossert (1995) reported that these researchers established that organisations can be distinguished on the basis of the different levels of leadership that exist, that these levels vary over time in any one organisation, and that, under some conditions, the overall performance of organisations is positively related to the level of organisations' total leadership (Cartwright, 1965; Tannenbaum, 1962).

We hypothesised that organisational learning provides the conditions that support the continual improvement of a restructuring school's overall performance and that these conditions are positively related to the level of total leadership that exists in the organisation. In other words, the emerging model is that schools which are characterised by high levels of total leadership are most likely to have in place conditions that promote high levels of organisational learning that enable them to function as high performing, restructuring schools.

For this study, we have drawn from the LOLSO Project data base teacher responses to a questionnaire item asking them to identify all sources of leadership in their school and the strength of their influence. A list of 12 possible sources were presented. These were Principal, Deputy principal, Assistant principal, Learning area co-ordinators/department heads, Individual teachers providing leadership informally, Teacher committee/teams set up to provide leadership, the Whole staff working together, School counsellor, Students, School council, Union representative, and Parents or members of the community. These 12 categories of sources were used to define the concept of distributed leadership. The total leadership in any one school would be represented by the principal's leadership together with distributed leadership.

### **Student Outcomes**

Improved student outcomes must be a primary goal of any school reform and restructuring. Research suggests that alienation of students from school can be a critical step leading to failure to complete their schooling. This problem of alienation or disengagement is especially important for middle and senior high school students (Newmann, 1989, Finn, 1993). Alienation and disengagement can be counteracted by participation in and engagement with school. Such involvement is likely to have benefits across a wide variety of educationally relevant outcomes for students (Leithwood, 1998; Kinney, 1993; Marsh, 1992). The greater the student participation in and engagement with school, the less likelihood of alienation, the consequences of which are detrimental to the student, the school community and society as a whole (Marsh, 1992; Marsh & Craven, 1997). There is some evidence that student engagement with school is a predictor of student achievement and is important for learning which requires committed effort by each student (Ainley, 1994; Leithwood, Dart, Jantzi, & Steinbach, 1993; Newmann, 1989).

For the LOLSO Project, we adapted as dependent variables a conceptualisation of student identification with school employed by Leithwood et al (1993) and drawn from Finn (1989). This conceptualisation contains two elements: student participation in school which is largely

behavioural and student engagement with school which is largely psychological. We have employed these constructs as student outcome measures in this study.

## **Variables in the Study**

All variables used in this study were drawn from the LOLSO Project data base. The study reported here, examined the nature and strength of the inter-relationships between nine variables chosen to expand our understanding of the nature and processes of organisational learning. The nine variables employed in this study represent three categories of variables: School context variables; Internal school variables; and, Student outcome variables.

### **School context variables**

#### SES and School Profile

When examining predictors of school outcomes, the contexts of schooling need to be taken into account (Stoll & Fink 1996). Students social class background, school sector and school size have been identified as factors that influence student performance (Caldwell 1993; Hallinger & Murphy 1986; Lee, Bryk & Smith 1993). Mother's and father's occupation as well as Australian Bureau of Statistics measures of economic resources and occupation level were used to control for socio-economic status (SES). The variable School Profile accounted for the size of the school in 1997 and the type of school, country or metropolitan.

### **Internal School Variables**

#### Leader, Active Leadership, Distributed Leadership, Organisational Learning and Teachers Work

Five internal school variables were used: Leader - the construct representing the nature of the principal's practices in terms of six aspects of transformational leadership identified in Table 2; Active Leadership - the construct representing the extent to which the leaders in the school are visible, accessible and actively involved in the core work of the school, including monitoring and reviewing the progress of students; Distributed Leadership - the construct representing the extent to which leadership is distributed in the school over a number of possible sources; Organisational Learning - the extent to which the school is perceived to be functioning as a learning organisation defined by the four factors identified in Table 1; and, Teachers Work - the construct representing students' perceptions of teachers' work in the classroom including their liking of the way teachers instruct, the extent they relate instruction to future life, the variety of instructional activities employed, the extent teachers discuss students' work with them, the organisation of their classes, the expectations that they will do their best work, and the extent students are challenged in class.

### **Student Outcome Variables**

#### Participation and Engagement

Two student outcome variables were used as criterion measures: Participation - representing the extent of students' participation in school including absences, misbehaviour, getting homework done, amount of time spent on homework, participation in extracurricular activities, number of activities, preparedness to do extra schoolwork and involvement in classroom/school decisions and setting own learning goals; Engagement - representing the extent of students' engagement with school including students' perception of the way teachers relate to them, the extent of identification with their school, perceptions

of their relationship with their peers and their perceptions of the usefulness of their schoolwork in later life.

### **Path Model and Analysis**

Nine variables were included in the model developed to test for the influence of leadership variables on Organisational Learning and for the impact of Leadership and Organisational Learning through Teachers Work on students' Participation in and Engagement with school. The variables selected for the study were based on the literature on leadership and organisational learning and Leithwood's et al. (1993) adaptation of Finn's (1989) conceptualisation of student participation in and engagement with school. A combination of contextual external and internal predictors of organisational learning were hypothesised (from the larger data base). External predictors were SES and School Profile (type and size of school). The internal predictors were principal's practices (Leader) and leadership team's behaviour (Active Leadership), Distributed Leadership, Organisational Learning and Teachers Work. Table 3 presents a description of the variables in the model. SES and School Profile are school characteristics; Leader, Active Leadership and Distributed Leadership, Organisational Learning involve teacher level data aggregated to the school level; Teachers Work involves student level data aggregated to the school level to provide the students' view on classroom instruction. Student outcomes measures are based on students' views of their participation in and engagement with school, aggregated to the school level.

The path model was tested using a latent variable partial least squares path analysis (PLSPATH) procedure (Sellin & Keeves 1996). The initial design of the model was fully recursive and each variable was positioned as it was predicted to influence the succeeding variables in the model. Along with the contextual factors (SES and School Profile), Leader, Active Leadership, Distributed Leadership, Organisational Learning and Teachers Work were depicted as mediating variables by their placement between the external variables and the criterion variables of Participation and Engagement.

Analysis proceeded in two stages. First, the outer model was refined by successively deleting the manifest (direct measure) variables that did not contribute to explaining the latent variable (construct). All measures that had a loading (in the same sense as a principal components analysis) of at least twice their standard error and equal to or greater than 0.40 were retained. Once the outer model was stable, the inner model was refined. Again, all paths were deleted where the path coefficient (similar to regression coefficient) was less than twice its standard error or less than 0.10.

### **The School as the Unit of Analysis**

The focus of this study is on school level factors associated with leadership, organisational learning and student outcomes. Analysis of the data was restricted at the outset to the school level since information that would allow complete nesting of the student data within teachers, and teachers within schools was not available. The school level model presented indicates the way in which teachers, students and principals work and think in the school. Aggregation to the school level has an inherent meaning in this study since the teachers and leader are providing information about the same leader and his or her operation in the school. Furthermore, leadership concepts used in this study represent qualities of organisations (Ogawa & Bossert, 1995) and must have as their unit of analysis the organisation. Since the function of leadership is to affect the performance of organisations, leadership parameters are set at the organisational level to influence organisational outcomes.

Aggregation bias will inflate the intensity of the same level relationships in the model - this will affect only the relationships between the internal school factors, not including Teachers Work, and between Teachers Work and the two student outcome measures, Participation and Engagement. The relative strengths of these relationships, however, are likely to be preserved. The relationships between the remaining variables and the student outcome measures will not encounter problems of aggregation bias.

## Results

Table 3 reports the significant estimation loadings of the observed variables for each construct in the model. The strength of the loadings indicates which of the manifest variables predominated in the definition of their construct. In the final model, Distributed Leadership and Participation were the only constructs for which some of the observed variables defining them failed to reach the criteria for retention in the model. Distributed Leadership was defined by nine of the observed variables: Deputy Principal, Coordinators/Heads, Individual Teachers, Teacher Teams, Whole staff, Counsellors, Students, Councils and Parents. Principal, Assistant Principal and Union Representative were not significant contributors to this construct. Similarly, for Participation misbehaviour, getting homework done and amount of time spent on homework failed to reach the criteria and were dropped. The observed variables that contributed significantly to Participation were: absences, participation in extracurricular activities, number of activities, preparedness to do extra schoolwork and involvement in classroom/school decisions and setting own learning goals. For all other constructs in the model the observed variables contributed significantly.

Table 4 shows the variables that exerted an effect on both the outcome variables and the other latent variables in the model. Direct, indirect and total effects are reported along with the jackknife standard errors and correlations. Three variables emerged as direct predictors of Organisational Learning: Leader ( $p=0.30$ ), Active Leadership ( $p=0.36$ ) and Distributed Leadership ( $p=0.36$ ). As well as the direct effect, Leader exerted the strongest indirect effect ( $i=0.54$ ) on Organisational Learning through its very strong direct effect ( $p=0.90$ ) on Active Leadership and strong indirect effect ( $p=0.59$ ) on Distributed Leadership. Leader exerted a dominant total influence on Organisational Learning.

Organisational Learning was the only direct predictor ( $p=0.28$ ) of Teachers Work. However, Organisational Learning mediated indirect Leader effects ( $i=0.23$ ), and to a lesser extent, indirect Active Leadership effects ( $i=0.17$ ).

Teachers Work exerted a direct influence on Participation ( $p=0.41$ ). School Profile, however, was the strongest direct, and negative, predictor ( $p=-0.51$ ) of Participation. The negative path indicates that the smaller metropolitan schools and the country rather than city schools are associated with increased Participation.

Participation was a moderate direct ( $p=0.25$ ) predictor of Engagement as was SES ( $p=0.18$ ), although to a lesser extent. Teachers Work, however, exerted the strongest direct influence ( $p=0.77$ ) on Engagement. Indirect influences on Engagement worthy of note were Organisational Learning ( $i=0.24$ ) and Leader ( $i=0.20$ ).

The strong direct influence ( $p=0.56$ ) of SES on School Profile indicated that students with higher SES backgrounds were associated with the metropolitan and larger schools. School Profile had a direct and negative ( $p=-0.26$ ) effect on Leader indicating that the smaller city schools and country schools were more likely to be associated with the transformational practices represented by Leader.

The best estimate of the proportion of Organisational Learning accounted for by school leadership in this model can be calculated by multiplying the path coefficient of the direct effect of leadership on Organisational Learning by their correlation. The total leadership in this model consists of Leader and Distributed Leadership. The proportion of Organisational Learning accounted for by Leader is 25 per cent ( $0.30 \times 0.84$ ) and by Distributed Leadership is 28 per cent ( $0.36 \times 0.78$ ). The total proportion of Organisational Learning accounted for by the total leadership in schools in this model is 53 per cent.

The combined effect of variables in this model explained 80 per cent of the variance of Engagement. The large amount of variance explained and the stability of the outcome measure reflected by the high  $Q^2$  (0.79) indicates a well defined and stable model. Also, this model explains nearly half of the variance in Participation, 47 per cent.

## Discussion

In this study, organisational learning has been defined in terms of four categories of school characteristics. These categories have been identified and defined (Table 1) through an empirical investigation of the nature of organisational learning in Australian secondary schools. Organisational learning is promoted in schools in which staff communicate with each other in an open and supportive way and actively seek information to improve their work. In these schools, leaders ensure that structures and systems support and reward initiative and experimentation. Teachers are active participants in all aspects of school functioning such as school policy formulation, review of current practices, establishing future directions and sharing information with parents and the community. Organisational learning is more likely to occur in schools where staff are looking out for opportunities to increase knowledge and improve skills and are provided with sufficient resources and time to develop professionally.

Transformational leadership practices have been recognised for some time as playing a key role in enhancing school processes (Beare et al., 1989; Leithwood et al., 1996; Silins, 1992, 1994). In our study, principals' transformational practices, directly or indirectly, influenced every school and outcome variable, except students' participation in school. These results continue to support the crucial role of principals in restructuring schools and their role in promoting organisational learning.

Three aspects of school leadership were addressed in relation to organisational learning. These were the principal's leadership practices, described in terms of transformational leadership behaviours, the leadership team's behaviour in terms of visibility, approachability and extent of involvement in the core work of the school, and the extent to which leadership in the school emanated from a variety of levels and sources including students and the community. The school as a learning organisation is defined by the level and quality of leadership that characterises the every day work of the school. This organisational leadership represents the total leadership that can be discerned in a school's functioning at any one time. It was hypothesised that the level of total leadership is positively related to the level of organisational learning in a school and that, through the involvement of teachers in the school and through their instructional work, organisational leadership and learning effects will impact on students in the school. Pounder, Ogawa and Adams (1995) make these inter-relationships explicit. "Leadership affects school performance by shaping the organization of work, developing solidarity among organizational members, managing schools' relations with their external environments, and building members' commitment to their schools." (p.567).

The final path model (Figure 1) graphically displays the relationship between leadership and organisational learning and their impact on secondary students' participation in and

engagement with school. Clearly the level of leadership and the level of organisational learning in secondary schools are strongly inter-related. The level of leadership operating throughout any one school, and its community, is a strong predictor of the level of organisational learning generated in the school. Once the conditions for organisational learning begin to be established in a school, a positive and reciprocal effect of organisational learning on leadership as well as leadership on organisational learning are likely to emerge.

Our study has demonstrated that the influence of leadership on organisational learning has two important dimensions that provide insights into the nature of the conditions that foster organisational learning: the leadership behaviours of the principal and the leadership team in the school; and, the extent that leadership is distributed throughout the whole teaching staff. Although our results indicated an indirect influence of the leadership practices of the principal on the extent of distributed leadership in the school, there was no direct effect of the principal's approach to leadership on distributed leadership. This supported our interpretation that there are two separate and distinguishable characteristics of schools as organisations that need to be developed and nurtured with resources and professional development support. The principal's transformational behaviour together with the leadership team's positive presence and involvement in the core work of the school will encourage leadership to emerge from an increasing range of sources in the school and community. Although as much as 43 per cent of the variance of Distributed Leadership is explained by these administrative leadership variables, other influences must operate such as the leadership capacities of staff and the kind of systems and structures that exist in the school to support and enable staff to apply their leadership capacities to the school's benefit.

Our study tested the influence of school level factors on school performance measured in terms of students' participation in and engagement with school. The level of organisational learning impacted on teachers' work with students in their classrooms. Organisational learning and the instructional work of the teachers mediated the school effects on student outcomes. All the leadership factors were indirect predictors of the work of teachers in the classroom, mediated by the same conditions defining organisational learning. Furthermore, the principal and the leadership team influenced students' engagement with school significantly and indirectly, and importantly, through teachers' instructional work. This indirect effect of leadership on school outcomes has been well supported by other studies (Leithwood, 1994; Leithwood & Jantzi, 1998; Silins, 1992; Silins & Murray-Harvey, 1999). These results confirm the pivotal role of teachers in any restructuring initiative that aims to impact on the development of the students.

Teachers' perceptions of the nature of principals' leadership, and administrative teams' leadership were critical to promoting organisational learning and more student-centred classroom instruction. The influence of these two dimensions extended to students' engagement with school but not to student participation. The strongest predictor of students' participation in extracurricular activities, school decision making and setting students' own learning goals was the area and size of school. The smaller metropolitan schools and the country schools were more likely to involve their students in these activities. However, once we control for size, students' perceptions of the way in which teachers work in the classroom was a major influence on students' participation in school.

The direct influence of SES on students' engagement with school indicated that students from higher socio-economic backgrounds tended to be amongst the students who established positive relationships with their teachers, identified with their school, and saw schoolwork as useful to their future life. However, the overwhelming influence of teachers on students' engagement indicated that, although students' family backgrounds advantage some students, their perceptions of the work that teachers do with them provides their greatest opportunities for school success.

Finn (1989) hypothesised that active participation and the successful experiences that participation can bring result in student engagement. Active participation in school appears to be the minimum requirement for school achievement (Finn, 1993). However, the relationship between participation in school and engagement with school is not at all clear. Newmann (1989) had indicated that the factors that lead a student to emotionally identify with school are not well understood. Finn (1993) in a large study of eighth-grade students found there was a low correlation between participation and engagement. Our findings show a moderate correlation but indicate strongly that teachers' interactions with students in the classroom have the more important influence on students' engagement with school. There is evidence to suggest that non-achievement outcomes such as participation in and engagement with school can be important factors in student success, academic and social, at all levels of schooling (Finn and Cox, 1992; Finn, 1993; O'Brien & Rollefson, 1995).

The influence of distributed leadership did not extend to either of the student outcomes. Whether all staff had the opportunity to exert leadership in the school was not a predictor of students' participation in or engagement with school. It is possible to argue that distribution of leadership across all levels of the school may operate to capture teachers' attention away from their core work of teaching and learning to become more involved in wider school issues. Perhaps beyond some optimal level of distributed leadership required for maximising organisational learning, diminishing returns set in for the school in terms of teacher influence on students. It may be that, while present constructions of teachers work fail to integrate school level with student level demands, diminishing returns will continue to inhibit the goals of restructuring and reform. Contemporary views of schools, teachers and teaching limit what schools can achieve engendering repeated attempts at reform frustrated by besieged teachers.

Our findings help to focus on the need in restructuring schools to promote learning and engagement for both adults and students. However, to do this in a way that promotes organisational learning, current school structures will have to be re-organised to provide time for the development of knowledge and skills and the acquisition and examination of information (Fullan, 1995 p.232). Donahoe (1993), Fullan (1995), Wohlstetter et al., (1994), and Marks, Louis and Printy, (1999) have anticipated the radical reform required in the working conditions of teachers to enable schools to function as learning organisations. Even more fundamental is the need for society to reconstruct what it means to be a teacher. The professionalisation of teachers involves a change in the way society as a whole thinks about the role of teachers. Schools cannot become learning organisations if teachers' work in schools is not associated with opportunities to behave as a member of a learning organisation i.e. providing leadership in the school and its community.

Wohlstetter and her collaborators (1994) have supported a view that schools need to work on changes that help them become learning organisations first and SBM schools second. Their work has highlighted the difficulties that schools face when undertaking necessary and inevitable changes within the systems and conditions that exist in schools today. The accumulating evidence indicates that the establishment of SBM alone does not ensure the wide ranging changes necessary for improved performance. On the other hand, organisational learning can provide schools with a culture and a way of working that can improve school outcomes for students while restructuring schools.

## **Conclusion**

In this study we have explored the nature of organisational learning and the processes that promote organisational learning in Australian secondary schools. Our hypothesis was that the conditions under which overall performance of an organisation is positively related to its level of total leadership are the same as the conditions required for organisational learning.

We introduced a measure of school performance in the form of student participation in and engagement with school to test this hypothesis. We have found that the conditions for organisational learning are very much the conditions that are associated with the establishment of the three dimensions of school leadership, principal transformational leadership, actively involved administrative teams and distributed leadership. Organisational learning is a significant mediator of principal and leadership team effects on teachers work and on student outcomes. However, the conditions for the improvement of overall school performance differ in that the distributed leadership dimension is not a significant contributor to student participation in and engagement with school. We have speculated that distributed leadership within the current schools structures and systems may impact on teachers as an additional burden which may stretch teachers to their limits. Nevertheless, we must continue to work towards re-constructing our view of schools and teachers' work.

The concept of schools as learning organisations is becoming a promising vision to guide restructuring schools (Fullan, 1995; Leithwood & Louis, 1998; Marks, Louis and Printy, 1999; Silins, Zarins, Mulford, & Bishop, 1999; Silins, Mulford, Zarins, & Bishop, in press). The evidence suggests that higher performing schools are functioning as learning organisations. Schools that engage in organisational learning enable staff at all levels to collaboratively and continuously learn and put these learnings to use in response to social needs and the demands of their environment. Organisational learning as a concept applied to schools appears to be able to make a valuable contribution to our understanding of successful school change.

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Figure 1 Final Path Model of Variables Influencing Student Participation in and Engagement with Secondary School

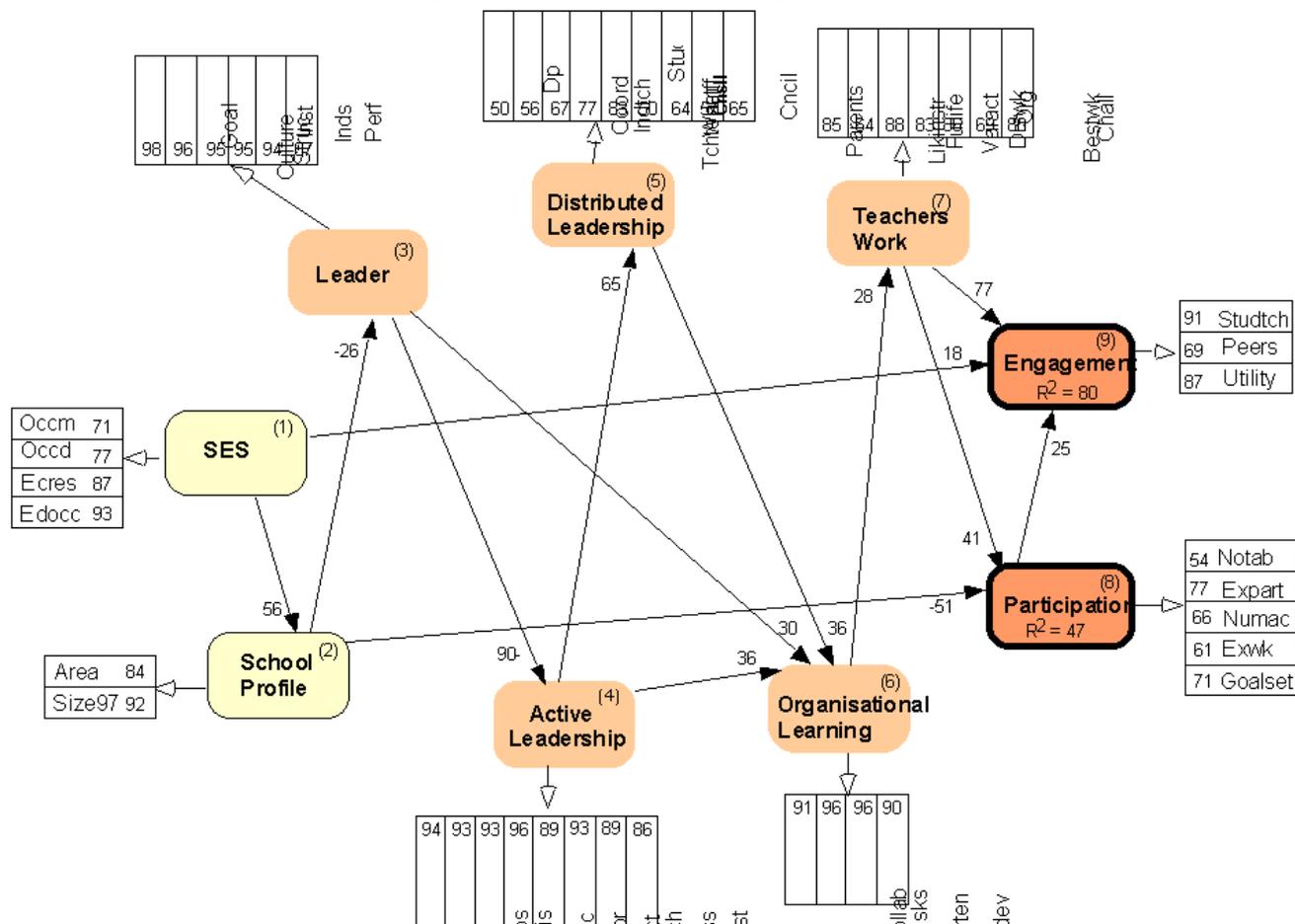


Table 1

Conceptual and operational definitions of a four factor nested model of organisational learning

### ORGANISATIONAL LEARNING

#### Collaborative Climate

- The extent to which the school's climate and culture is one that supports collaborative work, sharing of information and open communication.

Discussions among colleagues are honest and candid.

Overall there is mutual support among teachers.

Most of us actively seek information to improve our work.

We are tolerant of each other's opinions.

Colleagues are used as resources.

There is ongoing professional dialogue among teachers.

There is a spirit of openness and trust.

Most of us think about the future development of the school.

Problems, errors, and lessons are shared not hidden.

Most of us learn from our successes.

### **Taking Initiatives and Risks**

- The extent to which the school leaders and school structures support experimentation, empower teachers to make decisions and teachers feel valued and rewarded for taking the initiative.

The school leaders protect those who take risks.

The administrators are open to change.

School structures support teacher initiative and risk taking.

The administrators model calculated risk taking and experimentation.

The administrators empower staff to make decisions.

There are rewards for staff who take the initiative.

The school leaders encourage professional risk taking and experimentation.

People feel free to experiment and take risks.

Staff are valued.

The school organisation does all it can to encourage staff to develop professionally.

We value diversity of opinion.

I have a great deal of freedom in how I do my work.

We acknowledge staff achievements.

It is accepted that there is more than one way to accomplish the school's vision/goals.

The administrators have an explicit procedure to manage the change process.

## **Teacher Involvement**

- The extent to which teachers participate in all aspects of the school's functioning, including school policy decisions and review, share a coherent sense of direction and acknowledge the wider school community.

Teachers have the opportunity to participate in most significant school-level policy decisions.

We have a coherent and shared sense of direction.

The vision/goals were established collaboratively.

We critically examine current practices.

Sensitive issues can be raised for discussion.

Teachers and administrators work in partnership to learn and solve problems together.

We actively share information with the parents and community.

The school structures encourage collaboration among staff.

The effectiveness of the teaching program is regularly monitored.

The school leaders enunciate clear statements of collaborative expectations.

## **Professional Development**

- The extent to which staff keep up with best practice and are encouraged and given time to develop professionally; external advisors, professional reading and other schools are sources of learning; developing skills of working in teams and sharing knowledge is seen as important.

We monitor what's happening outside of the school to find out about best practice.

Good use is made of professional readings.

We have designed ways to share knowledge.

Groups of staff receive training in how to work and learn in teams.

Good use is made of membership of teacher professional associations.

We make use of external advisers e.g. subject associations, project officers, consultants.

The administrators facilitate collaboration via release time/resources/skill development programs and the like.

Adequate time is provided for professional development.

Staff engage in ongoing professional development.

We learn from other schools.

The climate is stimulating and professionally challenging.

Professional development is closely tied to real school issues.

We monitor what's happening outside of the school to find out what may impact on the school itself.

## Table 2

Conceptual and operational definitions of a six factor nested model of principal's leadership

### PRINCIPAL'S LEADERSHIP

#### **Vision and Goals**

- Works toward whole staff consensus in establishing school priorities and communicates these priorities and goals to students and staff giving a sense of overall purpose.

Gives us a sense of overall purpose.

Helps clarify the specific meaning of the school's mission in terms of its practical implications for programs and instruction.

Communicates school mission to staff and students.

Encourages the development of school culture supporting openness to change.

Helps us understand the relationship between our school's mission and the Department's initiatives and policies.

Works toward whole staff consensus in establishing priorities for school goals.

#### **Culture**

- Promotes an atmosphere of caring and trust among staff, sets a respectful tone for interaction with students and demonstrates a willingness to change his or her practices in the light of new understandings.

Shows respect for staff by treating us as professionals.

Sets a respectful tone for interaction with students.

Demonstrates a willingness to change his/her own practices in light of new understandings.

Models problem-solving techniques that I can readily adapt for work with colleagues and students.

Promotes an atmosphere of caring and trust among staff.

Symbolizes success and accomplishment within our profession.

### **Structure**

- Supports a school structure that promotes participative decision making, delegating and distributing leadership to encourage teacher autonomy for making decisions.

Delegates leadership for activities critical for achieving school goals.

Distributes leadership broadly among the staff representing various viewpoints in leadership positions.

Ensures that we have adequate involvement in decision making related to programs and instructions.

Supports an effective committee structure for decision making.

Facilitates effective communication among staff.

Provides an appropriate level of autonomy for us in our own decision making.

### **Intellectual Stimulation**

- Encourages staff to reflect on what they are trying to achieve with students and how they are doing it; facilitates opportunities for staff to learn from each other and models continual learning in his or her own practice.

Is a source of new ideas for my professional learning.

Stimulates me to think about what I am doing for my students.

Encourages me to pursue my own goals for professional learning.

Encourages us to develop/review individual professional growth goals consistent with school goals and priorities.

Encourages us to evaluate our practices and refine them as needed.

Encourages me to try new practices consistent with my own interests.

Facilitates opportunities for staff to learn from each other.

### **Individualised Support**

- Provides moral support, shows appreciation for the work of individual staff and takes their opinion into account when making decisions.

Takes my opinion into consideration when initiating actions that affect my work.

Is aware of my unique needs and expertise.

Is inclusive, does not show favouritism toward individuals or groups.

Provides moral support by making me feel appreciated for my contribution to the school.

### Performance Expectations

- Has high expectations for teachers and for students and expects staff to be effective and innovative.

Has high expectations for us as professionals.

Holds high expectations for students.

Expects us to be effective innovators.

Table 3

Description of variables in the model of factors influencing organisational learning and student outcomes

Variables description and coding	Mean	S D	*PLS Estimation Loading
<b>SOCIOECONOMIC STATUS [outward mode]</b>			
Mother's occupation (Occm)	4.55	.59	.77
Father's occupation (Occd)	5.22	.66	.87
Residence category (Ecres)	931	.75	.93
Education/occupation category (Edocc)	939		
<b>SCHOOL PROFILE [outward mode]</b>			
Area (country or metropolitan)	.56	283	.92
Size in 1997	632		
<b>LEADER [outward mode]</b>			
<i>Teacher level of agreement on six aspects of principal's leadership practices in the school.</i>			
<i>1=strongly disagree; 2=mostly disagree; 3=in between; 4=mostly agree; 5=strongly agree.</i>			

Goal	3.57	.44	.98
Culture	3.63	.54	.96
Structure (Struc)	3.68	.40	.95
Intellectual Stimulation (Inst)	3.34	.43	.95
Individualised Support (Inds)	3.50	.50	.94
Performance Expectations (Perf)	3.89	.36	.87
<p>ACTIVE INVOLVEMENT OF LEADERS[outward mode]</p> <p><i>Teacher level of agreement on eight aspects of administrative involvement in the school's activities.</i></p> <p><i>1=strongly disagree; 2=mostly disagree; 3=in between; 4=mostly agree; 5=strongly agree</i></p>			
Administrators have positive presence (Adpos)	3.64	.58	.95
Administrators visible (Advis)	3.75	.57	.93
Administrators easily accessible (Adacc)	3.92	.47	.93
Administrators interested in student progress (Adstpr)	3.50	.50	.96
Administrators observe or inquire (Inclact)	2.71	.52	.89
Administrators work with teachers (Adtch)	3.00	.44	.93
Administrators discuss educational issues (Adiss)	3.86	.33	.89
Administrators review student progress (Revst)	3.54	.42	.86
<p>DISTRIBUTED LEADERSHIP [outward mode]</p> <p><i>Teacher identification of the leadership sources in the school and their strength of influence.</i></p> <p><i>1=minimal; 2=moderate; 3=considerable; 4=very strong.</i></p>			
Deputy principal (DP)	3.04	.44	.50
Department heads/coordinators (Coord)	2.84	.23	.56
Individual teachers (Indtch)	2.68	.26	.67
Teacher committees/teams (Tchteam)	2.57	.28	.77

Whole staff working together (Whst)	2.64	.41	.83
School counsellors (Cnsl)	2.17	.46	.50
Students (Stud)	2.08	.27	.64
School Council (Cncil)	2.20	.34	.53
Parents/other community members (Parents)	2.08	.30	.65

Table 3 cont.			
ORGANISATIONAL LEARNING [outward mode]			
<i>Teacher level of agreement on four outcomes related to organisational learning.</i>			
<i>1=strongly disagree; 2=mostly disagree; 3=in between; 4=mostly agree; 5=strongly agree</i>			
Collaborative climate (Collab)	3.58	.27	.91
Taking initiatives and risks (Risks)	3.27	.33	.96
Teacher participation and engagement (Parten)	3.38	.37	.96
Professional development (Prodev)	3.09	.25	.90
TEACHERS' WORK [outward mode]			
<i>Student level of agreement on the way teachers work in the classroom.</i>			
<i>1=strongly disagree; 2=mostly disagree; 3=in between; 4=mostly agree; 5=strongly agree</i>			
Like the way teachers teach (Lkinstr)	3.01	.35	.85
Relate schoolwork to future life (Futlife)	3.32	.27	.64
Use variety of activities (Varact)	3.13	.29	.88
Discuss work with student (Diswk)	3.18	.30	.83
Classes well organised (Org)	3.36	.29	.86
Expect best work (Bestwk)	4.07	.22	.69
Constantly challenged in class (Chall)	3.18	.21	.80

<p>PARTICIPATION IN SCHOOL. [outward mode]</p> <p><i>Student indication of participation in school.</i></p> <p><i>0=never; 1=rarely; 2=sometimes; 3=frequently; 4=always.</i></p>			
Not absent from school or class (Notab)	2.04	.23	.54
Extra-curricular participation (Expart)	2.01	.44	.77
Number of extra-curricular activities (Numac)	2.05	.43	.66
Do extra work (Exwk)	2.35	.32	.61
Making decisions and setting goals (Goalset)	3.02	.19	.71
<p>ENGAGEMENT WITH SCHOOL [outward mode]</p> <p><i>Student level of agreement on six aspects related to engagement with learning</i></p> <p><i>1=strongly disagree; 2=mostly disagree; 3=in between; 4=mostly agree; 5=strongly agree</i></p>			
Student teacher relationships (Studteach)	3.12	.29	.91
Satisfaction with peer interaction (Peers)	4.16	.19	.69
Usefulness of schoolwork (Utility)	3.62	.23	.87

Table 4

Direct, total, indirect effects and correlations of latent variables influencing Student Outcomes

Variable	Direct Effects <i>p</i>	JknStd Error	Total Effects <i>t</i>	Indirect Effects <i>i</i>	Correlation <i>r</i>
<b>SCHOOL PROFILE R<sup>2</sup>= .31 (d= 0.83) Q<sup>2</sup>= .29</b>					
SES	.56	.07	.56	-	.56
<b>LEADER R<sup>2</sup>= .07 (d= 0.96) Q<sup>2</sup>= .03</b>					
SES	-	-	-.15	-.15	-.06

School Profile	-.26	.09	-.26	-	-.26
<b>ACTIVE INVOLVEMENT R<sup>2</sup>= .82 (d= 0.42) Q<sup>2</sup>= .81</b>					
SES	-	-	-.13	-.13	-.12
School profile	-	-	-.24	-.24	-.30
Leader	.90	.02	.90	-	.90
<b>DISTRIBUTED LEADERSHIP R<sup>2</sup>= .43 (d= 0.75) Q<sup>2</sup>= .40</b>					
SES	-	-	-.09	-.09	-.14
School profile	-	-	-.16	-.16	-.31
Leader	-	-	.59	.59	.62
Active involvement	.63	.07	.65	-	.65
<b>ORGANISATIONAL LEARNING R<sup>2</sup>= .84 (d= 0.40) Q<sup>2</sup>= .83</b>					
SES	-	-	-.12	-.12	-.22
School Profile	-	-	-.22	-.22	-.33
Leader	.30	.09	.83	.54	.84
Active Involvement	.36	.09	.59	.24	.86
Distributed leadership	.36	.05	.36	-	.78
<b>TEACHER WORK R<sup>2</sup>= .08 (d= 0.96) Q<sup>2</sup>= .04</b>					
SES	-	-	-.03	-.03	-.07
School Profile	-	-	-.06	-.06	-.09
Leader	-	-	.23	.23	.27
Active Involvement	-	-	.17	.17	.24

Distributed Leadership	-	-	.10	.10	.09
Organisational Learning	.28	.09	.28	-	.28

Table 4 cont.

<b>PARTICIPATION IN SCHOOL R<sup>2</sup>= .47 (d= 0.73) Q<sup>2</sup>= .43</b>					
SES	-	-	-.30	-.30	-.35
School Profile	-.51	.07	-.54	-.03	-.55
Leader	-	-	.10	.10	.24
Active Involvement	-	-	.07	.07	.26
Distributed Leadership	-	-	.04	.04	.15
Organisational Learning	-	-	.12	.12	.24
Teacher Work	.41	.08	.41	-	.46
<b>ENGAGEMENT WITH SCHOOL R<sup>2</sup>= .80 (d= 0.45) Q<sup>2</sup>= .79</b>					
SES	.18	.05	.08	-.10	.05
School Profile	-	-	-.18	-.18	-.03
Leader	-	-	.20	.20	.27
Active Involvement	-	-	.14	.14	.24
Distributed Leadership	-	-	.09	.09	.08
Organisational Learning	-	-	.24	.24	.25
Teacher Work	.77	.03	.87	.10	.87
Participation	.25	.05	.25	-	.53

Note: JknStd refers to the Jackknife Standard Error of the Direct Effects path coefficient.

d is the residual standard error.