The Influence of Leadership Style on Schools as Learning Organisations in Hong Kong

by

Janet Wai-Yin LO

BSc., MEd.

A thesis submitted for the degree of

Doctor of Business Administration

International Graduate School of Management
Division of Business and Enterprise

University of South Australia

24 January 2005

UNIVERSITY OF
SOUTH AUSTRALIA
31 AUG 2005
LIBRARY

DOCTOR OF BUSINESS ADMINISTRATION

PORTFOLIO/DISSERTATION SUBMISSION
SUPERVISOR APPROVAL DECLARATION

Candidate Name: Janet Wai-Yin LO UniSA Candidate ID Number: 100012294

Dear Sir

To the best of my knowledge, the portfolio contains all of the candidate's own work completed under my supervision, and is worthy of examination.

I have approved for submission the portfolio that is being submitted for examination.

	21 Jan 2005
.....	.....
Signature: Principal Supervisor	Date
Dr Lim Yew Ban	
.....	
Name	
.....	.....
Signature: Associate Supervisor *(where applicable)*	Date
.....	
Name	

Supported by:

	12/1/05
.....	.....
for Professor David Richards	Date
Chair, IGSM Doctoral Board of Examiners	

Table of Contents

	Page
List of Figures	vi
List of Tables	vii
Summary	ix
Declaration	xii
Acknowledgements	xiii
Chapter 1: Research Problem and Study Focus	1
1.1 Background	1
1.2 Failure of Educational Reform	3
1.3 The Learning Organisation as an Alternative Strategy	5
1.4 The Learning Organisation Concept and Characteristics of the Learning School	6
1.5 Effect of Leadership Style on Schools' Capability to Become Learning Organisations	8
1.6 Research Questions	9
1.7 Significance of This Research	10
Chapter 2: Literature Review	12
2.1 Definition of the Learning Organisation	13
2.1.1 Defining the Learning Organisation from Different Perspectives	13
2.1.2 Defining the Learning School	16
2.1.3 Peter Senge's Learning Organisation Model	18
2.2 Learning in the Learning Organisation	23
2.2.1 Different Levels of Learning	24
2.2.2 Action and Change as Learning Outcomes	27
2.2.3 Individual vs Organisational Learning	28
2.3 Characteristics of the Learning Organisation	28
2.3.1 Characteristics of the Business Learning Organisation	29
2.3.2 Characteristics of the Learning School	30
2.4 Practice of the Learning Organisation Concept in Schools	32
2.4.1 Developing Personal Mastery in Schools	33
2.4.2 Developing Mental Model in Schools	34
2.4.3 Developing Shared Vision in Schools	36
2.4.4 Developing Team Learning in Schools	37
2.4.5 Developing Systems Thinking in Schools	39
2.5 The Role of Leadership	41
2.5.1 The Various Roles of the Leader	42
2.5.2 Leadership in the Learning School	44

2.5.3 The Leader's Role in Facilitating the Practice of Personal Mastery ... 45
2.5.4 The Leader's Role in Facilitating the Practice of Mental Model ... 47
2.5.5 The Leader's Role in Facilitating the Practice of Shared Vision ... 48
2.5.6 The Leader's Role in Facilitating the Practice of Team Learning ... 49
2.5.7 The Leader's Role in Facilitating the Practice of Systems Thinking ... 50
2.6 The Influence of Leadership Style on Schools' Capability to Become Learning Organisations ... 52
2.6.1 Transactional Leadership ... 52
2.6.2 Transformational Leadership ... 54
2.6.3 Laissez-faire Leadership ... 58
2.6.4 Transformational vs Transactional Leadership ... 58
2.6.5 Impact of Leadership Style on School Effectiveness ... 60
2.7 Other Influencing Conditions ... 63
2.7.1 School Culture ... 63
2.7.2 School Structures ... 63
2.7.3 Resources ... 65
2.8 Potential Difficulties for Schools ... 65
2.8.1 Difficulties of Practicing Personal Mastery in Schools ... 66
2.8.2 Difficulties of Practicing Mental Model in Schools ... 66
2.8.3 Difficulties of Practicing Shared Vision in Schools ... 67
2.8.4 Difficulties of Practicing Team Learning in Schools ... 67
2.8.5 Difficulties of Practicing Systems Thinking in Schools ... 69
2.9 The Need for This Research ... 70
Chapter 3: Methodology ... 72
3.1 Objectives ... 72
3.2 Research Methods ... 75
3.3 Research Design ... 76
3.3.1 Data Collection Instruments ... 76
3.3.2 Variables and Their Measurement ... 79
3.4 Procedures ... 79
3.4.1 Prior Preparation ... 79
3.4.2 Process ... 80
3.4.3 Data Manipulation ... 81
3.5 Limitations of the Research Design ... 82
Chapter 4: Data Analysis and Findings - Survey ... 84
4.1 Analysis of Demographic Data ... 84
4.2 Reliabilities, Inter-correlations and Factor Analysis ... 86

4.2.1 School Leadership Questionnaire: Reliabilities and Inter-correlations ---- 86
4.2.2 Learning School Assessment: Reliabilities, Inter-correlations and Factor Analysis ---- 88
4.3 Findings for Question One ---- 91
4.3.1 Leadership Styles Adopted by School Principals ---- 91
4.3.2 Relationship Between Leadership Style and School Type ---- 93
4.3.3 Relationship Between Leadership Style and Period of Current Principalship ---- 98
4.4 Findings for Question Two ---- 103
4.4.1 Practice of the Five Disciplines in Schools ---- 103
4.4.2 Relationship Between the Display of Learning Organisation Characteristics and School Type ---- 105
4.4.3 Relationship Between the Display of Learning Organisation Characteristics and Staff Size ---- 107
4.4.4 Relationship Between the Display of Learning Organisation Characteristics and School History ---- 109
4.4.5 Relationship Between the Display of Learning Organisation Characteristics and Period of Current Principalship ---- 110
4.5 Findings for Question Three ---- 111
4.5.1 Relationship Between the Display of Learning Organisation Characteristics and Transformational Leadership ---- 111
4.5.2 Relationship Between the Display of Learning Organisation Characteristics and Transactional Leadership ---- 113
4.5.3 Relationship Between the Display of Learning Organisation Characteristics and Laissez-faire Leadership ---- 115
4.6 Findings for Question Four ---- 117
4.6.1 Development of a Multiple Regression Model ---- 117
4.6.2 Residual Analysis ---- 121
4.7 Findings for Question Five ---- 122
4.8 Summary of Survey Findings ---- 124
Chapter 5: Data Analysis and Findings - Interview ---- 129
5.1 Analysis of Interview Data ---- 129
5.2 Background of the Interviewees ---- 130
5.3 Findings for Interview Question One ---- 131
5.3.1 Allocation of Sufficient Resources to Support Professional Development ---- 133
5.3.2 Provision of Relevant Training Opportunities ---- 134

5.3.3 Encouragement of Critical Examination of Current Practices and Professional Improvement ---- 135
5.3.4 A High Level of Job Satisfaction ---- 136
5.4 Findings for Interview Question Two ---- 138
5.4.1 Willingness to Change and Openness to New Ideas ---- 140
5.4.2 Freedom to Experiment and Take Risk ---- 140
5.4.3 Mistakes Viewed as Learning Opportunities ---- 141
5.4.4 Encouragement of Reflective Dialogue ---- 142
5.4.5 Acceptance of Multiple Viewpoints ---- 143
5.5 Findings for Interview Question Three ---- 144
5.5.1 A Clear Understanding of the School Vision ---- 145
5.5.2 Wide Participation in Establishing the School Vision ---- 146
5.5.3 Staff's Commitment to the School Vision ---- 146
5.5.4 Alignment of the Curriculum and Activities to the School Vision 147
5.6 Findings for Interview Question Four ---- 148
5.6.1 Encouragement of Collaboration ---- 149
5.6.2 Sharing and Professional Dialogue Among Teachers ---- 151
5.6.3 Training Opportunities for Teams of Teachers ---- 151
5.6.4. An Atmosphere of Trust and Respect ---- 152
5.7 Findings for Interview Question Five ---- 153
5.7.1 Sharing of Decision Making ---- 154
5.7.2 Open and Reciprocal Channels of Communication ---- 155
5.8 The Positive Effects of Transactional Leadership Behaviours ---- 156
5.8.1 Contingent Reward ---- 157
5.8.2 Active Management-by-Exception ---- 159
5.9 Summary of Interview Findings ---- 160
Chapter 6: Conclusion and Recommendations ---- 162
6.1 Discussion on Major Findings ---- 162
6.1.1 Leadership Styles Adopted by School Principals in Hong Kong-- 162
6.1.2 Extent of Hong Kong Schools Displaying Learning Organisation Characteristics ---- 164
6.1.3 Relationship Between Leadership Style and the Display of Learning Organisation Characteristics ---- 166
6.1.4 Overall Effect of Each Independent Variable on Schools' Display of Learning Organisation Characteristics ---- 166
6.1.5 Leadership Attributes and Behaviours Which Foster the Practice of the Five Disciplines in Schools ---- 167
6.2 Implications and Recommendations ---- 168
6.2.1 Adopting Transformational Leadership in Schools ---- 168

6.2.2 Promoting the Practice of Team Learning in Schools 169
6.2.3 Promoting the Practice of Mental Model in Schools 171
6.2.4 Providing Leadership Training for Principals 172
6.2.5 Building Teachers' Capability 174
6.3 Conclusions 175
6.4 Limitations of the Study and Suggestions for Further Research 176
References 181
Appendix 1: Survey Questionnaires 205
Appendix 2: Interview Questions 211
Appendix 3: List of Variables and Their Measurement 212
Appendix 4: Independent and Dependent Variables Associated with Each Research Question 213
Appendix 5a: Email to school principals 214
Appendix 5b: Letter to teachers 216
Appendix 6: Information Sheet 218
Appendix 7a: Consent Form - Participation in Interview 220
Appendix 7b: Consent Form - Retainment of Audiotaped Materials 221

List of Figures

Number		*Page*
Figure 1	Scatterplots of transformational leadership versus the five disciplines	112
Figure 2	Scatterplots of transactional leadership versus the five disciplines	114
Figure 3	Scatterplots of laissez-faire leadership versus the five disciplines	116
Figure 4	Scatterplot matrix on each of the independent variables versus the dependent variable	118
Figure 5	Studentized residuals of the sample observations	121
Figure 6	Cook's Distances of the sample observations	121
Figure 7	Scatterplot of model residual versus predicted LO	122
Figure 8	Histogram of standardized residuals	122
Figure 9	Normal P-P plot of regression standardized residuals	122

List of Tables

Number		*Page*
Table 1	Perspectives adopted in defining the learning organisation	14
Table 2	Classifications of learning into different levels	24
Table 3	Characteristics of the business learning organisation	29
Table 4	Characteristics of the learning school	31
Table 5	Mapping of the LSA statements to the five disciplines	77
Table 6	Mapping of the SLQ statements to the three leadership styles and nine leadership dimensions	78
Table 7	Demographic profile of respondents by school type	84
Table 8	Demographic profile of respondents by staff size	84
Table 9	Demographic profile of respondents by school history	85
Table 10	Demographic profile of respondents by period of current principalship	85
Table 11	Reliabilities of the SLQ	87
Table 12	Inter-correlations among the nine leadership dimensions on the SLQ	87
Table 13	Inter-correlations among the three leadership styles on the SLQ	88
Table 14	Reliabilities of the LSA	89
Table 15	Inter-correlations among the five disciplines	89
Table 16	Eigenvalues and % of explained variance in the unrotated solution	90
Table 17	Unrotated factor matrix and communalities for the five disciplines	90
Table 18	Summary statistics of scores from the SLQ	91
Table 19	T-statistics on the relationship between leadership style and school type	94
Table 20	The mean scores for the three leadership styles within the group of primary schools	95
Table 21	T-statistics on paired differences among the mean scores of the three leadership styles within the group of primary schools	96
Table 22	The mean scores for the three leadership styles within the group of secondary schools	97
Table 23	T-statistics on paired differences among the mean scores of the three leadership styles within the group of secondary schools	97
Table 24	Linear regression models on the relationship between leadership style and period of current principalship.	98
Table 25	The mean scores on the three leadership styles within the 1-5 year group of current principalship	99
Table 26	T-statistics on paired differences among the mean scores of the three leadership styles within the 1-5 year group of current principalship	100
Table 27	The mean scores on the three leadership styles within the 6-10 year group of current principalship	100

Number		*Page*
Table 28	T-statistics on paired differences among the mean scores of the three leadership styles within the 6-10 year group of current principalship	101
Table 29	The mean scores on the three leadership styles within the 11+ year group of current principalship	101
Table 30	T-statistics on paired differences among the mean scores of the three leadership styles within the 11+ year group of current principalship	102
Table 31	Summary statistics of scores from the LSA	103
Table 32	Score distribution for the five disciplines	105
Table 33	T-statistics on the relationship between the display of learning organisation characteristics and school type	106
Table 34	Linear regression models on the relationship between display of learning organisation characteristics and staff size	108
Table 35	Linear regression models on the relationship between display of learning organisation characteristics and school history	109
Table 36	Linear regression models on the relationship between display of learning organisation characteristics and period of current principalship	110
Table 37	Correlation matrix on the five disciplines versus the five dimensions of transformational leadership	112
Table 38	Correlation matrix on the five disciplines versus the three dimensions of transactional leadership	114
Table 39	Correlation matrix on the five disciplines versus the laissez-faire leadership dimension	116
Table 40	Sub-models of regression development	119
Table 41	Correlation matrix of transformational leadership items on the SLQ versus the five disciplines	123
Table 42	Important leadership attributes/behaviours which promote the practice of the five disciplines	124
Table 43	Characteristics of the five interviewees	130
Table 44	Findings related to the practice of personal mastery in selected schools	132
Table 45	Findings related to the practice of mental model in selected schools	139
Table 46	Findings related to the practice of shared vision in selected schools	144
Table 47	Findings related to the practice of team learning in selected schools	149
Table 48	Findings related to the practice of systems thinking in selected schools	154
Table 49	Transactional leadership behaviours which foster the display of learning organisation characteristics	157

Summary

This study examines the relationship between the leadership style of principals and the extent to which schools display characteristics of the learning organisation. It consists of a mass survey participated by teachers from over 250 primary and secondary schools in Hong Kong, followed by individual interview with selected respondents. Each participant is required to complete two questionnaires in the survey: the School Leadership Questionnaire (SLQ) and the Learning School Assessment (LSA). The SLQ is used to measure school leadership and identify the prevalent leadership styles adopted by principals as perceived by teachers. It is adapted from the Multifactor Leadership Questionnaire Rater Form 5X developed by Bass and Avolio (1995, 2000) which measures attributes and behaviours (or dimensions) associated with the full range leadership continuum. The LSA is designed by the researcher for use in the study to measure the extent of a school displaying the characteristics of a learning organisation. The 29 statements are derived from the list of characteristics typical of the learning school as identified from literature. They depict the organisational reality of a school engaged in practicing Peter Senge's (1990a) five learning organisation disciplines: personal mastery, mental model, shared vision, team learning and systems thinking. Statistical treatments involving descriptive and inferential statistics are employed to analyse the survey data, including linear regression, multiple regression model, the Pearson's product-moment correlation and the t-test technique. For the interviews, a list of questions are asked in order to identify the leadership attributes and behaviours perceived to be influential in the practice of each of the five disciplines in the school setting.

The results show that overall, school principals in Hong Kong adopt transactional leadership more than other leadership styles. Secondary school principals are more inclined to adopt transactional leadership, while primary school principals practice transformational leadership more often. Newer principals appear to favour transactional leadership more, while those who have served in their school for more than 10 years tend to practice transformational leadership.

It is found that an average school in Hong Kong displays learning organisation characteristics (or resembles the ideal learning organisation) to a moderate extent.

Schools have the strongest tendency to adopt personal mastery and shared vision, while the disciplines of mental model and team learning are given little attention. Primary schools in general exhibit learning organisation characteristics to a greater extent than secondary schools. They also have a stronger tendency or capability to practice each of the five disciplines compared with secondary schools. School history and period of leadership by the current principal both relate positively with the display of learning organisation characteristics, while staff size exerts a slightly negative impact on the practice of the five disciplines in schools.

The relationship between transformational leadership and each of the five disciplines is strongly positive. The resulting regression model shows that 95% of the variation in learning organisation characteristics can be explained by the factor of transformational leadership. That is, increase in principals' transformational behaviours significantly strengthens schools' tendency to behave like learning organisations. Within the overall regression model, the effect of transactional leadership is also found to be weakly positive. On the other hand, laissez-faire leadership exerts a strongly negative influence on the practice of the five disciplines in schools.

Attributes/behaviours identified as powerful determinants for promoting the practice of the five disciplines in schools are mainly associated with the five dimensions of transformational leadership. These attributes/behaviours involve the school principal (1) In idealised influence (attribute): instilling pride in others for being associated with him/her, going beyond self-interest for the good of all in the school, acting in ways that build others' respect for him/her, and displaying a sense of power and confidence. (2) In idealised influence (behaviour): talking about his/her most important values and beliefs, and emphasising the importance of having a collective sense of mission that is shared by all in the school. (3) In inspirational motivation: talking optimistically about the future of the school, and expressing confidence that goals will be achieved. (4) In intellectual stimulation: suggesting new ways of looking at how to complete assignments, and re-examining critical assumptions to question whether they are appropriate for different situations. (5) In individualised consideration: spending time teaching and coaching others, and helping individuals in the school to develop their strengths. Interview findings also reveal that school principals - including those who are typical transformational leaders - also demonstrate transactional leadership behaviours

which exert positive effects on their schools. In particular, behaviours associated with the transactional leadership dimensions of contingent reward and active management-by-exception have proved to be powerful influences in fostering the practice of the five disciplines.

Based on the findings, recommendations are made which include the advocation of transformational principalship, measures to promote the practice of the neglected disciplines of mental model and team learning in schools, provision of appropriate leadership training for school principals, and building teachers' capability for organisational learning and adaptation to changes.

Declaration

I declare that this thesis does not incorporate without acknowledgment any material previously submitted for a degree or diploma in any university; and that to the best of my knowledge it does not contain any materials previously published or written by another person except where due reference is made in the text.

Janet Wai-Yin LO 24 January 2005

Acknowledgments

My sincere gratitude is extended to those principals who responded to my invitation and encouraged their teachers to participate in this study. I also wish to thank all the teachers who took part in the survey and in the interviews, sharing their perceptions and beliefs about the impact of leadership behaviours and the practice of the five learning organisation disciplines in their school.

Many thanks to my supervisor, Dr. Lim Yew Ban, who provided me valuable guidance during the study, while at the same time respecting my professional expertise and allowing me the freedom I needed.

I am grateful to my family and friends for their encouragement and support. Most of all, I thank God who gave me the persistence and wisdom to continue with my study, and for His healing throughout my illness and surgery. Without His grace I would not have completed this thesis.

Chapter 1: Research Problem and Study Focus

1.1 Background

Hong Kong has experienced significant changes in recent years due to the fast economic development in the Asia-Pacific area and the political transition in 1997 from a British colony to a Special Administrative Region (SAR) of China. With the formation of the new government comes the introduction of many new initiatives, and pressure to push for accelerated progress of existing reforms. In terms of education, Hong Kong has been echoing the international trends of educational reform and school-based management in different parts of the world, particularly western societies like Australia, UK and USA.

The launch of the School Management Initiative (SMI) in 1991 was a significant step towards the development of school-based management in Hong Kong. The government made it clear that the initiative was part of the its public sector reform, hence the earlier assertion that it was in essence a managerial restructuring (Education and Manpower Bureau, 1991). The SMI suggested 18 recommendations which aimed to help schools establish clearly stated educational goals, a well-organised school-based curriculum development scheme, a systematic process for determining educational needs, strategies for improving student performance, high involvement of teachers in decision making, a committed teaching force with strong team spirit, and a quality assurance mechanism for effective monitoring and regular evaluation of programmes. The purpose of the initiative was to offer a school-based management framework for schools to follow in the hope to change them from a rigid and inactive setting to a flexible, active and goal-oriented management system. Schools were delegated responsibilities and provided with flexibility and autonomy to manage their own operation, resources and planning for better performance (Education and Manpower Bureau, 1991). When the SMI was introduced in 1991, not much enthusiasm was shown in the school sector.

After China's takeover of Hong Kong in 1997, the government pushed on with the initiative, and in the subsequently released Education Commission Report No. 7 (ECR7), SMI was renamed School Based Management (SBM), and packaged with the label of improving "school management and performance towards the provision of quality school education to better meet the needs of students" (Education Commission,

1997). So what was originally instigated as a managerial restructuring was then packaged as a measure of quality enhancement, and promoted in the name of educational decentralisation. In his first policy speech in October 1997, the Chief Executive of the newly formed Hong Kong Special Administrative Region endorsed the recommendations of ECR7 and made it government policy. All schools in the public sector were required to fully implement the recommendations of the SBM by year 2000. To facilitate the implementation of the SBM, the government further streamlined its administrative procedures and devolved more autonomy and responsibilities to schools, particularly in the aspects of personnel management, financial matters and curriculum arrangement.

In 2000, the government issued another consultation document which stated that schools "have to work in partnership with parents and the wider community in order to harness their support and tap their resources in providing every student with learning experiences suited to individual aptitude and needs" (Advisory Committee on SBM, 2000, p.1). It was hoped that through a new spirit of professionalism from teachers, enhanced leadership from principals and deeper commitment from parents and the community, the quality of education in schools would be improved. In order to ensure the involvement of stakeholders and to bring more democracy and transparency to school management, the Education (Amendment) Bill was passed in 2002 requiring that publicly-funded schools set up their own School Management Committee (SMC) as a legal entity by 2012. Teachers and stakeholders from the community including parent and alumni representatives must make up at least 40% of the committee members (Advisory Committee on SBM, 2000).

With the introduction of school-based management and other educational reform initiatives, high demands are placed on schools to strengthen their capability and become more accountable. The roles of school principals and teachers have also changed. For example, they no longer just implement the curriculum, but are required to participate in the development of school-based curriculum. Instead of executing educational policies as they have done in the past, they are now asked to lead and contribute to reform efforts. It is expected that through educational reform schools would develop inclusive collaborative structures, effective communication channels, integrated professional development and learning focused leadership. Schools would

become more adaptive to internal and external demands of the changing environment, and school management would be more professional and quality oriented (Education Commission, 2000). Besides school restructuring, the reform also focuses on turning school principals and teachers into proactive professionals and lifelong learners (Education and Manpower Bureau, 2003).

1.2 Failure of Educational Reform

Despite the Hong Kong government's mandates and initiatives to push for change, many reform efforts have not brought about satisfactory results. Chan (2004) finds that "teachers face public criticism from a society which tends to hold a negative perception of the performance of schools and education as a whole" (p.8). Poor public perceptions of education have contributed to drooping teacher morale and sense of efficacy, and to the attractiveness of teaching as profession. Schools are loaded with mandates and imposed duties; but under a well-protected environment, school principals and teachers do not recognise the need to evaluate and reflect on their work. Many teachers see changes as extra workloads and uncertainties instead of opportunities to examine problems, investigate causes and look for new alternatives.

Findings from local research show that educational decentralisation and enforced implementation of the SBM in Hong Kong has not brought about collective decision making or ready involvement of stakeholders in school management. For example, Cheng and Chan (2000) finds that in most schools, "authority decentralised mainly goes to the school sponsoring body, school management committee and principals but not too much to teachers and parents" (p.211). The study by Yu (2002) likewise reveals that the atmosphere of collective decision-making has not yet been fostered within Hong Kong schools. Chan's (2000) survey on 294 teachers from 50 schools indicates that only 42% of the respondents think they have influence in deciding the school goals. A study conducted by Ng (1999) on parents' participation in school activities finds that most of the school personnel demonstrate unwelcome attitudes towards parental involvement and parents themselves do not like to be involved. He concludes that "the intent of involving parents in school management has not yet been fully realised" (p.557).

Both Cheng (1996) and Lam and Pang (2003) believe that the educational reform in Hong Kong may bring some management restructuring to schools, but it has not resulted in productive changes and has failed to prepare schools for the important transformation as expected. Wong (1992, 1993) also point out that school-based management alone cannot automatically bring about effective schools. The focus needs to shift from structural changes to developing a drive for continuous school improvement.

The same situation has occurred in other developed countries which have undergone a longer history of educational reform. Schools still face criticisms from the public for their inability to manage themselves effectively. According to Glickman (1998), the school system "is being attacked continuously, with some calling to replace public schools with privatisation, tuition vouchers, and unbridled free choice" (p.1). Schools are criticised to be obsolete and not working well enough to serve the needs of individuals in a fast-paced society (Wagner, 1998). Joyce and Calhoun (1995) describe the reality in many schools as "hampered by structural characteristics that make innovation laborious: no time in the workday for collegial inquiry, no structures for democratic decision making, a shortage of information, and absence of a pervasive staff development system" (p.51). Teachers are found to be "isolated in their roles, with little connection among departments and groups and with a very low capacity for joint problem solving" (Dalin, 1993, p.24). Many feel themselves to be powerless, under-privileged and of low status, unable to influence their own work environment (Kohn, 1989).

Fullan and Miles (1992) attribute the failure of many educational reforms to the strategies used which do not bring about fundamental change to schools. Baker et al (1991) also criticise many reform initiatives to be superficial, piecemeal and of an ad hoc nature. This is best illustrated by the study of Shields and Newton (1994) which investigates schools participated in an improvement program (SSIP) initiated by the Canadian government. The SSIP is found to focus on action, not learning; and staff development activities are few. There is little discussion of concepts such as school climate or leadership. Some schools have a mission statement but goals are not identified and impact on students is unclear. Teachers pay lip service, but are not team players. Compartmentalisation and *them-and-us* attitudes are also prevalent. David

(1989) points out that structural changes do not guarantee school improvement because they often do not reshape the learning culture nor promote the personal development of teachers.

Fullan (1993) warns about relying on mandates to achieve school improvement: "Mandates alter some things, but they don't affect what matters. When complex change is involved, people do not and cannot change by being told what to do" (p.24). The essence of reforms should not be "implementing single innovations but changing the culture of the school" (Hopkins et al, 1994, p.20). Productive change requires changes in people's skill, behaviour and belief (Fullan, 1992). The success of managing educational change therefore depends on whether schools are able to activate the inner potential and insight of school principals and teachers. This idea concurs with what Ferguson (1982) refers to as a *paradigm change* which involves people modifying their underlying assumptions, developing a new insight that deepens and integrates previous understanding, and equipping themselves with the skills of continuous learning in the workplace.

1.3 The Learning Organisation as an Alternative Strategy

West-Burnham (1992) argues that the challenges facing schools under decentralisation are so profound that traditional approaches to managing schools are no longer appropriate and radical alternatives need to be considered. In response to the failure of educational reforms, educators have started to look at a new and comprehensive strategy that can foster school-wide change and affect all aspects of the school culture. It is suggested that the adoption of learning organisation principles which have been successfully practiced in business and industry may be useful in empowering schools to survive in an era of change (Senge et al, 2000). O'Neil (1995) justifies that since both education and business have to face rapid changes in the world, both require organisational learning in order to improve their capacity for adaptation. Another basic premise is that "if businesses are becoming more like schools in that they recognise the need for continuous learning and continuous education among their workers, then schools are becoming more like businesses" (Thornett and Viggiani, 1996, p.29). Jenkins (1995) also suggests that in order to cope with the increasingly turbulent

educational environment, to ensure efficiency and productivity and to enhance staff motivation and morale, school principals need to rethink schools as organisations and manage schools like entrepreneurs.

Although the learning organisation concept is developed from and mainly applied in business and industry, there have been new arguments emerging from the education profession in the developed world that any organisation with the emphasis of learning as its core value can also become a learning organisation, including schools (Dufour, 1997; Gunter, 1996; Keefe, 1997; Senge et al, 2000). Louis (1994) asserts that the learning organisation framework "has potential for helping to think about the problem of how schools change basic assumptions about *what it is we do here* where demands for significant reforms are made" (p.4). Meyer (2000) also contends that the ongoing changes initiated by educational reforms can best be understood as situations of learning for schools in response to a turbulent environment.

Hallinger (1999) emphasises that the ability of schools to adapt to changes and improve strongly depends on their capacity to turn themselves into learning organisations. Learning schools are believed to be better equipped for articulating the changed roles of principals and teachers under school-based management (Darling-Hammond, 1998). Leithwood et al (1998a) similarly suggest that the change from being decision executors to decision makers makes it necessary for schools to become learning organisations in order to grow and adapt through continuous learning.

1.4 The Learning Organisation Concept and Characteristics of the Learning School

The learning organisation concept has been defined in various ways based on a number of divergent perspectives adopted by different writers. These include the learning-to-learn perspective focused on problem solving (Handy, 1991; Senge, 1990a; Swieringe and Wierdsma, 1994); the knowledge perspective involving the generation, transfer and integration of knowledge and information (Dixon, 1994; Garvin, 1993); the change perspective which aims at improving and transforming the organisation in order to adapt and succeed in the changing environment (Bennett and O'Brien, 1994; Garatt, 1990; Gordon, 1992; Marquardt, 1996); the action perspective where frameworks of activities

are designed for staff and managers in the organisation (Dumaine, 1994; Watkins and Marsick, 1993); and the planning perspective which focuses on devising plans to meet the organisation's strategic needs (Burgoyne, 1988; Burgoyne et al, 1994).

Among the above definitions, it is Peter Senge's (1990a) model which has accelerated the spread and popularity of the concept. He incorporates five principles or *disciplines* in his learning organisation model: *personal mastery*, *mental model*, *shared vision*, *team learning* and *systems thinking*. Central to the concept is the belief that organisations need to develop flexibility, adaptability and learning ability in order to deal with problem situations and demands of the changing world. Such capability can only be cultivated if organisations become places where learning is fundamental. Senge's (1990a) model differs from others in placing a particularly strong emphasis on the role of leaders, considering them as *designers*, *stewards* and *teachers* who are responsible for sustaining change efforts (Senge, 1999a, 1999b). In addition, while others focus only on the application of the learning organisation concept to business and industry, he points out that even non-business organisations such as schools can also become learning organisations. Practical guidelines are provided to schools on how to achieve the ideal learning school (Senge et al, 2000). It is argued that schools which learn can be

> "recreated, made vital, and sustainably renewed not by fiat or command, and not by regulation, but by taking a learning orientation. This means involving everyone in the system in expressing their aspirations, building their awareness and developing their capabilities together" (p.5).

Characteristics which are typical of the learning school can be identified from a review of literature (Johnston and Caldwell, 2001; Senge et al, 2000; Silins et al, 2002). These mainly cover the dimensions of effective communication channels, inclusive collaborative structures, integrated professional development, learning focused leadership, a trusting and collaborative climate, taking initiatives and risks, and shared and monitored mission. They are found to be consistent with Senge's (1990a) description regarding the practice of each of the five disciplines. Hence the extent to which a school displays the above characteristics demonstrates how well the five disciplines have been implemented, and how close the school resembles the ideal learning organisation.

1.5 Effect of Leadership Style on Schools' Capability to Become Learning Organisations

Senge (1990a, 1999a, 1999b) places a strong focus on leadership in his model and stresses that leaders play a central role in the pursuit of the learning organisation ideal. In the case of the learning school, principals are charged with the responsibility of facilitating the practice of the five disciplines in all aspects of the school life, and involving everyone in the school to participate in the process in order to achieve successful reforms (Senge et al, 2000).

Literature has emphasised leadership of principals as a crucial factor in recent educational change and school reforms (Cheng, 1997; Fullan, 1991; Hallinger and Murphy, 1991; Hunt, 1999). Some have advocated leadership as the key to enabling schools to become into learning organisations (e.g. Louis and Kruse, 1998; Mitchell, 1995; Silins and Mulford, 2002). School principals are therefore urged to establish the parameters within which learning can take place, and make learning an essential, regular part of the workplace.

It has been argued that traditional leadership is insufficient in preparing schools to cope with reform challenges (Leithwood, 1992; Mitchell and Tucker, 1992). Building the capacity for learning in schools demands a leadership style which is different from conventional models (Leithwood et al, 1994; Murphy and Louis, 1994). Transformational approaches to leadership have increasingly been advocated as productive in educational change and helping schools become learning organisations (Leithwood, 1994; Johnston and Caldwell, 2001; Yukl, 1998). On the other hand, there is also support concerning the effectiveness of transactional leadership in the educational context (Gore and Steven, 1998; Huberman and Miles, 1984; Leithwood and Jantzi, 1999). Research is therefore necessary to explore which leadership style best facilitates the practice of learning organisation principles in schools as a comprehensive reform strategy. By analysing the relationship between leadership styles and schools' capability to practice the five disciplines, information on how schools are similar to or different from the ideal of the learning organisation can be explained.

1.6 Research Questions

The purpose of this research is to investigate the relationship between the leadership style of school principals and the extent to which schools in Hong Kong display the characteristics of the learning organisation. The study aims at answering the following questions:

(1) (a) What prevalent leadership styles are adopted by school principals in Hong Kong?

(b) What is the relationship between leadership style and the following variables:

- School type (primary or secondary school)?
- Period of current principalship (years during which a school is led by its current principal)?

(2) (a) To what extent do schools in Hong Kong display characteristics of the learning organisation, as measured by evidence of practicing the following five disciplines in Peter Senge's (1990a) model:

- Personal mastery?
- Mental model?
- Shared vision?
- Team learning?
- Systems thinking?

(b) What is the relationship between the display of learning organisation characteristics and the following variables:

- School type (primary or secondary school)?
- Staff size (total number of staff in the school)?
- School history (years of operation since establishment)?
- Period of current principalship (years during which a school is led by its current principal)?

(3) What is the relationship between leadership style and the display of learning organisation characteristics, as measured by evidence of practicing the following five disciplines in Peter Senge's (1990a) model:

- Personal mastery?
- Mental model?
- Shared vision?
- Team learning?
- Systems thinking?

(4) Which variables exert the greatest overall influence on schools' display of learning organisation characteristics?

(5) What leadership attributes and behaviours of school principals are important in fostering the practice of personal mastery, mental model, shared vision, team learning and systems thinking in schools?

1.7 Significance of This Research

Research studies on the learning organisation have mostly targeted the business field, with less focus on the school setting. This study is significant because of its application of the learning organisation concept to the educational context. The majority of research studies on learning organisations or learning schools have been carried out in western developed countries. Culture exerts a great influence on leadership style and on the management of an organisation. What is found in western schools may not be applicable to those in Hong Kong. With a much shorter history of school restructuring and a more bureaucratic orientation compared with western schools, schools in Hong Kong need new insights and guidelines on becoming successful learning organisations. Findings of the study can serve as a strategic basis for future action and decision making, and for schools in Hong Kong to improve their learning capability through more effective leadership. They can also guide the direction of development into the type of learning organisation that is tailored to and suitable for schools operating within the context of educational reform in Hong Kong.

Since the value of learning for teachers would be increased if schools have principals who can create an environment where teachers can learn continuously, it is valuable to identify what leadership style best concurs with the learning orientation of teachers. This study contributes to new knowledge through identifying the leadership style and behaviours most likely to turn schools into learning organisations. The study can also raise the awareness of school principals and teachers that change should be regarded as an opportunity to learn and work more collaboratively together. Because of the complexity and uncertainty of change, this learning process should be a continuous one. Most school principals may not be competent to meet the increasing reform mandates, not to mention initiating changes and innovations in their schools. This study demonstrates a capacity for change through the principals building a culture of collective learning in the management structure of their schools.

Parts of this thesis are published in the following journals:

- *Studies in Educational Policy and Educational Philosophy* (Lo, 2004) (www.upi.artisan.se/docs/Doc205.pdf)
- *Social Sciences* (Lo, 2005) (http://www.education.ktu.lt/zurnalas/en/index.html)

Chapter 2: Literature Review

This chapter reviews the relevant literature which covers a number of conceptual domains. The review serves two main purposes. Firstly, key concepts and research findings of previous scholars are discussed which shape the theoretical foundation for the current study. Secondly, some of this literature provides useful materials for the development and testing of propositions which drive the investigation that follows.

The concept of the learning organisation can be traced back as far as the 1940s, but it was not until the late 1980s that some companies began to realise its potential. The movement of turning companies into learning organisations grew faster in the 1990s after Peter Senge's (1990a) book *The Fifth Discipline: The Art and Practice of the Learning Organisation* won wide attention and made the concept popular. Some successful learning organisation pioneers include Shell, General Electric, Johnsonville Foods, Quad Graphics and Pacific Bell in the United States; Rover Group in the UK and Honda in Asia (Longworth and Davies, 1996; Markuardt, 1996).

Interests in the learning organisation can be linked to increasing pressures for change facing many organisations. Such interest has been heightened as traditional structures, processes and behaviours are gradually viewed as impediments to dynamic changes required of organisations. It is suggested that organisations need to strengthen their abilities in order to recognise external signals, analyse increasing volumes of information, approach problems more systematically and challenge widely held assumptions (Drucker, 1989; Senge, 1990a).

Although the learning organisation concept is developed from and mainly applied in business and industry, new arguments have emerged from the education profession that any organisation with the emphasis of learning as its core value can also become a learning organisation, including schools. This trend arises as governments and employers become increasingly dissatisfied with the performance of their education systems. Because of the growing recognition of the importance of educational investment and performance to the competitive world, educators have begun to turn their attention to the adoption of learning organisation principles to improve school

management. Literature advocating the practice of the learning organisation concept or organisational learning in schools has begun to accumulate (Cicmil and Kekäle, 1997; Cousins, 1996; Diggins, 1997; Duffy, 1997; Dufour, 1997; Gunter, 1996; Keefe, 1997; Leithwood and Louis, 1998; Louis, 1994; Marks and Louis, 1999; Meyer, 2000; Mulford, 1998; O'Sullivan, 1997; Senge, et al, 2000; Stoll and Fink, 1996; Zederayko and Ward, 1999), but empirical studies on how schools can actually become successful learning organisations are still limited.

This literature review aims at exploring the following issues:

- How has the learning organisation been defined?
- What is the nature of learning which occurs in the learning organisation?
- What are the characteristics of the learning organisation? How are they presented in the school context?
- How can the five disciplines of the learning organisation be practiced in school management?
- What role does leadership play?
- How does leadership style influence schools' capability to become learning organisations?
- What are other influencing conditions?
- What are the potential difficulties for schools?

2.1 Definition of the Learning Organisation

The following sections discuss how the learning organisation has been defined and examine the five disciplines of the learning organisation put forward by Peter Senge (1990a).

2.1.1 Defining the Learning Organisation from Different Perspectives

Different writers have defined the learning organisation in various ways, reflecting the divergent perspectives adopted. Table 1 summarises these perspectives:

Table 1: Perspectives adopted in defining the learning organisation

Perspective	Writers
Learning-to-learn	Handy (1991), Senge (1990a), Swieringe and Wierdsma (1994)
Knowledge	Dixon (1994), Garvin (1993)
Change	Bennett and O'Brien (1994), Garatt (1990), Gordon (1992), Marquardt (1996)
Action	Dumaine (1994), Watkins and Marsick (1993)
Planning	Burgoyne (1988), Burgoyne et al (1994)

Some have defined the learning organisation from a learning-to-learn perspective. According to Senge (1990a) it is an organisation "where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together" (p.3). He incorporates five disciplines which are believed to be indispensable for building a successful learning organisation. These are personal mastery, mental model, shared vision, team learning and systems thinking. For Handy (1991), the learning organisation means two things at the same time: an organisation that learns and encourages learning in its people. Similar idea is echoed by Swieringe and Wierdsma (1994) who stress that the learning organisation is one where members learn through working together and work together through learning. The writers urge organisations to develop a culture of collective learning, group work and formal feedback mechanism. Such a culture is believed to integrate individuals from all hierarchical levels and groups to work together as an open system.

A knowledge perspective is adopted by both Garvin (1993) and Dixon (1994). The former considers the learning organisation to be "skilled at creating, acquiring, and transferring knowledge, and at modifying its behaviour to reflect new knowledge and insights" (p.80). Dixon (1994) focuses on the information processing cycle in her definition which involves the widespread generation of information, integration into the organisational context, collectively interpreted new information and authorisation of members to take responsible actions.

Some definitions are built on the notion of change. According to Marquardt (1996), the learning organisation continually transforms itself to better manager knowledge, utilise technology, empower people, and expand learning in order to adapt and succeed in the

changing environment. Garatt (1990) highlights the factors of flexibility and responsiveness in his definition. Bennett and O'Brien (1994) consider the learning organisation as one "that has woven a continuous and enhanced capacity to learn ... [which] results in continuous improvement in areas such as work processes, products and services, the structure and function of individual jobs, team work, and effective management practices" (p.42). Gordon (1992) adds that change and improvement should also involve the quality of environment where employees work.

The action perspective embraced by Watkins and Marsick (1993) defines the learning organisation based on a framework of daily activities including continuous opportunist learning, promotion of inquiry and dialogue, the use of collaborative structures for teams to capture and share learning, and a new role for managers to embrace teaching, act as a steward of learning and set up structures. Dumaine (1994) is likewise action-oriented and shapes the learning organisation into a body of work which parallels Senge's (1990a) five disciplines. It is argued that individuals in a learning organisation are able to

> "put aside their old ways of thinking (mental model), learn to be open with others (personal mastery), understand how their company really works (systems thinking), form a plan everyone can agree on (shared vision), and then work together to achieve that vision (team learning)" (p.96).

Burgoyne (1988) and Burgoyne et al (1994) take a planning perspective and consider the learning organisation as one which directs the life planning energies of managers in a way that allows the organisation to meet its strategic needs. Managers are expected to possess a complete understanding of existing problems, the ability to respond with flexibility to changing situations, a moral and ethical approach to management, and the ability to learn and apply learning.

In summary, while the above definitions and perspectives are not identical, there are important similarities. All these writers suggest that organisations will be better off if they become places where learning is fundamental. A common belief is that people and organisations should develop flexibility, adaptability and learning ability in order to deal with problem situations and changing environments.

2.1.2 Defining the Learning School

Few writers have attempted to define the learning organisation for the school context. Senge et al (2000) label schools which resemble learning organisations as *learning schools*. The learning school is described as one that is

> "recreated, made vital, and sustainably renewed not by fiat or command, and not by regulation, but by taking a learning orientation. This means involving everyone in the system in expressing their aspirations, building their awareness and developing their capabilities together. In a school that learns, people who traditionally may have been suspicious of one another - parents and teachers, educators and local business people, administrators and union members, people inside and outside the school walls, students and adults - recognise their common stake in the future of the school system and the things they can learn from one another" (p.5).

It is suggested that practicing the five principles of personal mastery, mental model, shared vision, team learning and systems thinking can empower schools to meet the challenges of educational reforms.

Simonaitiene (2001) is concerned with how the school as an organisation can acquire and develop its competence, that is, what and how school members have to learn. According to her,

> "school as learning organisation constantly creates and supports partnership and learning relations outside and inside the organisation, constantly reflects and analyses its perspectives and experience, transforms the data obtained into knowledge significant to reach the goals of organisation development and education" (pp.11-12).

For some, the learning school is a revitalising tool and an alternative to the bureaucracy of traditional school governance. Both Hord (1999) and Kruse and Louis (1997) see the learning school as a solution for restructuring and renewing the educational environment so that teachers could cultivate learning strategies to achieve better performance. Others are more concerned with the aspects of shared vision and democracy. Usdan et al (2001) consider the idea of the learning school as the process of a continually renewing cycle of learning that shapes a school's shared vision and actions. Lambert (2003) asserts that the learning school provides an opportunity for people to design their future by planning and deciding on their learning processes as a staff. For Fullan (1997), the learning school accommodates the premise of democratic processes

that allow for shared leadership and the facilitation of discussion that leads to an understanding of the dynamic complexities of the changing educational environment.

Other writers place a particular focus on professional development. Zederayko and Ward (1999) highlight the importance of teacher learning and outline a 3-year scenario that aims to facilitate teachers in the conceptualisation and performance of their work as both learners and educators. Joyce and Calhoun (1995) state four principles of professional development for the learning school: (1) Take an approach to professional growth that is purposeful and results-oriented. (2) Recognise that the best place for professional growth is the school itself, and create job-embedded opportunities for learning and growth. (3) Develop a school culture that is receptive to change, and create a context for staff development in which experimentation, collaboration, and commitment to continuous improvement are the norms throughout the school. (4) Regard professional development as a continuous process and the on-going work of a lifelong learner, rather than an event.

A number of writers treat the learning school as a professional learning community. Leithwood et al (1998a, 1998b) argue that within the school, the learning organisation takes on a broader sense of participation by the involvement of students, parents, teachers and administrators in a facilitative community. The learning organisation process creates a forum for people within the school district to pursue common purposes with a collective commitment to evaluate the efficacy of such purposes, and to adopt a new manner of processing. Such process involves analysis, modification and adaptation to continuously develop more effective and efficient ways of meeting the school's transcendent purpose (Leithwood et al, 1998a, 1998b). For Royal and Rossi (1997), learning schools are professional learning communities which have open communication processes, widespread sense of participation, an emphasis on teamwork, and the cultivation of organisation diversity. Focusing on the aspect of student achievement, Fast (1998) emphasises the important role of the learning school in establishing professional communities among teachers who work together to support student learning.

For the purpose of this study, Senge's (1990a) 5-discipline approach is adopted. The learning school is defined as one that

possesses the capability to change, grow and adapt by taking a learning orientation and practicing the five disciplines of personal mastery, mental model, shared vision, team learning and systems thinking. Stakeholders including students, teachers, the principal and supporting staff actively engage themselves in learning and continually improve their performance in order to meet both the school goals and increasing external demands.

2.1.3 Peter Senge's Learning Organisation Model

Among the various definitions for the learning organisation, Peter Senge's (1990a) model has been the most widely referenced in literature. His definition differs from the others in placing a particularly strong emphasis on the role of the leader. In addition, while others focus mainly on the application of the concept to business and industry, he points out that even non-business organisations can become learning organisations. Practical guidelines are provided on how schools can achieve such ideal (Senge et al, 2000).

Senge's (1990a) learning organisation model is built on the five principles (which he labels as *disciplines*) of *personal mastery*, *mental model*, *shared vision*, *team learning* and *systems thinking*.

Personal Mastery

Personal mastery is "the discipline of continually clarifying and deepening personal vision, of focusing energies, of developing patience, and of seeing reality objectively" (Senge, 1990a, p.7). It "goes beyond competence and skills, although it involves them. It goes beyond spiritual opening, although it involves spiritual growth" (p.141). Personal mastery is a special kind of proficiency and calling. It involves developing personal vision and long term aspirations. Senge (1990a) borrows from eastern spiritual traditions which believe that all change begins within and that individuals must look inward and make personal changes. Therefore this discipline concentrates on personal growth and development as the goal of learning. It asks people to continually clarify what is truly important to them and learn to perceive more clearly the gap between where they are and where they want to go. This develops a sense of *creative tension* and sets a target that deserves effort and commitment towards the personal goal. Grasping the discipline of personal mastery enables people to continually expand their abilities to learn, create and grow.

Besides motivating individuals to develop personal vision and make commitment to their own professional development, personal mastery also includes how they bring that knowledge to the organisation and use creativity to keep themselves and their organisation responsive to changing environmental circumstances. Senge (1990a) appeals to the desire for personal growth and seeks to merge it with organisational development. He stresses that "organisations learn only through individuals who learn. Individual learning does not guarantee organisational learning. But without it no organisational learning can occur" (p.139). The learning organisation realises that it can only grow so long as individuals within it learn and grow, hence the continued growth and learning of each member is given a very high priority.

The strength of the discipline of personal mastery lies in its emphasis that members of an organisation, including the leader, are active learners who feel in control of their own future. By recognising that all have a fundamental need to self-actualise, the learning organisation creates opportunities for its members to contribute to their own learning, actively engage in professional development and seek higher job satisfaction.

Other writers have also acknowledged the significance of developing personal mastery in an organisation. Cultivating personal vision and aspirations is thought to be crucial: "If people don't have their own vision, all they can do is sign up for someone else's. The result is compliance, never commitment" (Fullan, 1993, p.29). Hodgkinson (2000) perceives personal mastery as a higher level of capability in people's knowledge, skills and attitude which can be achieved through practice, self-analysis, reflecting, improving and coaching.

Mental Model

Organisational members are also urged to set free their mental model which contains "deeply ingrained assumptions, generalisations, or even pictures or images that influence how they understand the world and how they take action" (Senge, 1990a, p.8). It is pointed out that people are often not aware of the impact of assumption on their behaviour, and so they need to develop the ability to reflect on their own actions. If an organisation is to develop a capacity to work with mental models, it is necessary for members to learn new skills and develop new orientations. This discipline encourages

people to develop the habit of seeing problems as emanating from thought which leads to action. It calls for a collective shift of mind for everyone and the cultivation of a new organisational model which is more conducive to effective learning.

Senge's (1990a) appeal to question one's mental model offers individuals in an organisation a powerful tool to shape a new reality. Working with mental model starts with discovering one's world view and assumptions so as to open one's thinking to the influence of others. The learning organisation encourages constant dialogue on new ways about value, assumption and belief that underlie actions and interpretations of reality, thus helping individuals to change their own mental model and propose a more effective organisational model. Innovative ideas are entertained as people start to imagine the organisation, their work and roles in totally new ways.

Senge's (1990a) argument is shared by Isaacson and Bamburg (1992) who consider mental models as subconscious and taken-for-granted beliefs which can limit people's thinking about how the world works. Appelbaum and Goransson (1997) also contend that many new insights and opportunities fail to be put into practice because they conflict with deeply seated mental models. Developing a mental model beneficial for learning is crucial to a company's survival, as pointed out by De Geus (1988). This is shown in the case of Royal Dutch/Shell which successfully managed the oil crisis in the 1970s and 1980s through a learning centred approach to planning, as well as its management teams changing their mental model regarding the company, the market situation and their competitors.

Shared Vision

Senge (1990a) relates the development of shared vision to "the capacity to hold a shared picture of the future [organisational members] seek to create". He further elaborates:

> "When there is a genuine vision (as opposed to the all-too-familiar vision statement), people excel and learn, not because they are told to, but because they want to. But many leaders have personal visions that never get translated into shared visions that galvanise an organisation ... What has been lacking is a discipline for translating vision into shared vision - not a cookbook but a set of principles and guiding practices. The practice of shared vision involves the skills of unearthing shared pictures of the future that foster genuine commitment and enrolment rather than compliance" (p.9).

A shared vision is believed to foster in individuals genuine commitment to their organisation and strengthen their drive to learn. It enables people to commit themselves to a common future whose appeal brings them to a deeper level of emotional involvement.

Other literature has confirmed the importance of shared vision to an organisation. Oakley and Krug (1993) emphasise the power of vision in unleashing the energy, creativity and commitment of individuals, and in inspiring people at all levels to do their best:

> "Vision-building enables people to clarify what they really want and to get an image, a sense and a feeling of the way it could be. The gap that is created between the way it is and the way it could be naturally invites the creativity, energy, and commitment of people to bridge that gap" (p.172).

Below et al (1987) consider vision which is shaped in the form of a mission statement as the starting point of any strategic plan: "It forms the foundation from which all other strategic plan elements emanate. A mission statement identifies the basic concept of the organisation. It provides a focal point for identifying an organisation's purpose, the reason for its existence" (p.9). A clear vision which is supported by members in an organisation is a critical building block of a learning environment, according to Goh (1998). Morgan (1986) finds that a shared vision not only empowers individuals within an organisation, it also develops the organisation's potential to impact on its environment.

Team Learning

Team learning is "the process of aligning and developing the capacities of a team to create the results its members truly desire" (Senge, 1990a, p.236). It forges in members a consensus about organisational performance and the actions they should take for improvement. It builds on personal mastery and shared vision, but requires more. People need to be able to act together. Effective team learning is about alignment, harmonisation of individual efforts and commonality of direction. This discipline places teams, not individuals, as the fundamental learning units in an organisation. It is believed that unless teams can learn, the organisation cannot learn and grow. When teams learn together, not only are there positive results for the organisation, individuals also grow more rapidly.

The key notion of team learning is *dialogue*. Senge (1990a) argues that team learning must start with dialogue, which is "the capacity of members of a team to suspend assumptions and enter into a genuine thinking together" (p.10). It involves "a free flowing of ideas through a group, allowing the group to attain insights not attainable individually" (p.10). It occurs when individuals state their positions, give their reasons and invite exploration and critique of their reasoning and presuppositions. People learn not to jump into quick solution but to examine assumptions and share multiple perspectives that open to collective learning. Team learning enables members in an organisation to practice double-loop thinking so that old habits of mind and obstacles are overcome and new insights can be developed.

Other writers have also advocated the practice of team learning. Ezzamel and Willmot (1998) suggest the adoption of teamwork and collective learning to replace inflexibility in bureaucratic organisations. Pelled et al (1999) point out that although group dynamics of teaming may be counter productive, a collective commitment to the learning process can strengthen the organisation as a whole. It is a belief of Carter et al (1984) that under a shared context of interaction and integration where people aim at synergy and harmonising individuals' energy, the team as a whole can achieve far more than the individuals could have done separately. In terms of problem solving, team learning enables the organisation to work in a collaborative fashion which allows for contribution by all members to solve problems (Blase and Blase, 1999; Kouzes and Posner, 1995). Nonaka (1991) and Goh (1998) both argue that through dialogue and discussion, team members are able to pool their information, examine issues from various angles and develop innovative ideas. Such practice shifts their orientation in tackling problems, changing it from a mechanical and superficial approach to a biological one which is more effective (Drucker, 1989). In the long term, an organisation acting as a collective team learner can enhance its viability and vitality, and become more "responsive to change, receptive to challenge, and conscious of an increasingly complex array of alternatives" (Gozdz, 1993, p.112).

Systems Thinking

Senge (1990a) builds systems thinking on systems theory. He observes that people have a tendency to focus on the parts rather than the whole, and to fail to see the organisation

as a dynamic process. Systems thinking entails the organisation being seen as a system rather than the sum of separate parts. It calls for the ability to comprehend the larger picture, and to see the complete set of relationships, actions and structures in an organisation. To renew an organisation to learn from its processes and mistakes is to understand the system dynamics, and how the individual parts relate to the whole organisational process. Senge (1990a) uses this discipline to integrate the other four, fusing them into a coherent body of theory and practice, and showing that the whole can exceed the sum of its parts. He considers systems thinking the most important discipline, and stresses that most of an organisation's problems are systems issues.

Stata (1989) and Smither (1994) also treat organisations as systems, and argue that a systems approach offers a better way of looking at problems and goals as components of a larger structure. The ability to see the whole clearly ensures the application of more effective solutions to accomplish purposes. Redding and Catalanello (1994) find that a broad understanding of the organisation as a complex, dynamic system which is able to change develops a heightened strategic readiness among the members and facilitates their continuous learning.

In summary, the five disciplines are presented as a series of principles and practices that people can study, master and integrate into their lives. They can be approached at one of the three levels: practices (what people do), principles (guiding ideas and insights) and essences (the state of being at high levels of mastery in each discipline). According to Senge (1990a) they are "concerned with a shift of mind from seeing parts to seeing wholes, from seeing people as helpless reactors to seeing them as active participants in shaping their reality, from reacting to the present to creating the future" (p.69). He believes that these five disciplines, when followed, can unleash the full potential of an organisation, enabling it to learn effectively and grow continuously.

2.2 Learning in the Learning Organisation

Learning is regarded as central to the learning organisation concept despite the variation in definition for the latter. In order to survive in a competing market, organisations must be flexible, far-sighted and able to learn. Many have argued that success in the marketplace depends greatly on continuous learning (Daft and Weick, 1984; Fiol and

Lyles, 1985; Whitaker, 1993). Argyris (1991, 1992) warns that learning is a complicated process and that most organisations do not know how to learn. Weisbord (1987) adds that the type of learning which results in a genuine learning organisation demands serious efforts and commitment. The following sections explore the nature of learning which takes place in the learning organisation.

2.2.1 Different Levels of Learning

Learning has been classified into levels under different terminologies. Table 2 summarises these classifications.

Table 2: Classifications of learning into different levels

Writer(s)	Level of Learning (Low → High)
Argyris and Schön (1978), Flood and Romm (1990)	Single-loop learning → double-loop learning → triple-loop learning
Senge (1990a)	Adaptive learning → generative learning
Fiol and Lyles (1985)	Lower-level learning → higher-level learning
Fulmer (1994)	Maintenance learning → shock learning → anticipatory Learning

The work of Argyris and Schön (1978) provides an important foundation to the study of learning. It describes learning as the ability to detect and correct errors, and distinguishes between *single-loop* and *double-loop learning*. The former produces behavioural changes that are adaptive but does not result in important value changes. Such learning enables people to cope with a particular situation or solve an immediate problem without resolving the underlying causes. It is usually evident within organisations that are characterised by hierarchical control, directive leadership and unilateral decision making which prevent individuals from engaging in reasoning processes so that learning from experience is inhibited. People become only able to detect errors and correct their routine behaviours within a rigid frame of reference. As a result, single-loop learning addresses only the symptoms but not the problems, preserves the current status and leads to incompetence.

By contrast, double-loop learning produces value changes which result in behavioural changes. This is learning that explores the underlying causes of a problem and seeks to find lasting solutions. Double-loop learning not only helps people solve their immediate problems, it also extends their capability to solve problems in the future. Double-loop

learning occurs in systems where there is collaborative leadership, open and honest sharing of information, discussion of sensitive issues and informal decision making. It encourages individuals to inquire deeply and make their reasoning processes explicit, and enables them to change their frame of reference by correcting errors in their fundamental norm, belief and assumption. Argyris and Schön (1978) argue that double-loop learning can be taught to individuals, and must replace single-loop learning in order to transform the entire organisation. For this to happen, however, the following conditions are crucial: strong motivation of both the leader and the members, substantial amount of time and concrete learning interventions.

Flood and Romm (1990) speak of an even higher level of learning, triple-loop learning, which involves learning how to learn. At this level learning is directed at the context and nature of the learning process itself. People engaged in triple-loop learning ask why they behave and think the way they do, and inquire into their hidden habits of thinking and acting in order to learn to think and act together in mutually productive ways. Triple-loop learning also requires people to be present and mindful of how their language, assumptions, tacit thoughts, reactions and mental models affect their interactions. Issacs (1993) argues that the purpose of triple-loop learning and dialogue are similar, and it is "to create a setting where conscious collective mindfulness can be maintained" (Isaacs, 1993, p.31).

Romme and Van Witteloostuijn (1999) point out that while "double-loop learning involves reframing [and] learning to see things in new ways", triple-loop learning requires "developing new processes or methodologies for arriving at such reframings" (p.439). Individuals engaged in double-loop learning fundamentally reshape their patterns of thinking with the intent of helping themselves learn to do different things. But when they are involved in triple-loop learning, they create a shift in their context or point of view in order to enable themselves to learn, grow and produce the results they truly desire. Isaacs (1993) suggests that in order to effect true organisational change, it is important for members to move beyond double-loop learning to triple-loop learning.

Senge's (1990a) five disciplines are an elaboration of the change in frame of reference suggested by Argyris and Schön (1978), and triple-loop learning proposed by Flood and Romm (1990). He observes that many organisations deal with changes by simply

adapting and modifying their strategies. While adaptation is a form of learning, it is mainly reactive. This is what he calls *adaptive learning* (similar to single-loop learning). If an organisation is to excel its learning must be more deliberative, reflective and anticipatory. Senge (1990a) stresses the importance for a higher human essence, and argues that learning should reflect what it means to be human. He introduces the Greek word *metanoia* - a shift of mind - as the basis for the type of learning required.

> "Through learning we recreate ourselves. Through learning we become able to do something we were never able to do. Through learning we re-perceive the world and our relationship to it. Through learning we extend our capacity to create, to be part of the generative process of life ... This then is the basic meaning of a learning organisation - an organisation that is continually expanding its capacity to create its future" (p.13).

He points out that real learning should not be restricted to understanding what is necessary to merely survive, but should also involve *generative learning* (similar to double-loop learning) and transformational learning (triple-loop learning) which change the underlying mental model and expand human beings' capacity to create the results they desire. This is reiterated by Kofman and Senge (1993) who contend that only when change comes from within can it lead to a genuine sense of collective power for the organisation.

Fiol and Lyles (1985) have also identified two levels of learning, referred to as *lower-level learning* and *higher-level learning*. The former is a result of repetitions and routines, and involves the development of short-lived associations of behaviour and outcome. It tends to exist in organisations where management is in control of most things and focuses only on the immediate effect of particular activities or facets of the organisation. Like single-loop or adaptive learning, lower-level learning exerts minimal influence on the organisation. Higher-level learning, on the other hand, is much more cognitive. It aims at adjusting overall rules and norms rather than specific activities and behaviours. As with double-loop or generative learning, higher-level learning is particularly relevant to strategic management. It is this kind of learning that enables an organisation to excel in the long term.

Three levels of learning are proposed by Fulmer (1994). The first is *maintenance learning*, which involves discovering better ways of doing things. Its focus is short term and involves doing things the correct way rather than asking whether they are the right

things to do. But important clues about the changing environment, emerging challenges or business opportunities are often missed. The second level is *shock learning* which is reactive and usually occurs in the event of a crisis. However, it does not address the long term consequences of present actions. *Anticipatory learning*, the highest level, addresses both the long term consequences of present actions and the best ways to deal with a future environment. It is participatory and encourages people to explore alternatives and reach a consensus. Fulmer (1994) argues that it is at this level that organisational renewal can be achieved through individuals articulating their shared vision, learning and working together to achieve their mission.

Despite the different classifications by various theorists, there exists broad consensus on the basic assumption that learning is of value, particularly at the highest level which is evident in the learning organisation. While learning happens all the time, its quality can be improved through deliberate efforts. Learning is also a continuous process with no beginning and end, and collective learning is critical to the success of the learning organisation.

2.2.2 Action and Change as Learning Outcomes

It has been argued that learning should always involve actions. Senge (1990a) distinguishes learning from information and states that "learning is ... ultimately related to action, which information is not" (p.191). Research shows that learning through action and experience produces better results. In a study by Miles and Randolph (1980), the group who have learned through experience display a stronger bond to their organisation and team mates. According to Nevis et al (1995) three actions must take place in the learning process. They are: acquiring knowledge which involves the development of skills, insights and relationships; sharing knowledge which is the dissemination of what has been learned; and utilising knowledge which entails the integration of learning so it is broadly available and can be generalised to new situations.

Learning has also been treated as a response to changes in the environment (Louis and Kruse, 1998; Marsick, 1988; Mezirow, 1991). Such response involves a change in the behaviour, norm and value of individuals in an organisation leading to positive outcomes (Cook and Yanow, 1993; Fiol and Lyles, 1985; Huber, 1991; Leithwood et al, 1998a; Pascale, 1990; Stata, 1989). A paradigm shift is required in both the personal

and the organisational dimensions. This arises from newly acquired knowledge, understanding and insight; not from coercion. It is of a second order which seeks to alter the fundamental ways in which an organisation puts new goals, structures and roles together (Cuban, 1988; Virany et al, 1992).

2.2.3 Individual vs Organisational Learning

The relationship between individual and organisational learning is complicated. Cook and Yanow (1993) treat organisations metaphorically as living entities and apply models of individual learning to them. Hedberg (1981), however, questions whether organisations actually learn and argues that organisations are merely constructs which possess properties that display through people.

Many believe that organisations ultimately learn through their members (Argyris and Schön, 1978; Beard, 1993; Huysman, 1999; Kofman and Senge, 1993). New knowledge in an organisation always begins with the individuals (Kim, 1993; Nonaka, 1991). Furthermore, organisational learning is not the cumulative result of individuals' learning, rather it is an organisational process which produces much more than the sum (Shrivastava, 1983). Each individual's personal knowledge is transformed into collective knowledge that becomes valuable to the organisation as a whole (Fiol and Lyles, 1985; Nonaka, 1991; Shrivastava, 1983). Organisational learning becomes real only when ideas and knowledge generated by individuals (or teams) are shared across space and hierarchy (Yeung et al, 1999). Mitchell (1995) describes the relationship between individual and organisational learning in simpler terms: "Organisational learning is undertaken by individuals on behalf of organisational goals and tasks. Organisational factors shape individual thinking and activity as much as individual behaviours and decisions shape the organisation" (p.14-15).

2.3 Characteristics of the Learning Organisation

The following sections examine major characteristics exhibited by the business learning organisation and the learning school. Despite the difference in setting, both are found to be consistent with Senge's (1990a) description of the learning organisation which operates by practicing the five disciplines.

2.3.1 Characteristics of the Business Learning Organisation

Since the learning organisation concept originates from the business field, more literature exists which describes the characteristics of companies that have adopted the learning organisation approach in their operation and management. Table 3 summarises these characteristics.

Table 3: Characteristics of the business learning organisation

Discipline	Characteristics of the Business Learning Organisation
Personal Mastery	◆ Recognises the importance of on-going learning to the organisation's future success; enables individuals to feel that every experience provides them a chance to learn something potentially useful (Calvert et al, 1994; Kline and Saunders, 1998). ◆ Anticipates and constantly adapts to external changes through generative learning (Neegaard, 1994). ◆ Turns data into useful knowledge and apply it in the business (Dixon, 1994; Garvin, 1993).
Mental Model	◆ Exhibits little fear and defensiveness; takes risks but avoids jeopardising basic security of the organisation (Burgoyne et al, 1994). ◆ Invests in experimental learning and new approaches; emphasises creativity and innovation (Oakley and Krug, 1993). ◆ Uses a learning approach to develop strategies; actively implements strategic changes (Beck, 1992; Burgoyne, 1988). ◆ Values how the organisation learns as well as what it learns; learns from past experiences and best practices from collaborators and competitors (Burgoyne et al, 1994; Longworth and Davies, 1996).
Shared Vision	◆ Shares a clear vision of where the organisation is heading (Goh, 1998; Kline and Saunders, 1998). ◆ A strong leader who acts as a model for others and guides the direction (Bennis and Nanus, 1997).
Team Learning	◆ Provides rewards and incentives to teams and people who pursue learning and development; rewards and learns from what goes right and wrong (Watkins and Marsick, 1993). ◆ Enables collaborative learning openly and across boundaries, and by the organisation as a whole; frequently employs cross-functional work teams (Bennett and O'Brien, 1994; Marquardt, 1996). ◆ Improves performance and transforms the organisation through collective learning and problem solving (Pedler et al, 1991; Swieringe and Wierdsma, 1994).
Systems Thinking	◆ The presence of structures which allow broad participation from all levels in daily operation and policy making (Watkins and Marsick, 1993). ◆ Establishes accounting and control processes, and skills inventories to audit learning capacity and give feedback (Garvin, 1993; Marquardt, 1999; Swieringe and Wierdsma, 1994). ◆ Encourages the sharing and transfer of information and knowledge among individuals and groups (Calvert et al, 1994; Dixon, 1994). ◆ Practices systems thinking (Redding and Catalanello, 1994).

2.3.2 Characteristics of the Learning School

Few writers have attempted to identify a comprehensive list of characteristics typical of the learning school. The resource book by Senge et al (2000) offers practical advice for teachers, administrators and parents on how to strengthen and rebuild their schools in order to respond to the rapidly changing world. The writers describe how schools can learn, grow and re-orient themselves through the adoption of the five disciplines, and identify those outcomes to be expected from a learning school in the areas of humanity, adventure, entrepreneurship, leadership, teamwork and problem solving.

The study by Johnston and Caldwell (2001) also uses the five disciplines as a basis for assessing how Australian secondary schools might enhance their productivity and achieve world class standard. In order to obtain a broad view of schools as learning organisations, the study interviews a wide range of participants including school council presidents and members, principals, senior teachers and teachers new to the school, students, parents and other stakeholders in the education community. It is concluded that Senge's (1990a) learning organisation model provides a helpful template for conceptualising schools' progress towards improvement. Four important characteristics dimensions are identified for the learning school. These include effective communication channels, inclusive collaborative structures, integrated and inclusive professional development, and learning focused leadership.

Another study by Silins et al (2002) reports a survey of 2,000 teachers and principals from 96 Australian secondary schools to explore their perceptions of schools as learning organisations. Seven dimensions are investigated, including processes related to environmental scanning, developing shared goals, establishing collaborative teaching and learning environments, encouraging initiatives and risk taking, regularly reviewing aspects related to and influencing the work of the school, recognising and reinforcing good work, and providing opportunities for continuing professional development. Confirmatory factor analyses generate a four-factor model - including a trusting and collaborative climate, taking initiatives and risks, shared and monitored mission, and professional development - which are found to best fit the Australian secondary school context.

Table 4 provides a summary of the characteristics of the learning school grouped under the five disciplines.

Table 4: Characteristics of the learning school

Discipline	Characteristics of the Learning School
Personal Mastery	◆ Individuals have a clear view of their personal goals and seek to understand the context in which they are working. ◆ Encourages critical examination of current practices and continuous learning for improvement. ◆ Adopts a wide variety of professional development strategies. ◆ Ties professional development to real school issues. ◆ Allocates sufficient resources to support regular professional development. ◆ Individuals enjoy a high level of job satisfaction.
Mental Model	◆ Individuals are open to change and new ideas. ◆ Individuals feel free to experiment and take risk. ◆ Views mistakes as part of the learning process. ◆ Encourages reflection. ◆ Values diversity of opinions.
Shared Vision	◆ Promotes a common understanding of the school vision and a shared sense of direction. ◆ Allows wide participation in establishing/reviewing the school vision or goals. ◆ Individuals show commitment to the school vision rather than compliance. ◆ Reviews school goals and priorities regularly. ◆ Aligns the curriculum with the school vision.
Team Learning	◆ School structures encourage collaboration among staff. ◆ Organises regular informal meetings and sharing sessions among subgroups. ◆ Provides training opportunities for groups of staff on how to work and learn in teams. ◆ Encourages constant sharing of ideas and materials among staff and teams. ◆ Recognises and values skills and contributions of team members. ◆ Facilitates on-going professional dialogue and inquiry among teachers. ◆ People trust and respect one another. ◆ Cultivates a climate of collaboration and mutual support.
Systems Thinking	◆ Shares decision making authority. ◆ Establishes open and reciprocal channels of communication within the school. ◆ Individuals are mutually responsible and act with the full knowledge and understanding of others in the school. ◆ Connects to the wider educational context; individuals are aware of external issues that may impact on the school. ◆ Provides access to best current knowledge.

A comparison of the characteristics for the business learning organisation and the learning school shows a high level of agreement between the two. Both value collective learning and encourage members to share ideas and information in their inquiry and action. Learning takes place continuously at all levels involving individuals, teams as well as the surrounding community which impacts on the organisation. There is a stronger tendency for learning schools to emphasise on collaboration. This is probably due to the structural weaknesses of traditional schools which result in work isolation of teachers in particular. On the other hand, business learning organisations appear to be more outward looking and concerned with building strong connections with external parties. Their profit making objective may have made them more aware of the need to stay alert to the changing external environment and to constantly transform themselves for better adaptation and long term survival.

2.4 Practice of the Learning Organisation Concept in Schools

Literature shows that the learning organisation concept is relevant to many aspects of school management. Senge et al (2000) contend that the learning organisation provides a useful framework that encourages and develops the capability of schools to function and deal with the challenges of educational change. They argue that the five disciplines resonate with educators' desire to create a learning school

> "because of the underlying premise of organisational learning - that people can marry their aspirations with better performance over the long run. The results from learning organisation efforts include noticeable improvements, but more importantly, they include breakthroughs of the mind and heart" (p.5).

Such argument has received support from other writers. For example, Geijsel et al (2001) state that in seeking to innovate and restructure schools, the learning organisation framework encourages members to become the process of change. For Bierema (1999), the learning organisation concept provides a regenerative influence over the cultivation and renewal of change for improving schools. Isaacson and Bamburgh (1992) add that it is critical to consider the five disciplines together in any serious search for improved educational quality.

The following sections discuss related literature on the practice of each of the five disciplines in the school setting.

2.4.1 Developing Personal Mastery in Schools

Hargreaves (2003) points out that the challenges of teaching in a new knowledge society have required teachers to employ completely new ways of organising learning, and to constantly develop and adapt new models of knowledge creation. This is because we are in a

> "lopsided world of growing intolerance, individualism, and insecurity. Being a teacher who is a counterpoint for the knowledge society therefore means being concerned with character as well as performance; social and emotional as well as cognitive learning; personal and professional development as well as professional learning; group life as well as teamwork; caring as well as cognition; and preserving continuity and security alongside promoting risk and change. It means developing social capital, laying the emotional foundations of democracy and creating kernels of cosmopolitan identity" (p.65).

It is believed that a knowledge-creating school is one based on teachers' professional learning, especially in terms of teacher-initiated action research and sharing of effective teaching practice.

On the other hand, Seymour and West-Burnham (1990) have observed that traditional schools as bureaucratic institutions actually inhibit professional learning. So fostering personal mastery and professional development is particularly relevant for schools which aspire to become learning organisations. Frase and Conley (1994) point out that the promotion of teachers' professional growth and development in particular is crucial for organisational learning in schools. Learning opportunities for teachers are believed to positively relate to improved student outcomes and school effectiveness (Smylie et al, 1996). Zederayko and Ward (1999) explain that

> "improvements in student learning depend on what teachers know and what they do in their classrooms. To improve student learning, schools must develop ways to pursue the ideal of the learning organisation and give teachers the opportunity to learn and develop in a regular, on-going manner" (p.35).

Fullan (1995) argues that effective professional development for teachers must be long term inquiry processes with a collective focus on school goals and student learning. Therefore the domain of knowledge and experiences covered should include collaboration, change processes, school culture as well as teaching and learning. May (1994) finds that professional development in educational institutes is often overly centred on institutional needs and does not adequately attend to the needs of individual staff. Program developers are hence urged to design more people-oriented programs and encourage staff to pursue those things that are most important to them so that long-lasting learning outcomes can be achieved.

Human resources management also plays a significant part in promoting professional growth and development in schools. With the Singapore government granting more autonomy to schools to make their own manpower policies, Tan (2000) argues for the need of more systemic, high commitment, mutually reinforcing human resource policies in schools. Recommended practices include appointing a human resource manager; reforming the hiring and selection practices to include selection panels involving incumbent teachers, novel selection criteria and job previews; and replacing the compensation structure with one that is transparent, skill-based, team oriented and which pays premium wages and offers non-monetary benefits like work/family programs. It is believed that such an environment which heightens the strategic values of human capital and reinforces the continuous learning climate greatly facilitates the transformation of schools into learning organisations. Similarly referring to human resources management in educational institutes, Tann (1995) points out that the kind of staff appraisal which fosters a learning organisation culture is not conducted along the lines of "what courses did you attend last year" but is rather focused on "what did you learn last year and what is your learning plan for the present and future" (p.44).

2.4.2 Developing Mental Model in Schools

The traditional mental model about the nature of knowledge and the role of teachers and students has profoundly affected what happens in schools. Teaching is seen to be a didactic and mechanical process, with teachers giving information and students presenting the same information for examinations. Another common mental model concerns the appropriate roles for different school personnel. For example, principals should lead and teachers should only teach and implement policies. Such mental model

creates power differences which need to be changed in order to support the new ideology of learning schools. There should no longer be "a hierarchy of who knows more than someone else, but rather the need for everyone to [learn and to] contribute" (Kleine-Krache, 1993, p.394).

People's mental model strongly influences their learning. If teachers do not want to change, they have little motivation to learn. For example, in Mitchell's (1995) action research on organisational learning in a Canadian elementary school, the teachers' personal attitudes greatly affect their participation in learning. Some have withdrawn from the study because of not willing to try. The ones most willing to learn are those who realise that their current practices are not working and a change is necessary. These teachers may not be incompetent, but they are more flexible and open minded, and willing to experiment with new ideas and learning in a new way. Positive mental models are more conducive to learning, as demonstrated by the teachers in Ronsenholtz's (1989) study who acknowledge that teaching is difficult, and giving and receiving help is part of the quest for continuous improvement rather than indicating incompetence.

Reflection and dialogue are necessary learning skills that enable individuals to make explicit their mental model which contains taken-for-granted beliefs and values, and to openly share views and develop knowledge about others' assumptions. Fullan (1993) points out that critical reflection upon their professional practice empowers teachers to tackle the complexity of change and react proactively to both the external and internal environments. Reflection and dialogue offer teachers the opportunity to share their assumptions about learning, instructional strategies and the curriculum; and help them question their own mental model in order to evolve more satisfying and useful ways of viewing the school, its purpose and direction. Reflective dialogue, however, can only take place within a culture of trust and support where individuals are encouraged to "learn to say the unsayable" and to accept differences in value and view, according to Calvert et al (1994).

It is found that when there are norms of mutual support and belief that colleagues respect and provide honest feedback to their ideas, teachers feel physically and psychologically safe (Leithwood et al, 1998b; Rosenholtz, 1989). Their mental models

are expanded within a positive school culture of innovation and creativity. When individual knowledge is honoured and open discussion of difficulties does not result in threats or punishments, teachers are more willing to experiment with new innovations and work together (Bryk et al, 1999; Louis and Kruse, 1998).

2.4.3 Developing Shared Vision in Schools

Caldwell and Spinks (1992) refer to the school vision as "a mental picture ... an image of the way [members] would like the school to be in the future" (p.37). Establishing shared vision is crucial for transforming schools into learning organisations, as suggested by Wallace et al (1997). This is validated by Duden (1993) who describes how an elementary school has successfully applied learning organisation principles and a vision statement to improve itself. As a result of the school's transformation, teacher approval ratings increase, test scores remain high and parents become more involved. According to Leithwood et al (1998a), learning schools have clear visions that are accessible to all the staff. They are shared and perceived as meaningful, and are pervasive in professional conversations and decision making.

In terms of employing the best strategies for developing shared vision, Senge (1990a) finds that "as people talk, the vision grows clearer. As it gets clearer, enthusiasm for its benefits grow" (p.227). Therefore both individuals and groups need to spend time in dialogue and reflection in order to develop a truly shared vision for the organisation. Mitchell (1995) points out that professional conversations among teaching staff foster the development of common understanding and clarification of the school vision. Goal clarity gives teachers a sense of direction, and helps them focus their learning on generating innovative ideas.

School vision should also be aligned with changes in the external environment. Leithwood et al (1998a) advise that goals and priorities should be reviewed periodically to help the school adjust to external changing forces. When proposing a new model of planning for schools, Davies and Ellison (2001) link the development of school vision and goals to important aspects of organisational learning. It is argued that such linkage, and the on-going involvement of a range of stakeholders, can ensure that schools learn strategically so that plans are effective and there is no gap between strategy and implementation. The writers also suggest that planning and goal setting should involve

individuals adopting a perspective of *futures thinking* which requires the looking ahead of educational trends over the next five to ten years.

Since teaching and learning are a major focus of schools, Glickman (1993) points out that school vision and goals should centre on effective teaching and high performance of the students. In setting their core goals schools are advised to formulate a *covenant* that embodies the school's and the community's widely held beliefs about teaching and learning. When staff and students share a common vision and a commitment to goals for learning, the potential is high for attracting others outside the school, not just as volunteers or participants in special functions, but as committed members of a learning community. Such strategy encourages these non-professionals not to feel or act as outsiders, but as an integral part of the community contributing to conditions that foster the continuous improvement of the school.

2.4.4 Developing Team Learning in Schools

Team learning is a rare phenomenon in most schools. Cases that teachers are working alone together are common. Interaction is limited and there are few exchanges among teachers to enhance their professional growth. Smith and Scott (1990) have lamented: "One would expect that a profession dedicated to learning would be structured in such a way that its members would learn from one another. In this light, the isolation of teachers from other adults is a glaring anomaly" (p.9).

Team learning involves teachers no longer working in isolation but constantly interacting with one another and integrating learning and work activities as closely as possible (Iles, 1994). It can benefit the school enormously. Smylie (1995) shows that teachers' efficacy is greatly enhanced in a team learning environment, especially when their actions are governed by shared norms focused on the improvement of teaching and learning. These stimulate teachers to learn new ways of teaching and devise innovative learning activities together, and provide a means for communicating the prevailing norms within a professional community to new members. Underlying such practices are shared norms focused on student learning and the collective responsibility for school operation and improvement. These behavioural guidelines are not imposed but developed internally.

The power of team learning is illustrated in the study by Smith and Stodden (1994) concerning the implementation of a successful project which involves schools in improving the outcomes for vocational special needs students. Teams consisting of regular, special and vocational teachers, support staff, parents and other stakeholders are invited to attend a summer institute to learn how to build a team-driven learning organisation in their school. The focus is on collaborative procedures "powerful enough to transform a loosely bound group of interdisciplinary stakeholders into a dynamic team of learning organisers" (p.19). As a result, participants are greatly empowered to create and improve upon the system in their school. Similarly addressing the benefits of teams, Odden and Kelley (1997) demonstrate how the design of team focused rewards provide concrete motivation and encouragement for schools toward professional learning.

According to Senge (1990a), one of the consequences of team learning is the establishment of professional learning communities. A strong professional community enhances school-wide knowledge processing and improves the school's capacity for organisational learning. Characteristics which are distinctive of professional learning communities in schools have been identified by Louis et al (1996c). These include: collectively agreed upon professional beliefs that support and sustain successful professional practice, a focus on student learning which establishes students' intellectual growth as a prime professional goal, reflective dialogue in which teachers reflect on and evaluate their professional practice, deprivatisation of practice which leads to improvement through interaction with and feedback from colleagues, and collaboration among staff.

Evidence shows that the presence of professional learning communities greatly facilitates teachers' growth. Andrews and Lewis (2000) demonstrate how shared understanding teachers develop in a professional community positively impacts their action in the classroom. Teachers in their study are encouraged to examine teaching and learning problems from fresh perspectives. The opening up of their practice to scrutiny enables them to ask questions about their own practice and to view it in a more analytic fashion. Similar result is obtained by Leithwood et al (1998a). The teachers in their study remark that learning activities within a teaching team such as peer observations have stimulated their discussion with others whom they do not know well and

encouraged them to learn collectively. In order for strong learning communities to establish in schools, Richardson (1996) asserts that high performance expectations should be held for individuals, and teachers should give up their deeply ingrained belief that the school principal is responsible for providing all the right answers.

Collaboration plays an important role in facilitating team learning. Marks and Louis (1999) stress that school-wide collaborative activities are critical in enhancing the capacity for organisational learning. Teachers' collaboration on school-wide projects and engagement in school improvement efforts foster the sharing of expertise as they call on each other to address the core problems of practice. Such experience also increases teachers' sense of affiliation with each other and with the school, and heightens their sense of mutual support and responsibility for effective instruction. Fullan (1993) argues that in order for effective educational reforms to take place, schools need to form learning communities which involve members constantly collaborating with one another. Only through this can teachers free themselves from isolation and from a state of *balkanisation*. Addressing the aspect of collaborative problem solving, the study by Tschannen-Moran et al (2000) explores how schools can become smarter. The study takes place within an American high school which strives to improve itself and employs collaborative strategies to learn and adapt to changed circumstances. Collaboration in the school is successfully implemented through the creation of *discourse communities* among teachers, and cognitive apprenticeship between teachers and administrators. Staff members are encouraged to make their thinking visible and make explicit their values and goals that guide their decisions. As they continue to participate in group problem solving processes and reflect on these processes, they arrive at better solutions and the school's problem solving capacity is greatly enhanced.

2.4.5 Developing Systems Thinking in Schools

Senge's (1990a) emphasis on the interconnectedness of various parts in an organisation is shared by both Little (1990) and Rozenholz (1989) who consider interdependence as one of the important success factors of a learning school. The practice of systems thinking is shown to result in positive outcomes on school management. It is argued that reforms will likely to change only a few isolated parts of the school unless the latter starts to function as an integrated system (Robertson et al, 1995).

Systems thinking involves members developing a sense of involvement and participation in enhancing the effectiveness of the organisation. Bartlett and Ghoshal (1998) assert that in order to maximise learning outcomes and performance, it is important that people at all levels are provided with opportunities for broad participation, particularly in decision making. Devolution and redistribution of decision making authority are believed to result in greater ownership, morale and commitment among stakeholders (Leonard, 1998). According to Honold (1991), true learning can only take place when managers change their belief that only they can make decisions, and subordinates change their belief that they do not need to think on the job. Goh (1998) finds that learning occurs best in organisational designs that are organic, flat and decentralised. Learning organisations tend to have a minimal hierarchical structure that places work teams close to the ultimate decision makers.

Unfortunately the bureaucratic structure and narrowness of decision making processes often keep schools from transforming into genuine learning organisations. Lee and Smith (1997) have cited non-participatory decision making process as one of the structural impediments to organisational learning in schools. It is argued that since administrators, teachers, students, support staff and parents all have a stake in how the school operates, they should all be allowed participation in deciding the future for the school. Gunter (2001) argues that the current leadership paradigm is encapsulated by the term transformational leadership, which necessarily involves the dispersal of leadership responsibilities throughout the organisation. Provenzo (1989) points out that teachers as frontline staff can more readily identify school problems, therefore sharing decision making with them helps the school solve problems more effectively. Leithwood et al (1998a) likewise believe that delegating decision making to teachers improves collective problem solving capabilities and results in solutions which are more sensitive to important aspects of the school's context.

The presence of decentralised decision making processes empowers staff and enhances learning capability for the school, according to Wohlstetter et al (1994) and Robertson et al (1995). When teachers are genuinely involved in school management, they feel more empowered professionally and more connected personally. It is suggested that distributed power and shared leadership enable teachers to positively influence students

and their learning (Darling-Hammond, 1998). Findings by Newmann et al (1997) conclude that internal accountability and teachers' participation in school decision making are positively related. Accountability to peers and management improves teachers' learning capacity. The study conducted by Marks and Louis (1999) on 24 site-managed elementary, middle and high schools engaged in significant restructuring activities shows that the more successful schools have all established decision making structures which facilitate teachers' influence in school matters, as well as elaborate committee systems such as the *cabinet* (the official decision making body) and all-school meetings. The study further reveals a strong and consistent relationship between learning and teacher empowerment, measured both as a school organisational characteristic and as the experience of individual teachers. The relationship is particularly strong for empowerment in the domains of work life for teachers and school experience for students.

Systems thinking also enables the school to look beyond its local organisational context and constantly monitor its relationship with the broader community. This is what Argyris and Schön (1996) refer to as a *strategic conversation* between an organisation and its environment. Realising that learning opportunities beyond the school boundary facilitates organisational learning, Fullan (1993) suggests that school principals and teachers should constantly strive to connect with the wider environment. Recommended strategies include visiting other schools, spending time in the community, and disseminating ideas about their own practice through speeches and workshops. Teachers in the study by Louis and Kruse (1998) are eager to attend conferences, and reflect and share ideas with their colleagues when they come back. Such sharing occurs in the form of lesson demonstration, seminars and other ways of increasing teacher-to-teacher communication. Some teachers even reach out to teach parents how to teach their children. As a result of these out-reaching opportunities, the teachers develop a greatly expanded repertoire of skills.

2.5 The Role of Leadership

Senge (1990a, 1999a, 1999a, 1999b) stresses that leaders play a central role in the pursuit of the learning organisation ideal and describes what leaders of learning organisations ought to be like: "Leaders ... are responsible for building organisations

where people continually expand their capabilities to understand complexity, clarify vision and improve shared mental models - that is, they are responsible for learning" (1990a, p.340).

The following sections discuss the role of leadership for the learning organisation and the learning school, and examine how the leader can facilitate the practice of each of the five disciplines.

2.5.1 The Various Roles of the Leader

Senge (1990a, 1990b) refers to leaders as *designers*, *stewards* and *teachers* who ensure that the goals, vision and focus of an organisation are facilitated and realised. Designers are responsible for

> "creating and designing the parameters, structures and context for organisational learning. The task of leaders is to design the learning processes where people throughout the organisation can deal productively with the critical issues they face and develop their mastery" (1990a, p.345).

Leaders should be aware of the underlying principles of successful organisations and ensure that these principles are built into the relationships between the roles, structures and procedures of the organisation. This is accomplished through creating governing ideas that add purpose, vision and core values to people's work; as well as translating and guiding ideas into actions.

Leaders are also expected to serve as stewards of vision and shepherd the organisation toward its idealised future. This is done by placing members foremost in achieving the greater good for all. Block (1996) has similarly emphasised stewardship in the leader's role:

> "Stewardship is a way to use power to serve through the practice of partnership and empowerment. This is the alternative to the conventional notions of strong leadership for implementing changes. The intent is to redesign our organisations so that service is the centrepiece and ownership and responsibility are strongly felt among those close to doing the work and contacting customers" (p.63).

Senge (1990a) further urges leaders to teach members to define a reality for the organisation, and help them see the overall picture of the organisation within the context

of their actions and decisions. Leaders are responsible for modelling, instilling and teaching the five disciplines of the learning organisation. They should be teachers who are skilled at informing members of the current reality and comparing the mental models of perspectives, paradigms and beliefs.

Leaders are also responsible for sustaining change in the organisation. Senge (1999a) emphasises that the key to sustaining change and reform momentum is to give up what he calls the *myth of the hero leader* which is the perception that

> "leaders are the few special people blessed with the capability for command and influence. They have become leaders precisely because of their unique mix of skill, ambition, vision, charisma, and no small amount of hubris. They can overcome the blocks that stymie everyone else. They make great things happen. The implication is clear: If you too want to make a difference, you had better be one of these special people. In the world of today's organisations, this idealisation of great leadership leads to an endless search for heroic figures who can come in to rescue the rest of us" (p.11).

It is believed that clinging to the hero leader notion actually prevents organisations from creating and sustaining true change.

In arguing for the development of leaders across the organisation, not just at the top, Senge (1999a, 1999b) highlights the interaction among three types of leaders: *local leaders*, *internal networkers* and *executive leaders*. Each of these has different points of influence and power bases. Together, they begin and sustain improvement, making them vital to the success and impact of any change initiative.

Local leaders as those accountable for achieving results at the local level (whether the local level is a team, a unit, a work group or some other subset of a larger system). They have the authority to change the way work is carried out at the local level, and most importantly, the passion for creating better results. Internal networkers are organisational *seed carriers* who help to spread new ideas through the informal network. Network leaders have little formal power; but in a way it is this lack of formal power that makes them most effective. Their strength lies in

> "their ability to move about the larger organisation, to participate in and nurture broad networks of alliances with other like-minded individuals, and to help local leaders, both by assisting directly and by putting them in contact with others who share their passions and from whom they can

learn" (Senge, 1999a, p.17).

They are thus a vital part of pulling the network together and developing alliances. Executive leaders, "are one step removed from the organisation's direct value-producing activities ... [but] are accountable for overall organisational performance" (Senge, 1999a, p.18). They are in charge of overseeing reform initiatives. But rather than commanding changes from the top down, executive leaders rely upon local leaders and internal networkers to accomplish their goals. Such reliance is reciprocal. That is, local leaders, internal networkers and executive leaders are dependent to some extent on one another to accomplish goals. For example, local leaders have to depend on internal networkers for mentoring and on executive leaders to create an organisational environment that welcomes collaborative work and innovation (Senge, 1999b).

In analysing Senge's (1990a, 1990b, 1999a, 1999b) description of the leader for the learning organisation, Jackson (2000) is convinced that such leadership focus when translated into practice ensures that members are inspired by their leaders to see themselves actively engaged in learning. Evans (1996) believes that the learning organisation concept itself evolves around the notion that organisations led by exceptional leaders provide a framework where significant contributions of members can thrive, where purpose and meaning can be derived from work, and where obstacles can be overcome and used in future decision making. The importance of the leader in developing the learning capability of an organisation to evaluate, assess and redesign the future is similarly stressed by Ravichandran and Rai (2000).

2.5.2 Leadership in the Learning School

Effective leadership is crucial to school improvement. Cheng (1991, 1993) considers the internal practices adopted by school principals which influence the climate, culture and staff commitment as important criteria contributing to school improvement. Leadership and school interactions are used, among other indicators, to measure school effectiveness (Cheng, 1996). Aspin et al (1994) remark: "The functions and tasks that have been identified as having to do with, and promoting quality in education are, in a major way, the responsibility of those who are charged with the exercise of leadership and management of school and school systems" (p.20). Gore (1993) argues that leadership is crucial if significant and permanent change is to be institutionalised in

schools. Johnston and Wartel (1998) and Karpicke and Murphy (1996) similarly highlight the leadership role in transforming the norms, values, beliefs and assumptions of school personnel, and subsequently influencing the way they make decisions and put their decisions into practice.

Literature has acknowledged the importance of leadership in enhancing schools' capability to transform into learning organisations. For example, an Australian government-funded research project involving 96 secondary schools, over 5,000 students and 3,700 teachers and principals reveals a strong relationship between leadership and organisational learning (Silins and Mulford, 2002). Principals of learning schools are charged with the responsibility of adopting a new leadership orientation, facilitating the practice of the five disciplines in all aspects of the school life, and involving everyone in the school to contribute to the learning processes in order to achieve successful reforms (Senge et al, 2000).

The study by Johnston (1998) finds that effective school leadership needs to be learning focused. Principals are recommended to provide a positive role model of the professional learning process; disseminate knowledge and encourage staff to share their specialised talents and transfer their knowledge and skills to others; explain trends and macro developments; and relate the school to the context in which it operates. Glickman et al (1995) also suggest that effective school principals tend to create cultures of inquiry, lifelong learning and reflection in their schools. They are able to promote an environment where active learning can take place, and where everyone has a role to play in helping others to learn.

2.5.3 The Leader's Role in Facilitating the Practice of Personal Mastery

In facilitating the practice of personal mastery, leaders are responsible for providing conditions in which members can develop their capacity to create what they truly care about. This implies a willingness to invest time, energy and money to help members become high quality contributors. Leaders are asked to foster a climate in which personal mastery is practiced in everyone's daily life. This requires "building an organisation where it is safe for members to create vision, where inquiry and

commitment to the truth are the norm, and where challenging the status quo is expected" (Senge, 1990a, p.173).

Leaders who can successfully navigate deep personal changes in others are found to be more able to create organisational conditions where members can engage in productive learning (Brown and Posner, 2001). Sergiovanni (1996) suggests that effective leadership should involve persuasion, example and appealing to the inner forces of each person in order to encourage participation. It is a reciprocal process which establishes consensual understanding between the leader and followers. In their distinction between management and leadership, Kouzes and Posner (1995) remark: "... managers get people to do, but leaders get other people to want to do" (p.27). Evans (1996) also states: "In well-led organisations people feel that they are a part of a team or a family, that mastery and competence matter, and that their work is exciting and challenging" (p.146).

In the case of schools, principals have a role in establishing the parameters within which learning can take place, and making learning an essential, regular part of the workplace. Teachers participating in Mitchell's (1995) study have cited leadership as the most significant influence in their learning. Creating opportunities for teachers to learn presents an enormous challenge to school principals who must reconceptualise the ways teachers learn and embrace new thinking about professional development. Senge et al (2000) urge school principals to facilitate personal mastery through leading and mobilising individuals to tackle complex issues, enhancing teachers' self awareness so that they can craft their own career and enjoy their work, and modelling a learner-centred approach to problem solving. West-Burnham and O'Sullivan (1998) emphasise that principals are responsible for leading continuing professional development which aims at embedding lasting changes within classrooms.

School principals are also responsible for re-culturing schools as a place which facilitates learning that is on-going and strategically used, and grows out of work itself (Fullan and Hargreaves, 1992). They have a role to professionalise teachers' work and create a constant need for inquiry and learning. This implies that teachers are treated as professionals and empowered to engage in reflective practice and problem solving (Rait, 1995). Yuen and Cheng (2000) argue that since the continuous learning of teachers is the key for successful school reforms, the principal should create an environment in

which teachers can learn continuously as individuals and as teams. Recommended strategies include individualised job designs for teachers, the school principal modelling the practice of espoused theories, fostering a learning culture and enhancing theoretical knowledge and skills. Newmann (1996) suggests that effective organisational learning in schools depends strongly on the principal stimulating intellectual interactions around issues of reform and improvement among teachers. According to Barth (1991), the school principal, teachers, students and parents can together create within their school an ecology of reflection, growth and refinement of practice - a community of learners. The school principal occupies a central place in such a community not as the head teacher but rather as the head learner; engaging in, displaying and modelling the learning behaviours that are expected to be adopted by teachers and students.

2.5.4 The Leader's Role in Facilitating the Practice of Mental Model

Senge (1990a) contends that change rarely takes place until those in management stop imposing their mental model on others. "There may be a temptation for the loudest guy, or the highest-ranking guy, to assume that everyone else will swallow his mental models lock, stock and barrel in sixty seconds" (p.190). So in grasping the discipline of mental model, leaders are advised to combine inquiry and advocacy in a balanced fashion. This involves encouraging members to be open to inquiry into their assumption so as to make possible the discovery of completely new ways of thinking. Williams (2001) finds that leaders are more able to manage learning if they understand the mental models of their followers. White et al (2001) refer to this as understanding the social context of the group. It is argued that the ability to assess the differences in mental models enables leaders to deal with creative tension and potential controversies.

For learning to flourish, leaders through their modelling and support must establish a zone of comfort and trust that encourages searching, creating, experimenting and risk taking (Kline and Saunders, 1998). In order to develop a school-wide mental model which is conducive to learning, principals must ensure that learning and the acceptance of uncertainty are part of the school culture. In such a culture, all school personnel "are seen as learners and act as learners. Leaders expect themselves and others to be uncertain, inquiring, expectant of surprise, and perhaps a bit joyful about confronting the unknown" (Senge et al, 2000, p.417). Principals must be prepared to give freedom to school members to say "I don't know where we're going ... I'm still willing to dig into

this mess to discover a way for us to go" (Senge et al, 2000, p.417). Barth (1991) also advises principals to develop a favourable mental model and improve the quality of learning in their schools by encouraging different ways of thinking about common problems. This includes transforming problems into opportunities for improvement, encouraging clarification of assumptions that guide practice, and offering opportunities for shared problem solving and reflection.

2.5.5 The Leader's Role in Facilitating the Practice of Shared Vision

Senge (1990a) realises that "nothing happens until there is vision. But it is equally true that a vision with no underlying sense of purpose, no calling, is just a good idea - all sound and fury, signifying nothing" (p.149). So he asks leaders to provide members with vivid examples of what the future can be and guidance as to how to get there. That is, they should offer both a destination and a route. He also urges leaders to become designers and promoters of a collective vision instead of dictators. Similar advice is given by Appelbaum and Goransson (1997) who warn that leaders must ask for support and be patient as shared vision takes time to emerge. New insight and belief on what is possible can only surface as individuals interact with their own vision and learn how to understand the vision of others.

Leaders are responsible for communicating the vision and enhancing strong values that reinforce an organisation's purpose (Wheatley, 1992). It is found that successful CEOs are able to establish internal processes which inspire the commitment of members to the shared vision of their organisation (Farkas and Wetlaufer, 1996). In moving an organisation to process the shared vision, leaders must appeal to a common purpose and communicate expressively, thereby bringing the vision to life in such a way that people can see themselves in it, sincerely believe in what they are saying and demonstrate their personal conviction (Kouzes and Posner, 1995).

Developing shared vision in schools requires the principal to establish an environment where members can work together to design the future for the school (Senge et al, 2000). Licata and Harper (2001) conclude from their study that teachers are supportive of the school vision only when it is the outcome of an "authentic exchange of views among principals, teachers and others" (p.7). Drake and Roe (1994) see the importance of the principal's ability in articulating a vision and getting others to *buy in* to such vision. It is

believed that principals need to influence school members' perceptions of the reality and move them toward a shared view of a realistic and desirable future. According to Birnbaum (1992), effective principals do this not through rational argument or political power, but by changing members' perceptions and focusing their attention on certain elements already existing in the school.

In an empirical research on change processes, Louis and Miles (1990) find that "effective school improvement involves a succession of change themes" (p.207). They thus urge school principals to place a high priority in the day-to-day management of change, and to facilitate the emergence of a shared school vision so that "themes become linked and owned by people at all levels" (p.207). Abolghasemi et al (1999) suggest that school principals should initiate a vision that is school-wide and comprehensive, and help others translate such vision into actions.

2.5.6 The Leader's Role in Facilitating the Practice of Team Learning

Senge (1990a) sees a critical role for leaders to align and develop the capacity of teams to inquire into complex issues and create desirable results. Leaders should set the tone and establish the standard for collective learning in the organisation. They are responsible for dealing with forces which oppose productive dialogue in teams, and coordinating the latter's actions so that team members act in ways that complement one another. Huxham and Vargen (2000) ask leaders to create a *collaborative inertia* in the organisation that can bring about fruitful cooperation and team learning.

In the case of schools, the responsibility of encouraging team learning falls into the school principal who is expected to foster collaboration and establish strong learning communities. Through the dialogue process, the principal leads others to think together in analysing problems and creating new pieces of shared knowledge. Such thinking together should centre around a collective sensibility, in which thoughts, emotions, and resulting actions belong not to the principal or the teachers alone, but to all of them together (Senge et al, 2000).

It is suggested that through shaping organisational roles and the network of relationships among these roles, principals can establish an internal network which promotes team learning in schools (Hallinger and Heck, 1998). Such network, as

Leithwood and Jantzi (2000) believe, facilitates teachers' work, professional learning and opportunities for collaboration. Blase and Blase (1999) point out that effective school principals are able to nurture a collaborative network among teachers that results in improvement of teaching and positive reform outcomes. West-Burnham and O'Sullivan (1998), when discussing the demands of professional development against the challenges of creating and sustaining learning communities in schools, point out that a major barrier is the lack of teacher collaboration and support from a peer group in realising impact in the classroom. The possibility for a collaborative culture is described and typified by collegiality, an aspect considered to be conducive to both teacher development and the facilitation of pupil achievement.

The case study by Scribner et al (1999) which explores the potential of a school improvement process adopted in three rural middle schools indicates that leadership is significant for establishing learning communities. School principals who promote the rethinking of leadership favour the development of learning communities (Louis et al, 1996b). Teachers in the study by Louis and Kruse (1998) share that their principal successfully facilitates the work of the teams by providing them with opportunities for open discussion in a safe environment to take risks, showing trust to the teachers, promoting professional reading and guiding teachers in critical discussions. On the other hand, Kruse and Louis (1997) find that while teaming teachers is a significant opportunity for the development of a learning community ethic in schools, the demand on leadership is extremely taxing, especially when it is necessary to work out differences and conflicts.

2.5.7 The Leader's Role in Facilitating the Practice of Systems Thinking

Senge (1990a) advise leaders to practice a systems view by recognising the larger picture and using this information in decision making. This way they can avoid problems which arise from their inability to think systemically and actions to deal with issues at surface levels.

Kouzes and Posner (1995) consider the promotion of systems thinking as leaders' job to create new opportunities for their organisation, employees and constituents. In order to

enliven and motivate their organisations, leaders must create opportunities for individuals to outdo themselves, solve problems, make discoveries, explore new ground and reach difficult goals. They must also figure out how to deal with external threats and make work enjoyable for all. For Heifetz and Laurie (1997), adoption of systems thinking requires leaders to communicate the *big picture* framework, design and identify the adaptive challenges that occur, regulate the distress, maintain disciplined attention to important issues, and protect the leadership voices of others in the organisation. Evans (1996) finds that individuals who are led by systems thinkers tend to produce significant and meaningful contributions that promote the overall connectedness of the organisation.

In the school context, Senge et al (2000) point out that when principals who care about school reforms act as systems thinkers, they would focus not only on particular practices but also on building collaborative relationships and structures for change. They would establish mechanisms and processes that allow people to talk across grade levels and departments about how they want to reform the school and what supports they need. They would also involve the government in the conversation, instead of just implementing its mandates. And they would eagerly find a role for local business and community members to create a network of support for the school. Similarly writing on the theme of establishing the school as a learning organisation, Sergiovanni (2003) emphasises the principal's role in establishing a culture in which parents, teachers and students can interact and learn together. Preedy et al (2003) likewise highlight the vital role that a learning culture plays in improving schools. They believe that if schools aspire to become learning communities, their principals need to build interactive structures which promote inter-relationships, inter-connections and collegial cultures, while honouring creative change agents and *counter-culture mavericks* in order to develop innovative solutions to complex, multi-faceted challenges.

It is suggested that the successful implementation of school-based management depends greatly on the presence of a systems-oriented principal who can integrate instructional guidance into the school vision (Robertson et al, 1995). School principals are advised to work more closely with parents and local community members in order to achieve effective school restructuring (Dimmock, 1999). In their description of the kind of leadership necessary for adoption by the 21st century school principal, Usdan et al

(2001) argue that leadership should include leading communicative dialogues with the public in understanding the organisational needs of the school district, how the community should be involved in the restructuring process, and the policy environment that supports and mandates school reforms.

2.6 The Influence of Leadership Style on Schools' Capability to Become Learning Organisations

The seminal work on leadership styles by Burns (1978) conceptualises the differences between ordinary (transactional) and extraordinary (transformational) leaders. Bass (1985, 1998) builds on the idea of Burns (1978) and presents a full range leadership continuum which moves from transformational leadership to transactional leadership to laissez-faire leadership. Each of these leadership styles has associated with it different dimensions which can be measured using the Multifactor Leadership Questionnaire Form (MLQ) designed by Bass and Avolio (1995).

The following sections discuss each of the three main leadership styles, compare between transformational and transactional leadership, and examine the effect of leadership style on schools' capability to develop into learning organisations.

2.6.1 Transactional Leadership

Transactional leadership involves leaders influencing organisational members by means of a transaction - an exchange based on initiating and clarifying what is required of members and what the latter will receive if they fulfil the requirements. Avolio and Bass (1998) consider transactional leadership as "contingent reinforcement. Subordinates are the actors who accept the leader's promises of reward or avoidance of punishment for enacting agreed-upon roles" (p.30). This leadership approach involves accomplishing well the tasks at hand while satisfying the self interests of those working under the leader. The leader sees to it that promises of rewards are fulfilled for those who carry out successfully what is required of them. By clarifying the requirements, transactional leaders are able to build confidence in members to exert the necessary effort in order to achieve expected levels of performance. It is argued that such motivation to work provides a sense of direction and energises members to reach the agreed-upon objectives. In short, transactional leaders pursue a cost-benefit, economic exchange to

meet members' material and psychic needs in return for contracted services (Yammarino and Bass, 1990).

Transactional leadership is built upon contractual relationships. Job assignments, conditions of employment, rules, regulations, benefits and disciplinary codes are clarified. A price is set for doing anything. Motivation to work is a matter of trade-offs of members' efforts in exchange for rewards and the avoidance of punishment. Therefore commitments are short term and based on self interests. Innovation and risk taking are discouraged. Members have no role in building the organisation's vision or mission. Transactional leadership may have some advantages, but its effectiveness partly depends on whether the leader has control of rewards or penalties and whether such rewards are valued or penalties despised by members. Leaders may also be unable to provide rewards commensurate with members' expectations due to other reasons such as limitation of resources, ineffective appraisal systems, time pressures and a lack of skill on the leader's part to utilise positive reinforcement (Bass, 1998).

Transactional leadership involves three dimensions: *contingent reward*, *management-by-exception (active)* and *management-by-exception (passive)*.

Contingent Reward

This is an exchange process where the leader and organisational members agree on roles and responsibilities for reaching designated goals, and then the leader issues the reward or punishment according to members' performance. Examples of reward include praise, pay increase, bonuses, promotion or other material benefits. Punishment, on the other hand, can take the form of correction, reproof, suspension without pay, withdrawal of authorisation or even dismissal. When there is deviance from the norm, the leader may direct all attention to the deviation (Bass and Avolio, 1993; Coad and Berry, 1998). Sarros and Santora (2001) suggest that contingent reward facilitates the development of a positive reciprocal relationship between leaders and their subordinates who exchange ideas and skills in the pursuit of organisational goals and individual needs. Leaders who rely on contingent reward are more concerned with efficient processes than substantive ideas. They are interested in what works than what is true. They also display flexible tactics to encourage improvement by the suitable use of their power to reward or punish. Thus a bargain is struck, a contract is agreed upon. It is the reward that reinforces the

efforts to maintain desired performance and enhances members' expectations.

Management-by-Exception

This leadership dimension takes both an active and a passive form. The active form involves leaders putting implicit trust in organisational members to finish their work at satisfactory standard without inspiring the latter to achieve beyond expected outcomes. However, they actively monitor deviances from standards, mistakes and errors in members' work and take action when irregularities are found in order to maintain current performance levels. The passive form, on the other hand, involves leaders waiting passively for deviances, mistakes and errors to occur before taking corrective action. They remain passive and intervene only when something goes wrong. Their focus is on making sure that tasks are accomplished satisfactorily, expressing disappointment when performance is below standard, pointing out members' deficiencies and using specific examples of error rather than general criticism. Negative feedback may be accompanied by clarification and encouragement if the leader also believes in the power of contingent reward. At the other extreme, disapproval, reprimand or even dismissal may be used (Bass, 1998; Bass and Avolio, 1993; Coad and Berry, 1998). Sarros and Santora (2001) argue that management-by-exception, whether it be active or passive, results in leaders trusting their subordinates, maintaining the status quo and communicating ineffectively. According to Bass (1985), this leadership dimension contributes less to productivity and effort than contingent reward.

2.6.2 Transformational Leadership

Transformational leadership involves leaders generating among members awareness and acceptance of the purpose and mission of the organisation, and members developing a strong personal identification with their leader, joining in a shared vision of the future, and going beyond self interests and the pursuit of personal rewards. Transformational leaders raise members' consciousness about the value of designated outcomes and the ways of realising them. In turn, they get members to transcend their own immediate self interests for the sake of the organisational mission and vision. Members are elevated from concerns for security and affiliation to concerns for achievement and self-actualisation. In a transformational culture, there is a sense of purpose, commitments are long term, mutual interests are shared, and interdependence of leaders and subordinates

are established (Bass, 1998).

Transformational leadership requires much more than the desire for superficial change in attitudes or minor increments in motivation which can be accomplished by transactional leadership. To be successful, transformational leaders must create new vision, mobilise commitment and institutionalise change. Shared values and beliefs must be defined, and members empowered to commit themselves to team, group or organisational goals. Strategies must also be developed for accomplishing goals and transforming purpose into actions (Bass, 1985, 1998). It is believed that transformational leaders are more capable of make a significant difference in organisational effectiveness than transactional leaders. Their subordinates tend to expend more energy in their work, possess a better view of the performance level in their unit, and report greater satisfaction with colleagues and superiors (Yammarino and Bass, 1990).

Bass (1998) incorporates five dimensions in transformational leadership: *idealised influence (attributed)*, *idealised influence (behaviour)*, *inspirational motivation*, *intellectual stimulation* and *individualised consideration*. In a realistic situation, none of these is likely to stand alone. Rather, the transformational leader tends to display some combination of these five dimensions which are inter-correlated rather than completely independent of each other. Podsakoff et al (1990) synthesise transformational leadership behaviours into six key dimensions which include identifying and articulating a vision, providing an appropriate model, fostering acceptance of group goals, establishing high performance expectations, providing individualised support and intellectual stimulation. Other significant leadership behaviours identified by Gault et al (1992), Kanter (1992), Reich (1994) and Sherwood and Hoylman (1993) include: revising procedures and processes, empowering employees, fostering teamwork and communications, and continuing technological improvements.

The five transformational leadership dimensions proposed by Bass (1998) are examined below.

Idealised Influence

Idealised influence (in attribute and behaviour) or charisma is evident when leaders

exert profound and extraordinary influence on their subordinates by the power of their personalities. These leaders work by instilling pride, gaining respect and trust, and increasing optimism. They demonstrate high standards of ethical and moral conduct, avoid using power for personal gain and encourage risk taking. They are able to inspire in organisational members loyalty and devotion without regard to the latter's self interests. They also build on their own dramatic and persuasive words and actions, and develop insight into the needs, values and hope of members. As a result of their ability to articulate goals, these leaders unite members to seek objectives worthy of their best efforts, projecting onto members extreme self-confidence and convictions. Members, in turn, identify with their leaders and want to emulate them. Their self-esteem and enthusiasm are raised, and they are willing to put in extra efforts to fulfil their leaders' expressed expectations (Bass, 1998; Bass and Avolio, 1993). Smircich and Morgan (1982) find that through the use of idealised influence, leaders not only arouse achievement and affiliation motives which are linked to the organisational mission, they also generate a frame of reference and an image of reality for organisational members, enabling them to envision what lies ahead. It is suggested by Bass (1998) that in order to bring about renewal, change the course of organisational events and engage the full person of members in a transcendental organisational purpose, the charisma-like leadership elements of inner directedness, ambition, vision and mission are indispensable.

Inspirational Motivation

This leadership dimension involves leaders appealing to sentiments and emotions, and providing organisational members with meaning and challenge to their work. Yukl and Van Fleet (1982) define the inspirational leader as one who "stimulates enthusiasm among subordinates for the work of the group and says things to build their confidence in their ability to successfully perform assignments and attain group objectives" (p.90). Through the adoption of inspirational motivation, leaders express full confidence in their subordinates, and arouse team spirit and optimism in the workplace. Symbols and emotional appeals are used to increase members' awareness and understanding of mutually desired organisational goals. As a result, members become committed, involved, loyal and ready to exert extra efforts (Bass, 1998; Bass and Avolio, 1994).

Intellectual Stimulation

This involves arousing in organisational members a heightened sense of problem awareness, of thought and imagination, and of belief and value. The problem solving process is managed in such a way that problems are identified and high quality solutions are found and carried out with the full commitment of members. Intellectually stimulating leaders support members to rethink assumptions they never question before, and enable them to think about old problems in new ways. Members are encouraged to try out new approaches which subsequently change their belief and value. Such leaders tend to be less willing to be satisfied with partial solutions or to accept the status quo. They are likely to look for new ways and take the maximum advantage of opportunities despite high risks (Bass, 1998; Bass and Avolio, 1994; Coad and Berry, 1998; Sarros and Santora, 2001).

Individualised Consideration

Leaders exercise individualised consideration by treating organisational members differently but equitably on a one-to-one basis. They give personal attention to members, build a considerate relationship with them, treat them as equals, and help those in need regardless whether the need is business-related. Advice and support are given to facilitate members' self-development. Such leaders tend to provide members with challenges and learning opportunities, trust and respect them, and allow risk taking and tolerance for mistakes. They are also more willing to delegate authority and responsibilities in order to raise skills and confidence, and develop competence in members (Bass, 1998; Coad and Berry, 1998).

Individualised consideration can take many forms. Leaders may express appreciation for a job well done or point out subordinates' weakness constructively. Special projects may be assigned that promote members' self-confidence, utilise their talents and provide opportunities for learning. Individualised consideration is also seen in leaders keeping members fully informed about what is happening and why. Two-way communication replaces one-way transmission of orders. Attention is also given to ensure that the usually neglected ones are not left out. In addition, members are constantly kept aware of the organisational needs and the more noble cause of integrating their personal needs

with those of the organisation. Individualised consideration has been found to contribute to satisfaction with the leader and subordinates' productivity in an organisation. Through focusing on members' needs for growth and participation in decision making, leaders are able to build a happier and healthier atmosphere in the workplace (Bass, 1998).

2.6.3 Laissez-faire Leadership

Laissez-faire leadership involves leaders avoiding or ignoring leadership responsibilities. They tend to work intentionally to avoid involvement or confrontation and keep personal interactions to a minimum. Initiatives are discouraged and minimum pressure is exerted to ensure results. Communication is minimised and the leader is likely to be absent or withdrawn when faced with deviations from expectation. There is neither transaction nor agreement with organisational members. Decisions are often delayed; feedback, reward and involvement are absent. A negative correlation has been found between laissez-faire leadership and levels of effectiveness, satisfaction and individual performance. Laissez-faire leaders are seen as procrastinating and uncaring, resulting in low levels of innovation and potential conflicts in the organisation (Bass, 1998; Bass and Avolio, 1994).

2.6.4 Transformational vs Transactional Leadership

Brown and Townsend (1997) has argued that a people oriented leadership style is more beneficial to organisational development and improvement. Covey (1992) also advocates a change of leadership focus from fostering task achievements to raising individuals' consciousness:

> " ... people are not just resources or assets, not just economic, social, and psychological beings. They are also spiritual beings; they want meaning, a sense of doing something that matters. People do not want to work for a cause with little meaning, even though it taps their mental capacities to their fullest. There must be purposes that lift them, and bring them to their highest selves" (p.178-179).

Such leadership style has its source in the intellect, heart, mind and soul of individuals and is sustained through meaningful relationships. McKee (1991) reports that the relationship behaviours of community college presidents strongly affect their subordinates' job satisfaction in the areas of self-esteem, development opportunities,

accomplishment, job expectations, respect and participation. When asked to identify the characteristics of effective leaders, the majority of interviewees in the study by Bhindi and Duignans (1997) point out human factors such as authenticity, integrity and trust in members as important leadership attributes instead of work capabilities.

Being a people oriented leadership style, transformational leadership involves the leader influencing followers to perform beyond expectations, and the latter developing a strong personal identification with the leader. Empirical studies in management have demonstrated that this leadership style is positively associated with leaders' effectiveness and consistent with the learning orientation of their subordinates (Coad and Berry, 1998; Sivanathan and Fekken, 2002). It contributes to the development of capacity and personal commitment to organisational goals (Yammarino et al, 1998). Transformational leaders are able to bring about significant changes in an organisation's direction, purpose, structure and processes (Dubrin, 1995). According to Pierce and Newstrom (1995), the transformational leader represents "a style of leadership that may be capable of navigating organisations through chaos and into the 21st century" (p.195).

Despite the advocation for transformational leadership, there is also argument concerning the effectiveness of transactional leadership. Eagly and Karau (1991) discover that those employing more aggressive leadership practices are perceived as exercising more leadership than those displaying more transformational leadership practices. It is argued that organisational learning requires strong and sometimes directive leadership in the articulation of goals in ways that are meaningful for all.

Without favouring any leadership style, Bass (1998) emphasises that transactional and transformational forms of leadership need not be considered as opposite ends of a continuum, since one can augment the other. He stresses that "fundamental to the full range of leadership model is that every leader displays each style to some amount" (p.7). Transformational leadership alone is insufficient. Most successful leaders need to have the ability to effectively manage and transact with subordinates. Even the most inspiring transformational leaders may fail to accomplish their mission without transactional skills, which can help increase job satisfaction for followers and reduce role uncertainty.

Similar view is expressed by Bryman (1992) who argues that a leader can be both transactional and transformational. Qualitative data presented in the study by Sarros and Santora (2001) show that transformational leadership leads to caring behaviours. Transformational leaders listen to their followers and encourage their autonomy, creativity and self-esteem. On the other hand, transactional leadership is more focused on achieving results. Transactional leaders support organisational processes such as reward structures and the implementation of policies and procedures. Thus, while transformational leadership addresses the needs of people, transactional leadership addresses the organisational process. Both people and process are important in the continuous learning and growth of the organisation.

Pierce and Newstrom (1995) assert that leadership is not a stand-alone, cut-and-dried process. Rather, it is heavily influenced by the situation. It is suggested that leaders should adopt a leadership style depending on what the situation is like. As the situation changes, so should the leadership style (Hersey and Blanchard, 1988; Muczyk and Reimann, 1987). Farkas and Wetlaufer (1996) also find that successful CEOs do not fit leadership style to their personality, but instead adopt an approach that meets the needs of the organisation and the situation at hand. It is thus concluded that leaders need to possess an eclectic style and embrace a range of leadership skills in motivating the organisation to pursue its goals.

2.6.5 Impact of Leadership Style on School Effectiveness

In the educational context, some writers have argued that traditional forms of leadership are insufficient in effecting changes and large scale innovations in schools. When examining the skills needed to support the development of a strong school leadership in the 21st century which can give strategic direction whilst maintaining accountability, Green (2000) highlights the importance for a more people-focused leadership orientation. Specifically, principals are urged to use the best possible ways to motivate teachers so that they are enthusiastic about the direction in which they are going. He advises: "The most important part of the job is, and will always be the people. Treat them with dignity and respect at all times, show them that you value them. These standards should be maintained as much as possible. One failure here can take many months to recover" (p.92). Morrison (1998) points out that a crucial principle of managing educational change effective is the empowerment of individuals and creation

of win-win situations. This can only be done by addressing the human side of school management.

It is suggested that building the capacity for learning in schools demands a leadership style which is different from conventional models (Leithwood, 1992; Leithwood et al, 1994; Mitchell and Tucker, 1992; Murphy and Louis, 1994). Transformational leadership has increasingly been advocated as productive in school reforms (Leithwood, 1994; Yukl, 1998) since it operates from the heart as well as from the mind and cuts to the core of personal values and characters (Sergiovanni, 1990). It serves as the igniting force, uniting school members in a mutually beneficial and transforming shared purpose (Hughes, 1994).

Transformational leaders are also believed to be more facilitative of enhancing schools' capability to become learning organisations (Johnston and Caldwell, 2001). Barnett et al (2001) argue that the demands that are brought to schools by educational reforms are reasons for advocating transformational leadership because it is well suited to the challenge of current school restructuring. Transformational leadership has the potential for building a high level of commitment in teachers to the complex and uncertain nature of the reform agenda, and for fostering the capacities teachers need to respond positively to such agenda. It is also considered more beneficial for organisational learning, cultivating shared vision, distributing leadership and building a school culture necessary for effective restructuring in schools. In the above study to explore the relationship between leadership behaviours and aspects of schools' learning culture, a close relationship is found between teacher outcomes of extra effort, satisfaction and effectiveness, and transformational behaviours of individual concern. The study by Leithwood et al (1998a) likewise demonstrates that transformational leadership contributes significantly to school conditions which foster learning processes. Similar discovery is made by Lam and Pang (2003) in a survey of 1,197 teaching staff from 67 government-aided elementary and secondary schools in Hong Kong. Their study concludes that it is transformational leadership actions which are mainly accountable for enhancing organisational learning in schools. The study by Lam et al (2002) carried out in 51 primary and 37 secondary schools in Taiwan further confirms that transformational leadership outrank other factors in determining learning outcomes, irrespective of school type or personal background factors. Leithwood and Jantzi (1991)

suggest the adoption of transformational leadership for changing the school culture and what teachers actually do in the classroom.

On the other hand, positive effects brought about by transactional leadership cannot be ignored. The study by Gore and Steven (1998) demonstrates how transactional leadership practices adopted by senior management in educational institutes help them learn and effectively cope with external changes at times of crisis. Huberman and Miles (1984) note that both pressure and support from the district office are necessary in maintaining the scope of reform efforts. Effective school leadership which facilitates the development of professional learning communities is authoritative as well as supportive.

Some have suggested that both transactional and transformational skills are necessary in effective school leadership. Starratt (1995) believes that transactional leadership enables the school principal to deal with staff seeking their own individual, independent objectives. But transformational leadership seeks common aims to elevate staff beyond their self interests to a joint effort. It brings them to act on behalf of the collective interests. The premise is that whatever interests individuals might have, they are united with the school principal in the pursuit of higher goals. For Sergiovanni and Starratt (1993) transactional leadership is governed by instrumental or modal values such as fairness, honesty, loyalty and integrity while transformational leadership is concerned with end values such as freedom, community, equity, justice and brotherhood.

Marshall (1995) argues that it is impossible to make a value free judgment on school leadership styles, since views of school leadership are continually changing due to the influence of educational reforms and restructuring initiatives. School principals are advised to join "the head, heart and hand of leadership" (Sergiovanni, 1995). The heart is concerned with what one believes, values, dreams about, and is committed to one's personal vision. The head involves the theories of practice one has developed and one's ability to reflect on the actual situations in light of these theories. The combination of reflection with personal vision forms the basis of one's strategies and actions. The hand involves one's actions, decisions, leadership and management behaviours as strategies become institutionalised in the form of school programmes, policies and procedures. In short, principals are asked to link what they think, seek and do in order to successfully lead learning and continuous development in schools.

2.7 Other Influencing Conditions

Other influencing conditions which principals have direct or indirect control of can also affect schools' capability to grow into learning organisations. These include school culture, structures and resources.

2.7.1 School Culture

A collaborative and collegial culture is believed to be necessary for enhancing schools' capability to transform into learning organisations. Such culture is characterised by norms of mutual support, respect for colleagues' ideas, a willingness to take risks in attempting new practices, the exchange of honest feedback, shared celebration of successes, a strong focus on the needs and achievements of the students, informal sharing of ideas and resources, and continuous professional growth (Leithwood et al, 1998a; Leithwood et al, 1998b; Louis, 1994; Marks and Louis, 1999).

Reynolds et al (1996) point out that a school culture which solidifies consensus and cooperative planning fosters a new environment for relearning processes to take place. A culture that values teachers' work and empowers teachers is also important (Silins and Mulford, 2002; Silins et al, 2002). Likewise a democratic atmosphere is necessary for teachers to engage in collective inquiry (Levin, 1991; Marks and Louis, 1997; Robertson et al, 1995). School history and traditions is another influencing condition since past events remembered and passed on to new members can shape the school's learning culture (Elmore, 1995; Louis et al, 1996c; Schein, 1992; Scribner et al, 1999). Other cultural conditions as cited by Smylie (1995) and Stevenson (2001) include an open attitude to examine existing assumptions which promotes teachers' critical reflection and proactive thinking, and the willingness of management to share power and authority with other stakeholders in the school.

2.7.2 School Structures

The presence of school structures which support learning is essential. Favourable structural conditions identified include those that allow for greater participation in decision making by teachers, inclusive structures which promote collaboration and teamwork, physical environment which provides flexibility, and organisation of

teachers' work that encourages professional and collective learning (Marks and Louis, 1999; Stevenson, 2001).

Work and administrative structures created to facilitate professional dialogue and collaboration are crucial for promoting organisational learning in schools. Mitchell (1995) urges schools to reorganise their schedule in order to permit teachers time to meet and engage in collective learning. It is found that successful schools which promote learning all have weekly grade-level meetings and faculty studies that bring teachers together and foster among them a sense of collegial stimulation (Marks and Louis, 1999). Teachers appear to value more of their learning under informal settings such as small group discussions, informal problem solving sessions and common preparation periods for them to work together (Leithwood et al, 1998a). Exploring the structures that move ideas across boundaries in schools, Yeung et al (1999) show that the most successful teamwork takes place within interdisciplinary units where teachers of different subjects collaborate and work to fit the curriculum to the interests and needs of their students. These units enable teachers to look at the needs of students from different perspectives. Other effective across boundary structures identified include whole school staff meetings and professional development courses which encourage staff to examine their assumptions and generate consensus about missions and values.

Physical structure also matters. When teachers are reasonably close to one another physically, it makes sense for them to communicate and collaborate. In a study by Ben-Peretz and Schonmann (1999), the teachers' common lounge in Israeli schools gradually turns into an informal professional community where teachers chat, share ideas and prepare lessons together. Physical proximity provides these teachers more chance for collective learning. Addressing the aspect of school size, Lee and Smith (1997) find that large schools with a great number of teachers and students are not conducive to collective learning since learning communities are unlikely to develop in such complex organisations.

When examining highly successful *world class* schools in Australia which are on their way to becoming learning organisations, Johnston and Caldwell (2001) find effective communication structures to be an important prerequisite. In order to sustain learning these channels need to be reciprocal, inclusive and cover the following four levels: at

the staff, council and administration level; at the client level of parents, students and the local community; at the broader education level of links to other schools locally, nationally and internationally; and at the research level. Similar observation is made by Karsten et al (2000) in their case study on four Dutch primary schools striving to develop into learning organisations with the help from external consultants. Favourable communication structures identified include mechanisms for obtaining information from the local environment and selecting, processing and distributing it within the school; improved internal communications and opportunities for exchanging ideas and experience; and effective monitoring systems to regularly review and take stock of the learning experiences.

2.7.3 Resources

Environmental constraints such as resources carry some influence. For example, it is suggested that setting priorities for securing and allocating scarce resources to support integrated professional development programs enhances teachers' learning. Appropriate reward systems are necessary so that compensation for teachers is consistent with organisational priorities and is focused on organisational performance (Leithwood et al, 1998a; Leithwood et al, 1998b).

2.8 Potential Difficulties for Schools

Despite the relevance of the learning organisation concept to school management, potential difficulties exist which schools must overcome before they can develop into successful learning organisations. Schools' near inability to change has been criticised by writers such as Sarason (1990), Tyack and Cuban (1995) and Tye (2000) who show how thoughtful innovations have been defeated over and over again in traditional school settings. Some believe that being typically conservative, complex and highly fragmented organisations makes schools much more difficult to advance into learning organisations than business companies (Aspinwall, 1998; Senge et al, 2000). The study by Seymour and Arnott (1994) involving department heads from 49 secondary schools in the UK reveals weaknesses in the organisational structure and climate of schools which impede learning for school personnel. When interviewed by O'Neil (1995), Peter Senge points out the following problems with most schools: Teachers are often forced to conform to rules, goals and objectives. Learning is based on the passive ingestion of

information. The school organisation is fragmented and stratified. Although collaborative learning is often advocated for students, "the idea that teachers and administrators ought to learn together really hasn't gone too far" (p.20). After examining schools based on the five disciplines of the learning organisation, Isaacson and Bamburgh (1992) also remark that "it is a stinging experience to read about learning organisations and realise how few schools and districts fit the definition" (p.44).

The following sections discuss the challenges presented by each of the five disciplines on their practice in the school setting.

2.8.1 Difficulties of Practicing Personal Mastery in Schools

According to Johnston and Caldwell (2001), the real difficulty in achieving personal mastery lies in the need for developing a deep capacity among stakeholders to be at the forefront of knowledge and skill in learning and teaching, and this requires more than occasional in-service training or professional development for teachers. It demands a systematic, continuous and purposeful approach which ensures that each aspect of the school is conducive to efficient, effective and satisfying work for all.

2.8.2 Difficulties of Practicing Mental Model in Schools

With the discipline of mental model, exceptionally high mental and emotional demands are placed on the individual. Most people would find it difficult to fully integrate the discipline into their lives, since it requires significant efforts to develop complicated mental models and to adapt them for different situations. For example, Elmore et al (1996) discover that even when teachers are willing to learn new teaching methods, they often apply them in a superficial or inconsistent way, effecting little real changes. According to the writers, the reason why product approaches to teaching are dominant is that alternative process approaches require a complete change in pedagogical value and belief which teachers find difficult to do. Fullan and Stiegelbauer (1991) have similarly observed that even though mandated changes are adopted, it is difficult for school principals and teachers to change their attitudes and insights from their existing practices.

There are also psychological barriers to practicing the discipline particularly in schools. Stenhouse (1975) finds that "... the close examination of one's professional performance is personally threatening; and the social climate in which teachers work generally offers little support to those who might be disposed to face that threat" (p.159). Developing a mental model conducive to organisational learning requires considerable support and motivation, and calls for a successful integration of different aspects of work for school personnel.

2.8.3 Difficulties of Practicing Shared Vision in Schools

Senge (1990a) argues that organisations must formulate shared visions before they can move on to continuous improvement. But Lord and Hall (1995) and Salancik and Meindl (1984) both find that vision by itself is not enough to influence what members actually do. Similarly, Berson et al (2001) state that simply developing a vision may not be enough to motivate members to perform better. Vision needs to be practical, otherwise members may view it as unrealistic or wishful thinking.

In the school context, Fullan (1993) argues that there is an over-emphasis on vision in many schools, resulting in a false sense of security and in mission statements which lead only to complex plans without concrete actions. A vision is some future ideal state for which the school can plan. But in a turbulent environment, it may not be possible to develop a clear view of the school in the future. An imposed vision can only provide a false sense of security and prevent the development of the school. Louis and Miles (1990) similarly find that problems arise in many schools that have a written mission statement but the vision never moves on from the written word. There is often a hierarchical system where vision leads to mission which leads to aims, objectives and complex plans that may or may not result in action. In these schools there may be a mission statement expressing desirable outcomes such as high achievement, respect for others and some spiritual values. But the real challenge lies in effectively articulating a shared vision around the school and using it to guide decision making and actions.

2.8.4 Difficulties of Practicing Team Learning in Schools

Potential problems also exist in implementing team learning in schools. Schools as formal organisations are more prone to experience tension between the ethics of caring

for students, critical reflection and collaboration on one hand; and the bureaucratic necessities of hierarchy, accountability, rationality and control on the other (Meltzoff, 1994). It is found that the prevalent view of treating the classroom as the basic school unit often forces teachers to focus on day-to-day events, to work in isolation and to suppress sustained reflection on what they do (Fullan and Stiegelbauer, 1991). Wehlage et al (1992) believe that since teachers are too used to working on their own in separate classrooms, simply providing them time to meet is no guarantee that they would know how to work and learn together. This is reflected in Mitchell's (1999) study which describes the influences that emerge in an attempt to build a learning community in a Canadian elementary school. While many influences support the teachers' attempts to generate effective organisational learning, others interfere with their efforts, and the learning processes gradually disappear as more of the original participants have left the school. The cultural and political realities in a typical school environment suggest that the development of learning communities among teachers is extremely difficult.

The reform of teaching and learning in schools can also be a complicated issue. The case study conducted by Stevenson (2001) in an Australian high school reveals that schools may construct democratic governance structures and develop a strong sense of community and processes that promote serious dialogue and inquiry in some areas; but the underlying assumptions and values may remain unquestioned. Making changes in teaching and learning is a complex and difficult task that is different from making changes in other areas. Stevenson's (2001) study concludes that the potential of organisational learning for contributing to the improvement of teaching and learning in schools remains promising but vague.

Collaboration and team work can likewise create potential problems. Teams may be susceptible to the same kinds of bias as individuals, and in some cases more likely to do so (Allison and Messick, 1985; Argote et al, 1986). Group discussion may polarise judgment, moving it toward more extreme positions (Myers and Lamm, 1976). Janis (1982) similarly warns of the danger of *groupthink*. Members may also contribute less than their full effort, assuming others will take up their part (Weldone and Gargano, 1985). The emotion that is generated from collaborative processes may benefit the organisation through increased enthusiasm, satisfaction and ownership by participants; but it can also leave people with hurt feelings and interfere with the quality of decisions

when conflict is not managed productively (Mansbridge, 1973). Leithwood and Steinbach (1995) find that collaborative problem solving in schools creates long term cognitive growth only when participants believe that the process adopted by the group is actually more superior than individual problem solving. While recognising the value of interdependence, Barot and Raybould (1998) consider isolation as sometimes necessary for teachers to protect their autonomy and to exercise professional discretion. Little (1990) adds that professional isolation keeps teachers from fearing "an erosion of the corpus of ideas, methods and materials that serve as the basis of individual reputation, giving teachers distinct identity and status" (p.518).

2.8.5 Difficulties of Practicing Systems Thinking in Schools

The structural complexity of traditional schools often makes it hard to practice systems thinking. The subject-based nature of operation in most schools greatly inhibits organisational learning and hinders internal communication, causing knowledge and insights from various groups to remain isolated and inaccessible to all (Kruse and Louis, 1993).

Difficulties may also be encountered in promoting broad involvement of staff in school management. Large scale participation in decision making can be unmanageable and counter-productive. Endless committee meetings and added managerial responsibilities often consume large amounts of time and energy, and create confusion for teachers (Fullan and Stiegelbauer, 1991). The study by Louis and Kruse (1998) involving a large school divided into ten departments shows that the individual departments function well with their own independent decision making processes. But teachers become confused when the departments are required to come together and arrive at a common understanding on the school mission.

When the outcomes do not affect them or they have no knowledge of the issues, teachers may consider involvement in decision making a waste of time and develop resentment (Duke et al, 1981). It is also found that simply offering teachers broad involvement in decision making does not guarantee improved teaching and learning (Elmore et al, 1996; Murphy and Beck, 1995; Newmann and Wehlage, 1995). Teachers in the survey conducted by Bacharach et al (1988) have demanded to be more involved only in deciding those issues which directly affect their immediate teaching

responsibilities. Similar observation is made by Hoy and Tarter (1995) who conclude by proposing a model which invites the participation of teachers in the decision making process only when the decisions affect them directly or they have the expertise to offer.

In summary, for schools to develop into genuine learning organisations, they need to expand their capacity and improve their management through the practice of the five disciplines. But the potential challenges and difficulties in implementing each of the five disciplines in school management imply that schools must balance their conflicting imperatives between stability and change, between central leadership and broad involvement, and between individual autonomy and collective collaboration.

2.9 The Need for This Research

The literature review above covers various domains related to leadership and professional learning organisations in the educational context. The implementation of the learning organisation concept in school management as a new change ideology and a comprehensive reform approach is discussed. Because what fundamentally distinguishes learning schools from traditional bureaucratic schools is the practice and mastery of basic disciplines, Senge's (1990a) five disciplines of the learning organisation (personal mastery, mental model, team learning, shared vision and systems thinking) are explored, their importance emphasised and their applicability in schools closely examined. The review also identifies a significant connection between leadership and the practice of the five disciplines in organisations. The nine dimensions of the full range leadership model are presented to examine leadership styles that might enhance schools' capability to become successful learning organisations.

It is found that most literature on the learning organisation has targeted business organisations and relatively little on schools. Like companies, schools have to face increasing external and internal changes. In order to enliven the process of change, schools need to adopt the ethic of continuous learning and renewal, which is the tenet of the learning organisation. Research is particularly necessary to address the real challenge of developing effective leadership which can facilitate the transformation of schools into genuine learning organisations. This is because learning schools do not just happen. Their creation requires conscious interventions from principals to promote and

integrate learning at different levels in the school. A review of literature shows that there is a lack of research studies which explore the impact of principals' leadership style on the capability of schools to exhibit learning organisation characteristics. The current study can therefore contribute to new knowledge through identifying the leadership styles and behaviours most likely to turn schools into learning organisations.

Most of the existing literature on the learning organisation or learning school is originated from western developed countries. Culture plays an important role in the operation of an organisation and what is found in western schools may not be applicable to those in an oriental culture. Findings of this study can serve as a strategic basis for schools in Hong Kong to improve their learning capacity through more effective leadership.

Chapter 3: Methodology

This chapter covers the strategy and process employed to derive the data necessary to answer the research questions. It states the objectives and research questions, describes the methods, design and procedures adopted, and discusses the limitations imposed on the study.

3.1 Objectives

The literature review has identified a knowledge gap and the need to explore the influence of leadership on the capability of schools to resemble learning organisations. In order to bridge the gap, this study examines the relationship between leadership style adopted by principals and the extent to which schools in Hong Kong display the characteristics typical of a learning organisation. For the purpose of this research, the learning school is defined as one that

> possesses the capability to change, grow and adapt by taking a learning orientation and practicing the five disciplines of personal mastery, mental model, shared vision, team learning and systems thinking. Stakeholders including students, teachers, the principal and supporting staff actively engage themselves in learning and continually improve their performance in order to meet both the school goals and increasing external demands.

Based on the literature review and the identified gap of knowledge, a number of issues are particularly valuable to investigate into. In the area of prevalent styles adopted by leaders, period of time the leader works in an organisation and school level appear to be two important factors. For example, Hermann (1999) finds that the period of time and tenure in a position influences the leadership style and strategy employed by leaders. With respect to school level, it has been argued that secondary school principals tend to implement a more relationship-oriented style while primary school principals favour a more task-oriented style (Varaki, 2003).

Other issues that are worth exploring relates to the type of schools which are more/less capable to become learning organisations. For example, findings from a research by Karsten et al (2000) conclude that primary schools have to face more obstacles, since "the organisational culture of primary schools have tended to support teacher

individuality and autonomy, traditional views on learning and administrative leadership" (p.154). In contrast, based on his observations and interviews, Boyer (1995) believes that the primary school could be a place where everyone works together to promote learning. On the other hand, Senge et al (2000) argue that high schools (secondary schools) tend to be fragmented organisations where "control based on fragmented specialisation appears to be a logical way to organise schools" (p.45). It is believed that high schools will continue to face a stream of novel problems and ambitious demands which generate considerable pressure for both individuals and groups.

History also needs to be considered when examining schools' capability to become learning schools, since past events remembered and passed on to new members can shape a school's learning culture (Elmore, 1995; Louis et al, 1996c; Schein, 1992; Scribner et al, 1999). School size may also matter, as Lee and Smith (1997) have stated that large schools with a great number of teachers and students are not conducive to collective learning, and that learning communities are unlikely to develop in such complex organisations.

A review of literature has shown mixed viewpoints regarding the leadership style which best enhance schools' capability to advance into learning organisations. While some believe that transformational leaders are more facilitative of educational change and organisational learning (e.g. Johnston and Caldwell, 2001), others have acknowledged the positive effects brought about by transactional leadership (e.g. Gore and Steven, 1998).

In order to explore the above issues in light of the educational context of Hong Kong, the following research questions are investigated in the study:

(1) (a) What prevalent leadership styles are adopted by school principals in Hong Kong?

(b) What is the relationship between leadership style and the following variables:

- School type (primary or secondary school)?
- Period of current principalship (years during which a school is led by its current principal)?

(2) (a) To what extent do schools in Hong Kong display characteristics of the learning organisation, as measured by evidence of practicing the following five disciplines in Peter Senge's (1990a) model:

- Personal mastery?
- Mental model?
- Shared vision?
- Team learning?
- Systems thinking?

(b) What is the relationship between the display of learning organisation characteristics and the following variables:

- School type (primary or secondary school)?
- Staff size (total number of staff in the school)?
- School history (years of operation since establishment)?
- Period of current principalship (years during which a school is led by its current principal)?

(3) What is the relationship between leadership style and the display of learning organisation characteristics, as measured by evidence of practicing the following five disciplines in Peter Senge's (1990a) model:

- Personal mastery?
- Mental model?
- Shared vision?
- Team learning?
- Systems thinking?

(4) Which variables exert the greatest overall influence on schools' display of learning organisation characteristics?

(5) What leadership attributes and behaviours of school principals are important in fostering the practice of personal mastery, mental model, shared vision, team learning and systems thinking in schools?

3.2 Research Methods

The study involves the use of both email survey and individual interviews to collect data for analysis. According to Creswell (1998) and Krefting (1991), employing multiple research methods provides triangulation and corroboration where data collected can be evaluated against each other as a cross check to minimise distortion from a single source. Bennet (1991) advocates a combination of quantitative and qualitative methods for obtaining richer information and better control. Brown (1997) also encourages a triangulation of research methods "to include more than one philosophical position" especially in the management field where its multi-disciplinary nature creates more complications. It is argued that the inclusion of qualitative method such as interview can enrich data obtained from survey and produce more insight into the response patterns.

With its many strengths survey has become one of the most widely used research methods. It is particularly useful in collecting data from a large and wide population. Large data samples are feasible with survey research, and this increases the chance that results obtained are statistically significant even when analysing multiple variables. Many questions can be asked in a survey, giving considerable flexibility to data analysis. Standardisation of questions also ensures that data can be collected from different respondent groups, compiled and analysed using mathematical precision (e.g. statistically significant tests), and then interpreted comparatively. The obvious advantages of email over traditional survey media (telephone, mail and face-to-face) are the relatively low cost, potentially quick response and turn-around times, and the possibility of very large sample sizes. Moreover, according to Bachman et al (1999), responses to email surveys tend to be more candid than those to mail or phone surveys.

As a qualitative method interview enables the researcher to broaden understanding and analyse the connections and gaps that may occur due to the incompleteness of a quantitative approach. It offers flexibility and interactivity, and permits deeper probes of questions to clarify participants' point of view. Semi-structured interview which is focused allows the researcher to obtain data within a designated scope and initiate the participants to unfold elaborated information (Merton et al, 1990). According to Seidman (1998), interview is particularly useful in exploring participants' perceptions in

educational research: "If a researcher's goal ... is to understand the meaning people involved in education make of their experience, then interviewing provides a necessary, if not always completely sufficient, avenue of inquiry" (p.4).

3.3 Research Design

A composite of quantitative and qualitative methods were used in the study in order to triangulate the findings and complement the innate weaknesses of each method. Mass email survey was first conducted followed by individual interview with selected respondents. The survey facilitated efficient collection of data over a broad target population, while the interviews provided opportunities for participants to volunteer information and enabled the researcher to gain a more in-depth understanding of significant issues. Through the interviews, practice of the learning organisation concept in schools in Hong Kong and the social dynamics of principals' leadership behaviours were closely examined.

3.3.1 Data Collection Instruments

Each teacher participant in the survey was required to complete two questionnaires: the Learning School Assessment (LSA) and the School Leadership Questionnaire (SLQ).

Learning School Assessment

The LSA (refer to Appendix 1) was designed by the researcher for use in the study to measure the extent of a school displaying the characteristics of a learning organisation. The 29 statements were derived from the list of characteristics typical of the learning school (refer to Table 4) as identified from the literature (Johnston and Caldwell, 2001; Senge et al, 2000; Silins et al, 2002). They depicted a school's organisational picture from the teacher's point of view. Participants were asked to assess the current status of their school in terms of how well it exhibited the characteristics of a learning organisation. They judged the extent to which each description statement fitted their school by rating on a 7-point likert scale (1 = not at all; 2 = to a slight extent; 3 = to some extent; 4 = to a moderate extent; 5 = to a great extent; 6 = to a very great extent; 7 = always). The 29 statements were equally weighted and consistent with Senge's (1990a) description of the learning organisation. They were mapped to the five disciplines according to Table 5.

Table 5: Mapping of the LSA statements to the five disciplines

Discipline	Statements in the LSA
Personal Mastery	1 - 6
Mental Model	7 - 11
Shared Vision	12 - 16
Team Learning	17 - 24
Systems Thinking	25 - 29

School Leadership Questionnaire

The SLQ (refer to Appendix 1) was used to measure attributes of school leadership and identify the prevalent leadership styles adopted by school principals as perceived by teachers. It was adapted from the Multifactor Leadership Questionnaire Rater Form 5X developed by Bass and Avolio (1995, 2000) which measures attributes and behaviours (or dimensions) associated with the full range leadership continuum proposed by Bass (1985). Such continuum describes leadership styles ranging from transformational to transactional to laissez-faire leadership, as well as the nine associated leadership dimensions. Five dimensions are associated with transformational leadership, namely idealised influence (attributed), idealised influence (behaviour), inspirational motivation, intellectual stimulation and individualised consideration. The three dimensions of transactional leadership include contingent reward, management-by-exception (active) and management-by-exception (passive). The dimension of laissez-faire is associated with laissez-faire leadership.

The Multifactor Leadership Questionnaire Rater Form 5X was developed from quantitative research methods as well as in-depth interviews and case studies on leadership practices. It has been revised many times and now widely used. Results obtained from field tests involving 3,786 respondents and conducted in different settings such as government departments, business firms, educational institutions, political organisations and non-profit agencies have supported the validity and reliability of this instrument. Findings from confirmatory factor analysis have also substantiated its validity across different types of organisations. Reliabilities for individual leadership dimensions range from 0.74 to 0.91, which exceed standard cut-offs for internal consistency recommended in the literature (Bass and Avolio, 2000).

The Multifactor Leadership Questionnaire Rater Form 5X contains 45 items, 36 of which measure leadership characteristics across the full leadership continuum, while the remaining 9 measure organisational outcomes in three variables: willingness of the followers to expend extra effort, satisfaction with the leader and organisational effectiveness. Based on a pilot-test of the instrument and recommendations by the pilot group in the study, it was decided that the final SLQ should include only the first 36 items of the Multifactor Leadership Questionnaire Rater Form 5X. Little modification was made on these 36 items, except for adding words like "in the school" to clarity the meaning.

The SLQ required participants to rate the frequency of observed behaviours of their school principal for each description statement on a 7-point likert scale (1 = not at all; 2 = once in a while; 3 = sometimes; 4 = moderately often; 5 = fairly often; 6 = frequently if not always; 7 = always). The 36 statements were equally weighted and described leadership behaviours/attributes associated with the nine dimensions of transformational, transactional and laissez-faire leadership. Table 6 summarises these associations.

Table 6: Mapping of the SLQ statements to the three leadership styles and nine leadership dimensions

Leadership Style	Leadership Dimension	Statements in the SLQ
Transformational Leadership	Idealised influence (attributed)	1 - 4
	Idealised influence (behaviour)	5 - 8
	Inspirational motivation	9 - 12
	Intellectual stimulation	13 - 16
	Individualised consideration	17 - 20
Transactional Leadership	Contingent reward	21 - 24
	Management-by-exception (active)	25 - 28
	Management-by-exception (passive)	29 - 32
Laissez-faire Leadership	Laissez-faire	33 - 36

Questions to Collect Demographic Data

Besides the LSA and the SLQ, additional questions were also included (refer to Appendix 1) to collect demographic information on the personal and organisational characteristics of the participants, including the school type (primary or secondary school), staff size (total number of staff in the school), school history (years of operation since establishment) and period of current principalship (years during which a

school is led by its current principal).

Interview Questions

After the survey, selected respondents were invited to participate in a semi-structured, individual interview. A list of questions (refer to Appendix 2) were asked in order to identify the leadership attributes and behaviours perceived to be influential in the practice of each of the five disciplines (personal mastery, mental model, shared vision, team learning and systems thinking) in schools in Hong Kong.

3.3.2 Variables and Their Measurement

A list of variables established in the study to measure demographic profiles, school leadership and learning organisation characteristics are shown in Appendix 3, while Appendix 4 gives the dependent and independent variables for each research question and the method(s) employed to answer the latter. Since different meanings are associated with the ratings from 1 (not at all) to 7 (always) on the two questionnaires to measure school leadership and learning organisation characteristics, for the purpose of meaningful comparison and interpretation of findings, scores of the variables as reported in the following sections have been consistently reduced to the level of 1 to 7.

3.4 Procedures

3.4.1 Prior Preparation

The target population consisted of teachers from primary and secondary schools in the public education sector which have similar administrative structures and shared similar educational goals. These included all the government and subsidised schools in Hong Kong. It was originally planned to also incorporate school principals in the study for the purpose of comparing data obtained from different respondent groups. However, in the researcher's initial attempt to approach a random sample of 20 school principals, none of them was willing to participate in the study although they all agreed to invite teachers in their school to fill in the questionnaires. It was then decided that only teachers would be included in the study since they constituted the majority of the professional workforce in schools and played an important role in enhancing schools' capability to become learning organisations.

In order to validate the research instruments, a pilot group was formed consisting of one primary and one secondary school principal, as well as two primary and two secondary school teachers whom the researcher knew. The draft LSA and SLQ, and the interview questions, were first administered to the pilot group for field testing. This was to ensure that the questionnaire statements and interview questions asked the right things in the right way, and that they would be clear and well-understood by potential respondents. Feedback from the pilot group brought to light ambiguities and unclear phrases in the statements, which were revised to improve the content and readability.

3.4.2 Process

Email was used as the major channel for distributing questionnaires and collecting responses. An invitation email (refer to Appendix 5a) was sent in March 2004 to 680 primary and 419 secondary schools in Hong Kong (the school list was obtained from the Education and Manpower Bureau). The principals of these schools were asked to forward an invitation letter (refer to Appendix 5b) with an information sheet and the questionnaires to all teachers in their school and encourage their participation. All relevant details such as the purpose and benefits of the study as well as the rights of potential participants were included in the information sheet (refer to Appendix 6). Teachers were required to return their completed questionnaires to the researcher via email or fax. Follow-up emails and telephone calls were then used to solicit support from school principals and ensure adequate responses. It was also hoped that by answering possible queries principals might have, more of them would encourage their teachers to participate in the study.

After a preliminary analysis of the survey data, five respondents who had indicated willingness to be interviewed on their questionnaires were selected for individual interview. Selection was based on covering the three leadership styles which were most favoured by different school principals, and including schools which displayed the characteristics of the learning organisation to various extents. Before the interview, participants were explained the purpose of the interview and asked to sign the consent forms (refer to Appendix 7a and 7b). They were reassured of the anonymity and confidentiality that would be maintained in data collection and reporting of the study. During the interview, efforts were made to gain their trust and to make each of them feel comfortable. The individual interviews were conducted at the schools where the

participants worked. Each session lasted from 45 to 80 minutes, depending on how detailed the responses were. Participants were encouraged to elaborate their ideas, express their feelings, and provide examples and clarifications. The questions were modified from time to time, even during the interviews to ensure a smooth and logical flow. The researcher kept a separate log of comments and thoughts that were perceived of the conversation during each interview. This was used later to facilitate qualitative data analysis. The interviews were conducted in Cantonese, tape recorded with the consent of the participants and transcribed into English immediately after each session.

3.4.3 Data Manipulation

A total of 269 respondents returned their completed questionnaires to the researcher, including 143 primary and 126 secondary school teachers. For the purpose of anonymity and confidentiality, each survey respondent and interviewee was represented by a unique ID code. All the survey data were entered into the computer and analysed using the software package SPSS (version 10). 23 missing values were found from 10 statements of the LSA and 13 statements of the SLQ, involving three of the learning organisation disciplines and nine leadership dimensions respectively. Since the missing values were limited and distributed in a random pattern throughout the sample, they were not considered important in influencing the findings and result interpretation. A replacement of missing observation strategy was used to replace them as recommended by Tate (1998). Each missing value was replaced with the mean value of the corresponding variable for the entire sample. This method ensured no loss in sample size and statistical power. The minimum and maximum values for each variable were also checked for data entry accuracy by inspecting out-of-range values using descriptive statistics. No out-of-range values were detected.

Statistical treatments involving descriptive and inferential statistics were employed to analyse the survey data, including linear regression, multiple regression, the Pearson's product-moment correlation and the t-test technique. Results were compared to identify any significant correlations between independent and dependent variables. Interview data were analysed and categorised to identify emerging themes and patterns.

3.5 Limitations of the Research Design

Despite its many advantages, survey research has its inherent limitations. As a methodology relying on standardisation, survey tends to force the researcher to develop questions general enough to be minimally appropriate for all the potential respondents, thus often missing what is most appropriate to many of them. It can also produce inflexibility by requiring the study design (including the instrument and its administration) to remain unchanged throughout the data collection process. Bean and Roszkowski (1995) highlight the problem of low response rate in many survey studies. They argue that this is a serious issue for the researcher, since answers from respondents may differ substantially from those of non-respondents, resulting in a biased estimate of the characteristics of the population. The researcher must therefore find ways to ensure that a sufficient number of potential respondents will reply.

Certain limitations are associated with email surveys in particular. For example, it can be difficult to guarantee anonymity and confidentiality for respondents since their email address is included with their responses. Due to the open nature of most online networks, problems exist regarding the possible invasion of respondents' privacy and security of information submitted through the Internet (Tse et al, 1995; Schaeffer and Dillman, 1998). Bowers (1999) warns that respondents may be reluctant to download files in fear that they may contain viruses. Sampling limitation can also be incurred as potential respondents must have access to and be comfortable with using computer technology. In addition, there is the potential for research bias due to multiple submissions of data sets by the same participant. These are impossible to detect, and their impact on the results would be unknown but potentially large.

The use of interview in the study also involves limitations. Only a small group of respondents can be involved in the data collection process. It is difficult to cover a large sample due to the limitation of time and resources. Bias can be introduced due to personal appearance or other interviewer effects. Unreliability of information can also be caused by a variety of factors, including participants who are reluctant to report behaviours perceived as deviant, or falsify answers to avoid social disapproval. Some may stray off course and create difficulties of control and interpretation for the

researcher. Interview data for the current study are contributed only by those who volunteer to be interviewed. This creates a possible bias since those who do not volunteer may possess totally different views.

Chapter 4: Data Analysis and Findings - Survey

This chapter describes the techniques used in quantitative data analysis and presents the findings for the five research questions which have guided the current study.

4.1 Analysis of Demographic Data

On the part of the survey, a total of 269 completed questionnaires were returned, 262 of which via email and 7 via fax. Preliminary examination of the respondents' demographics shows that they have come from at least 256 different schools, including 138 primary and 118 secondary schools. This sample represents 23.3% of the total population of all primary and secondary schools in the public education sector in Hong Kong. Demographic data collected from the questionnaires provide information on the personal and organisational characteristics of the respondents, including the school type (primary or secondary school), staff size (total number of staff in the school), school history (years of operation since establishment) and period of current principalship (years during which a school is led by its current principal). Tables 7 to 10 give the summary statistics of respondents' profile on these four demographic variables.

Table 7: Demographic profile of respondents by school type

School Type	Count	Sample Percentage
Primary Schools	143	53.2 %
Secondary Schools	126	46.8 %
All	269	100.00 %

Table 8: Demographic profile of respondents by staff size

Staff Size	Primary Schools	Secondary Schools	All
40 or below	51.7 %	0.0 %	27.5 %
41 - 50	39.2 %	10.3 %	25.7 %
51 - 60	8.4 %	65.1 %	34.9 %
60 +	0.7 %	24.6 %	11.9 %
Mean	39.86	57.15	47.96
Median	38.00	56.00	47.00
Standard Error of Sample Mean	0.62	0.52	0.67
Minimum Size	25	41	25
Maximum Size	61	72	72

Table 9: Demographic profile of respondents by school history

School History	Primary Schools	Secondary Schools	All
1 - 5 years	7.7 %	24.6 %	15.6 %
6 - 10 years	25.2 %	20.6 %	23.1 %
11 - 15 years	35.6 %	38.1 %	36.8 %
15 + years	31.5 %	16.7 %	24.5 %
Mean	13.36	10.52	12.03
Median	13.00	11.50	12.00
Standard Error of Sample Mean	0.45	0.53	0.35
Minimum Years	2	1	1
Maximum Years	28	26	28

Table 10: Demographic profile of respondents by period of current principalship

Period of Current Principalship	Primary Schools	Secondary Schools	All
1 - 5 years	17.5 %	47.6 %	31.6 %
6 - 10 years	48.9 %	46.0 %	47.6 %
11 + years	33.6 %	6.4 %	20.8 %
Mean	9.08	6.12	7.69
Median	9.00	7.00	7.00
Standard Error of Sample Mean	0.28	0.27	0.22
Minimum Years	2	1	1
Maximum Years	21	19	21

The summary statistics above show that around 53.2% of the respondents are primary school teachers while 46.8% come from secondary schools. The staff size reveals to some extent the complexity of a school's organisational structure. Staff size of the sample ranges from 25 to 72, with an average school having 48 staff. Primary schools in general have fewer staff (mean = 39.86, compared with the secondary school mean of 57.15), with over half of them employing less than 40 staff. On the other hand, almost 90% of the secondary schools have more than 50 staff, and 24.6% of them even employ over 60 staff.

School history ranges from 1 to 28 years in the sample. While the average school is around 12 years old, the mean values are 13.36 years and 10.52 years for primary and secondary schools respectively. More secondary schools are newly established (24.6%) with a history of 1 to 5 years compared with primary schools (7.7%). On the other hand,

a much higher percentage of primary schools (31.5%) have a history of at least 15 years compared with secondary schools (16.7%).

The period of current principalship ranges from 1 to 21 years, with an overall mean of 7.69 years. There is a much higher percentage of secondary school principals (47.6%) who are new leaders to their school (having led the school from 1 to 5 years) compared with primary school principals (17.5%). Primary schools, on the other hand, constitute a much higher proportion of long-serving current principals (33.6%) who have headed their school for 11 years or more, compared with only 6.4% in the case of secondary schools. Overall, primary schools in the sample have longer-serving current principals (mean = 9.06 years) than secondary schools (mean = 6.12 years).

Overall, the sample provides a fairly non-skewed representation of the target population under investigation. There is no indication of an overwhelming majority of the respondents coming from a particular population segment. This is important in establishing reasonable confidence that findings from data analysis can be generalised to the population at large.

4.2 Reliabilities, Inter-correlations and Factor Analysis

Since data collected using the questionnaires were analysed in order to obtain the findings, in particular the LSA was designed by the researcher for first-time use in the study, it is important to first identify their quality and appropriateness as research instruments. The following sections to examine the reliabilities, inter-correlations and factor analysis results point to a valid internal construct of the two survey questionnaires.

4.2.1 School Leadership Questionnaire: Reliabilities and Inter-correlations

A reliability test was performed to determine the internal consistency of the SLQ. The reliability scores in the form of Cronbach's alpha for the nine leadership dimensions are shown in table 11. They are compared with those identified for the Multifactor Leadership Questionnaire 5X (MLQ 5X) from which the SLQ was adapted.

Table 11: Reliabilities of the SLQ

Leadership Dimension	Reliability of the SLQ	Reliability of the MLQ 5X
Idealised Influence Attributed (IIA)	0.86	0.86
Idealised Influence Behaviour (IIB)	0.83	0.87
Inspirational Motivation (IM)	0.79	0.91
Intellectual Stimulation (IS)	0.74	0.90
Individualised Consideration (IC)	0.78	0.90
Contingent Reward (CR)	0.63	0.87
Management-by-Exception Active (MBEA)	0.54	0.74
Management-by-Exception Passive (MBEP)	0.70	0.82
Laissez-faire (LF)	0.76	0.83

The reliability scores of the SLQ range from 0.54 to 0.86, which are a little lower than those of the MLQ 5X. This is probably due to the fact that the overall sample set used for testing the MLQ 5X is much larger (a total of 3,786 respondents). According to DeVellis (1991), reliability values between 0.7 and 0.8 are considered "respectable" while those between 0.8 and 0.9 are "very good". Having the majority of its reliability scores for the nine leadership dimensions exceeding 0.7 (mean = 0.74), the SLQ should therefore be regarded as a reasonably reliable instrument in measuring school principals' leadership behaviours and attributes across the nine dimensions.

Tables 12 and 13 provide the inter-correlations in the form of Pearson's correlation coefficient among the nine leadership dimensions and the three leadership styles on the SLQ.

Table 12: Inter-correlations among the nine leadership dimensions on the SLQ

	IIA	IIB	IM	IS	IC	CR	MBEA	MBEP	LF
II(A)	1.000								
II(B)	0.921*	1.000							
IM	0.885*	0.859*	1.000						
IS	0.756*	0.782*	0.835*	1.000					
IC	0.880*	0.863*	0.872*	0.791*	1.000				
CR	- 0.114	- 0.125#	- 0.227*	- 0.290*	- 0.211*	1.000			
MBEA	- 0.200*	- 0.210*	- 0.297*	- 0.373*	- 0.294*	0.806*	1.000		
MBEP	- 0.203*	- 0.220*	- 0.329*	- 0.396*	- 0.319*	0.783*	0.803*	1.000	
LF	- 0.839*	- 0.828*	- 0.884*	- 0.854*	- 0.852*	0.262*	0.336*	0.327*	1.000

* Correlation is significant at the 1% level (2-tailed)

Correlation is significant at the 5% level (2-tailed)

Table 13: Inter-correlations among the three leadership styles on the SLQ

	Transformational Leadership	Transactional Leadership	Laissez-faire Leadership
Transformational Leadership	1.000		
Transactional Leadership	- 0.287*	1.000	
Laissez-faire Leadership	- 0.908*	0.331*	1.000

* Correlation is significant at the 1% level (2-tailed)

Table 12 indicates that almost all the correlations among the nine leadership dimensions are significant at the 1% level, except for one which is significant at the 5% level. Correlations within the five transformational dimensions and within the three transactional dimensions are both positive and strong, but they are stronger for the former (mean = 0.844) than the latter (mean = 0.797). Correlations between transformational and transactional dimensions are all negative and weak (below the absolute magnitude of 0.4), with the majority below the absolute magnitude of 0.3. Specifically, such negative correlations get stronger from contingent reward to active management-by-exception to passive management-by-exception.

Correlations among the three leadership styles are all significant at the 1% level, as shown in table 13. Transactional and laissez-faire leadership styles are both negatively correlated with transformational leadership, but positively correlated with each other. While the negative correlation is weak between transactional and transformational leadership (r = -0.287), it is very strong between laissez-faire and transformational leadership (r = -0.908), indicating that transactional leadership is more similar to transformational leadership than laissez-faire leadership is.

4.2.2 Learning School Assessment: Reliabilities, Inter-correlations and Factor Analysis

The internal consistency of the Learning School Assessment (LSA) was determined by finding the reliabilities for the five learning organisation disciplines in the form of Cronbach's alpha, which are shown in table 14.

Table 14: Reliabilities of the LSA

Discipline	Reliability (alpha)
Personal Mastery	0.86
Mental Model	0.94
Shared Vision	0.85
Team Learning	0.92
Systems Thinking	0.88

The reliabilities range from 0.85 to 0.94, which indicate high internal consistency of the collected data. According to DeVellis (1991), such reliability range is considered "very good" for research instrument scales. Thus despite its use for the first time, the LSA proves to be a reasonably reliable instrument in measuring the extent to which a school resembles the ideal learning organisation.

Table 15 shows the inter-correlations in the form of Pearson's correlation coefficients (r) among the five learning organisation disciplines: personal mastery, mental model, shared vision, team learning and systems thinking.

Table 15: Inter-correlations among the five disciplines

	Personal Mastery	Mental Model	Shared Vision	Team Learning	Systems Thinking
Personal Mastery	1.000				
Mental Model	0.860*	1.000			
Shared Vision	0.839*	0.796*	1.000		
Team Learning	0.894*	0.909*	0.850*	1.000	
Systems Thinking	0.870*	0.892*	0.840*	0.894*	1.000

* Correlation is significant at the 1% level (2-tailed)

The correlation coefficients range from 0.796 to 0.909, all of which are significant at the 1% level. This indicates that the five disciplines are positively and very strongly correlated with one another. In particular, personal mastery, mental model, shared vision and team learning are all most highly correlated with team learning (r = 0.894, 0.909, 0.850, 0.894 respectively), while team learning is most highly correlated with mental model.

A measurement of any kind is valid to the degree it measures all of that and only that which it is supposed to measure. To be valid it must be free of extraneous factors that

systematically push or pull the results in one particular direction. If something other than what is being measured affects the results by introducing a systematic bias, the results are less valid. The construct validity of the LSA was determined using factor analysis as recommended by DeVaus (2002). The aim is to identify the simplest model which could explain the most variance in the variables concerned. Since the five disciplines have high correlations with one another, each of them is included for consideration as a variable. Table 16 provides the relevant statistics from the factor analysis.

Table 16: Eigenvalues and % of explained variance in the unrotated solution

Factor	Eigenvalue	% of Variance Explained	Cumulative %
1	4.458	89.2 %	89.2 %
2	0.217	4.3 %	93.5 %
3	0.138	2.8 %	96.2 %
4	0.109	2.2 %	98.4 %
5	0.079	1.6 %	100.0 %

It can be seen that including only one factor (factor 1) in the model already gives a very high eigenvalue (4.458) which is greater than 1, with most of the total variance (89.2%) in the five disciplines already explained. Factor 2, on the other hand, has an eigenvalue (0.217) which is less than 1. Incorporating it in the model only increases the percentage of explained variance by 4.3%. Similar situation occurs with the subsequent addition of factors 3, 4 and 5 where the corresponding eigenvalue becomes smaller and smaller. Therefore the best model should contain no more than one factor. This implies that the five disciplines need not be grouped into two or more different factors. Considering them as contributing to a single factor of learning organisation characteristics is sufficient. Table 17 shows the correlations (factor loadings) between this single factor and the five disciplines, as well as the corresponding communalities.

Table 17: Unrotated factor matrix and communalities for the five disciplines

Discipline	Factor Loading	Communality
Personal Mastery	0.945	0.893
Mental Model	0.945	0.892
Shared Vision	0.915	0.837
Team Learning	0.964	0.929
Systems Thinking	0.953	0.907

The resulting communalities are very high, ranging from 0.837 to 0.929. So there is no odd variable (discipline) which needs to be eliminated in order to maximise explained variance. The factor loadings are also very high (from 0.915 to 0.964) and similar in magnitude for each discipline. This supports the use of an unweighted scale to measure learning organisation characteristics by adding up the scores on individual disciplines.

4.3 Findings for Question One

Research question one asks: "(a) What prevalent leadership styles are adopted by school principals in Hong Kong? (b) What is the relationship between leadership style and the following variables: school type and period of current principalship?" Data collected using the School Leadership Questionnaire (SLQ) were analysed to answer this question.

4.3.1 Leadership Styles Adopted by School Principals

Since each statement in the SLQ measures observed frequency of leadership behaviours on a scale from 1 to 7 (1 = not at all, 2 = once in a while, 3 = sometimes, 4 = moderately often, 5 = fairly often, 6 = frequently, 7 = always), the summary statistics in table 18 (pp.91-92) below are reported by consistently reducing relevant values to an appropriate level for the purpose of comparison and meaningful interpretation. For example, the mean TF for all schools was obtained by taking an average of the five transformational leadership dimension scores.

Table 18: Summary statistics of scores from the SLQ

	Transformational Leadership						Transactional Leadership				Laissez-faire Leadership
	IIA*	IIB*	IM*	IS*	IC*	Overall TF@	CR#	MBEA#	MBEP#	Overall TS@	LF@
All Schools											
Mean	5.18	5.34	4.24	3.45	4.59	4.56	5.63	5.74	5.07	5.48	4.34
SE	0.09	0.09	0.08	0.08	0.08	0.08	0.07	0.06	0.07	0.06	0.07
Primary Schools											
Mean	5.54	5.58	4.61	3.81	5.02	4.91	5.28	5.39	4.72	5.13	3.96
SE	0.12	0.11	0.11	0.11	0.11	0.10	0.10	0.09	0.11	0.09	0.08

	Transformational Leadership						Transactional Leadership				Laissez-faire Leadership
	IIA*	IIB*	IM*	IS*	IC*	Overall, TF@	CR#	MBEA#	MBEP#	Overall, TS@	LF@
Secondary Schools											
Mean	4.76	5.06	3.82	3.03	4.10	4.16	6.02	6.14	5.47	5.87	4.78
SE	0.14	0.13	0.11	0.09	0.12	0.11	0.08	0.07	0.08	0.07	0.10
% of all schools with the highest score	38.7 %	64.3 %	6.3 %	0.4 %	12.3 %	30.9 %	55.4 %	65.4 %	11.2 %	60.6 %	9.3 %
% of primary schools with the highest score	47.6 %	59.4 %	5.6 %	0.0 %	15.4 %	49.0 %	55.2 %	58.7 %	13.3 %	44.8 %	6.3 %
% of secondary schools with the highest score	28.6 %	69.8 %	7.1 %	0.8 %	8.7 %	10.3 %	55.6 %	73.0 %	8.7 %	78.6 %	12.7 %

Notes (1)

The above results show that overall, the mean scores for different leadership styles in descending order are: transactional leadership (mean = 5.48), transformational leadership (mean = 4.56) and laissez-faire leadership (mean = 4.34). Over 60% of all schools in the sample score highest in transactional leadership compared with other leadership styles, while 30.9% of them have principals who practice transformational

---

Notes (1):
SE = Standard error of sample mean
SD (standard deviation) = SE × √n
The minimum and maximum scores for the mean are 1 and 7 respectively.
* Percentage of schools with the highest score on IIA, IIB, IM, IS and IC are obtained by the number of respondents rating the highest score for that particular dimension within transformational leadership divided by the number of respondents concerned (e.g. 269 in the case of all schools, 143 in the case of primary schools and 126 in the case of secondary schools). The sum of these five percentages exceeds 100% since there are more than one most highly rated leadership dimension.
# Percentage of schools with the highest score on CR, MBEA and MBEP are obtained by the number of respondents rating the highest score for that particular dimension within transactional leadership divided by the number of respondents concerned. The sum of these three percentages exceeds 100% since there are more than one most highly rated leadership dimension.
@ Percentage of the schools with the highest score on TF, TS and LF are obtained by the number of respondents rating the highest score for that particular leadership style divided by the number of respondents concerned. The sum of these three percentages exceeds 100% since there are more than one most highly rated leadership style.

leadership as their prevalent leadership style. Only a small number (9.3%) prefer laissez-faire leadership most. Secondary school principals are more inclined to adopt transactional leadership (mean = 5.87) and laissez-faire leadership (mean = 4.78) than primary school principals (mean scores are 5.13 and 3.96 respectively). On the other hand, primary school principals practice transformational leadership (mean = 4.91) more often than their secondary counterpart (mean = 4.16).

Within transactional leadership, the mean score for active management-by-exception (5.74) is similar to contingent reward (5.63), but higher than passive management-by-exception (5.07). All three leadership dimensions are practiced "fairly often" and "frequently". The majority of school principals (65.4%) display active management-by-exception more often than other transactional behaviours, and this is 10% higher than in the case for contingent reward (55.4%). There is a low percentage of school principals (11.2%) who adopt passive management-by-exception more often than other transactional leadership dimensions.

For transformational leadership, the mean scores for different dimensions in descending order are: idealised influence behaviour (mean = 5.34), idealised influence attribute (mean = 5.18), individual consideration (mean = 4.59), inspirational motivation (mean = 4.24) and intellectual stimulation (mean = 3.45). While the first four dimensions are displayed often, the mean score for intellectual stimulation is below the mid-point of 4, indicating that it is only practiced "sometimes". The majority of school principals (64.3%) display idealised influence behaviours more often than other transformational dimensions, while few of them demonstrate inspirational motivation (6.3%) and intellectual stimulation (0.4%) as their most preferred leadership dimension.

4.3.2 Relationship Between Leadership Style and School Type

In order to examine the relationship between leadership style and school type, three one-tailed t-tests were performed to check if there was any significant difference between the mean scores for primary and secondary schools on transformational, transactional and laissez-faire leadership. Table 19 summarises the resulting t-statistics.

Table 19: T-statistics on the relationship between leadership style and school type

Leadership Style	M_p	M_s	$M_p - M_s$	SE $(M_p - M_s)$	Hypotheses	T-test Statistic	Significance, p (1-tailed)	Critical Values
Transformational Leadership*	4.91	4.15	0.76	0.15	$H_0: \mu_p = \mu_s$ $H_1: \mu_p > \mu_s$	5.029	< 0.01	2.340 (at 1% level) 1.651 (at 5% level)
Transactional Leadership#	5.13	5.87	- 0.74	0.11	$H_0: \mu_p = \mu_s$ $H_1: \mu_p < \mu_s$	- 6.513	< 0.01	- 2.341 (at 1% level) -1.651 (at 5% level)
Laissez-faire Leadership*	3.95	4.78	- 0.83	0.13	$H_0: \mu_p = \mu_s$ $H_1: \mu_p < \mu_s$	- 6.587	< 0.01	- 2.340 (at 1% level) - 1.651 (at 5% level)

Notes (2)

For transformational leadership, the two hypotheses established are:

Null hypothesis: There is no difference between the mean scores for primary and secondary schools.

Alternative hypothesis: The mean score for primary schools is higher than that for secondary schools.

The resulting t-statistic is 5.029 which is higher than the critical value of 2.340 at the 1% significance level. Since it lies in the upper rejection region, H_0 is rejected in favour of H_1 at $p = 0.01$. This shows that the mean score for primary schools is significantly higher, and primary school principals are more likely to adopt transformational leadership than secondary school principals ($p < 0.01$).

For transactional leadership, the two hypotheses established are:

Null hypothesis: There is no difference between the mean scores for primary and secondary schools.

Alternative hypothesis: The mean score for secondary schools is higher than that for primary schools.

Notes (2):
M_p = Sample mean for primary schools
M_s = Sample mean for secondary schools
SE = Standard error
μ_p = Population mean for primary schools
μ_s = Population mean for secondary schools
H_0 = Null hypothesis
H_1 = Alternative hypothesis
* Statistics for this leadership style obtained based on the assumption of equal variances
# Statistics for this leadership style obtained based on the assumption of unequal variances

The resulting t-value is negative (-6.513) and lower than the critical value of -2.341 at the 1% significance level. Since it lies in the lower rejection region, H_0 is rejected in favour of H_1 at p = 0.01. The mean score on transactional leadership for primary schools is significantly lower. In other words, secondary school principals favour transactional leadership more than primary school principals ($p < 0.01$).

Focusing on laissez-faire leadership, the two hypotheses established are:

Null hypothesis: There is no difference between the mean scores for primary and secondary schools.

Alternative hypothesis: The mean score for secondary schools is higher than that for primary schools.

The t-value is again negative (-6.587) and lower than the critical value (-2.340) at the 1% significance level. Since it lies in the lower rejection region, H_0 is rejected in favour of H_1 at p = 0.01. The mean score on laissez-faire leadership for primary schools is significantly lower. That is, secondary school principals have a stronger tendency to adopt laissez-faire leadership than primary school principals ($p < 0.01$).

The situation within the group of primary schools was further explored to identify the principals' preference for leadership styles. This was done through conducting one-tailed t-tests on the paired differences among the mean scores for the three leadership styles. Tables 20 and 21 record the relevant findings.

Table 20: The mean scores for the three leadership styles within the group of primary schools

Leadership Style	Mean (N = 143)	Standard Deviation
Transformational Leadership (TF)	4.91	1.22
Transactional Leadership (TS)	5.13	1.11
Laissez-faire Leadership (LF)	3.95	0.99

Table 21: T-statistics on paired differences among the mean scores of the three leadership styles within the group of primary schools

	M_d	SE (M_d)	Hypotheses	T-test Statistic	Significance, p (1-tailed)	Critical Values
M_{TF} - M_{TS}	- 0.22	0.15	H_0: $\mu_d = 0$ H_1: $\mu_d < 0$	- 1.489	0.07*	- 2.353 (at 1% level) - 1.656 (at 5% level)
M_{LF} - M_{TF}	- 0.96	0.18	H_0: $\mu_d = 0$ H_1: $\mu_d < 0$	- 5.345	< 0.01	- 2.353 (at 1% level) - 1.656 (at 5% level)
M_{LF} - M_{TS}	- 1.18	0.12	H_0: $\mu_d = 0$ H_1: $\mu_d < 0$	- 10.147	< 0.01	- 2.353 (at 1% level) - 1.656 (at 5% level)

Notes (3)

* There is no significant difference between the mean scores for transformational and transactional leadership at the 0.05 or 1% level

A first glance at the mean values in table 20 gives the impression that primary school principals may be more inclined to adopt transactional leadership (mean = 5.13) rather than transformational leadership (mean = 4.91). However, the first t-value (-1.489) in table 21 is higher than both the critical values of -2.353 and -1.656 at the 1% and 5% significance level respectively (p = 0.07). Since it lies within the lower acceptance region, the null hypothesis H_0 is true and accepted. That is, there is no significant difference between the mean scores for transformational and transactional leadership at the 5% or 1% significance level. In other words, primary school principals are equally likely to adopt both leadership styles.

The t-value on the difference between laissez-faire and transformational leadership (-5.345) is negative and lower than the critical value of -2.353 at the 1% significance level. As it lies in the lower region, the null hypothesis is rejected in favour of the alternative hypothesis. This implies that laissez-faire leadership is less favoured by primary school principals when compared with transformational leadership ($p < 0.01$).

When compared with transactional leadership, laissez-faire leadership is also less adopted by primary school principals. The t-value on the difference in mean score (-

---

Notes (3):
M_{TF} = Mean score on transformational leadership within the group of primary schools
M_{TS} = Mean score on transactional leadership within the group of primary schools
M_{LF} = Mean score on laissez-faire leadership within the group of primary schools
M_d = Mean sample difference
μ_d = Difference in population mean

10.147) is again lower than the critical value of -2.353 at the 1% significance level. The alternative hypothesis is accepted and the null hypothesis rejected ($p < 0.01$).

The case with secondary schools was similarly analysed and the results are shown in tables 22 and 23.

Table 22: The mean scores for the three leadership styles within the group of secondary schools

Leadership Style	Mean (N = 126)	Standard Deviation
Transformational Leadership (TF)	4.15	1.25
Transactional Leadership (TS)	5.87	0.74
Laissez-faire Leadership (LF)	4.78	1.07

Table 23: T-statistics on paired differences among the mean scores of the three leadership styles within the group of secondary schools

	M_d	SE (M_d)	Hypotheses	T-test Statistic	Significance, p (1-tailed)	Critical Values
$M_{TF} - M_{TS}$	- 1.72	0.15	$H_0: \mu_d = 0$ $H_1: \mu_d < 0$	- 11.579	< 0.01	- 2.357 (at 1% level) - 1.657 (at 5% level)
$M_{LF} - M_{TF}$	0.63	0.20	$H_0: \mu_d = 0$ $H_1: \mu_d > 0$	3.097	< 0.01	2.357 (at 1% level) 1.657 (at 5% level)
$M_{LF} - M_{TS}$	- 1.09	0.09	$H_0: \mu_d = 0$ $H_1: \mu_d < 0$	- 11.784	< 0.01	- 2.357 (at 1% level) - 1.657 (at 5% level)

Notes (4)

The mean scores in table 22 provide a rough indication that secondary school principals tend to favour transactional leadership, followed by laissez-faire leadership, while transformational leadership is least practiced. T-tests on the paired differences among the mean scores for the three leadership styles within the group of secondary schools were conducted to confirm principals' preferences.

All the t-values shown in table 23 are significant at the 1% level, indicating that there is a difference in mean score between any pair of the three leadership styles. The first (-

---

Notes (4):
M_{TF} = Mean score on transformational leadership within the group of secondary schools
M_{TS} = Mean score on transactional leadership within the group of secondary schools
M_{LF} = Mean score on laissez-faire leadership within the group of secondary schools
M_d = Mean sample difference
μ_d = Difference in population mean

11.579) and third (-11.784) t-values are negative and lower than the critical value of -2.357 at the 1% significance level. They both lie within the lower rejection region, implying that the null hypotheses should be rejected in favour of the alternative hypotheses. That is, transactional leadership is more frequently practiced by secondary school principals than transformational and laissez-faire leadership ($p < 0.01$). T-value on the second row (3.097) is higher than the critical value of 2.357 at the 1% significance level. As it lies in the upper rejection region, the alternative hypothesis is accepted instead. This means that laissez-faire leadership is more readily adopted compared with transformational leadership ($p < 0.01$).

4.3.3 Relationship Between Leadership Style and Period of Current Principalship

In order to identify the effect of period of current principalship on the adoption of leadership style, three linear regression models were established and the relevant statistics are shown below in table 24.

Table 24: Linear regression models on the relationship between leadership style and period of current principalship

Leadership Style	Linear Regression Model	Coefficient of Determination, R^2	Significance, p
Transformational Leadership (TF)	E(TF | CP) = 2.892 + 0.217 × CP	0.355	< 0.01
Transactional Leadership (TS)	E(TS | CP) = 7.362 - 0.245 × CP	0.719	< 0.01
Laissez-faire Leadership (LF)	E(LF | CP) = 5.740 - 0.182 × CP	0.339	< 0.01

Notes (5)

All the resulting statistics obtained are significant at the 1% level, indicating that the three linear regression models are overall valid and significant. There is a moderately positive relationship ($R^2 = 0.355$) between period of current principalship and transformational leadership at the 1% significance level. For each increased year in current principalship, there is a corresponding increase of 0.217 in transformational leadership score. This means that longer-serving principals are more likely to adopt

---

Notes (5):
E(TF | CP) = Expected average score on transformational leadership given the period of current principalship
E(TS | CP) = Expected average score on transactional leadership given the period of current principalship
E(LF | CP) = Expected average score on laissez-faire leadership given the period of current principalship

transformational leadership than newer principals. The situation is opposite for transactional leadership, which displays a strongly negative relationship ($R^2 = 0.719$) with period of current principalship. For each increased year in current principalship, transactional leadership score decreases by 0.245. Similar tendency occurs with laissez-faire leadership, which is negatively and moderately correlated with period of current principalship ($R^2 = 0.339$). In other words, newer principals are more likely to adopt transactional and laissez-faire leadership than longer-serving principals ($p < 0.01$).

Table 24 also shows that the second equation on transactional leadership has the highest R^2 value, with 71.9% of the variation in transactional leadership score being explained by the period of current principalship. R^2 values for the other two equations are much lower, and only 35.5% and 33.9% of the variation in leadership score can be accounted for respectively. This means that among the three leadership styles, transactional leadership is most strongly affected by the period of current principalship.

The effect of period of current principalship on leadership style was further explored by dividing the sample into three groups of low (1-5 years), medium (6-10 years) and high (11+ years) period of current principalship. One-tailed t-tests on paired differences in mean score among the three leadership styles were then performed. Tables 25 to 30 provide the relevant findings.

Table 25: The mean scores on the three leadership styles within the 1-5 year group of current principalship

Leadership Style	Mean (N = 85)	Standard Deviation
Transformational Leadership (TF)	3.11	0.65
Transactional Leadership (TS)	6.16	0.32
Laissez-faire Leadership (LF)	5.43	0.69

Table 26: T-statistics on paired differences among the mean scores of the three leadership styles within the 1-5 year group of current principalship

	M_d	SE (M_d)	Hypotheses	T-test Statistic	Significance, p (1-tailed)	Critical Values
$M_{TF} - M_{TS}$	- 3.05	0.09	$H_0: \mu_d = 0$ $H_1: \mu_d < 0$	- 32.893	< 0.01	- 2.372 (at 1% level) - 1.663 (at 5% level)
$M_{LF} - M_{TF}$	2.32	0.14	$H_0: \mu_d = 0$ $H_1: \mu_d > 0$	16.919	< 0.01	2.372 (at 1% level) 1.663 (at 5% level)
$M_{LF} - M_{TS}$	- 0.73	0.07	$H_0: \mu_d = 0$ $H_1: \mu_d < 0$	- 10.770	< 0.01	- 2.372 (at 1% level) - 1.663 (at 5% level)

Notes (6)

For the 1-5 year group (N = 85), table 26 shows that all the t-values are significant at the 1% level. Specifically, the first (-32.893) and third (-10.770) t-values are negative and lower than the critical value of -2.372 at the 1% significance level. Since they lie in the lower rejection region, the null hypotheses are rejected in favour of the alternative hypotheses. That is, the mean score for transactional leadership (6.16) is significantly higher than those for transformational (3.11) and laissez-faire leadership (5.43). The t-value in the second row (16.919) is positive and lower than the critical value of 2.372 at the 1% significance level. It lies in the upper region, so the alternative hypothesis is accepted instead. This implies that the mean score for laissez-faire leadership is significantly higher than that for transformational leadership. The overall result shows that newer principals who have served their current school for 1 to 5 years are more inclined to practice transactional leadership, followed by laissez-faire leadership, while transformational leadership is least favoured by this group of school principals (p < 0.01).

Table 27: The mean scores on the three leadership styles within the 6-10 year group of current principalship

Leadership Style	Mean (N = 128)	Standard Deviation
Transformational Leadership (TF)	5.19	0.57
Transactional Leadership (TS)	5.76	0.44
Laissez-faire Leadership (LF)	3.95	0.60

Notes (6):
M_{TF} = Mean score on transformational leadership within the 1-5 year group of current principalship
M_{TS} = Mean score on transactional leadership within the 1-5 year group of current principalship
M_{LF} = Mean score on laissez-faire leadership within the 1-5 year group of current principalship
M_d = Mean sample difference
μ_d = Difference in population mean

Table 28: T-statistics on paired differences among the mean scores of the three leadership styles within the 6-10 year group of current principalship

	M_d	SE (M_d)	Hypotheses	T-test Statistic	Significance, p (1-tailed)	Critical Values
M_{TF} - M_{TS}	- 0.569	0.080	H_0: $\mu_d = 0$ H_1: $\mu_d < 0$	- 7.138	< 0.01	- 2.356 (at 1% level) - 1.657 (at 5% level)
M_{LF} - M_{TF}	- 1.240	0.098	H_0: $\mu_d = 0$ H_1: $\mu_d < 0$	- 12.658	< 0.01	- 2.356 (at 1% level) - 1.657 (at 5% level)
M_{LF} - M_{TS}	- 1.809	0.047	H_0: $\mu_d = 0$ H_1: $\mu_d < 0$	- 38.400	< 0.01	- 2.356 (at 1% level) - 1.657 (at 5% level)

Notes (7)

In the case of medium period of current principalship (6-10 years, N = 128), table 28 shows that the three t-values (-7.138, -12.658 and -38.400) are significant at the 1% level. They are all negative and lower than the critical value of -2.356 at the 1% significance level. As they lie in the lower region, the alternative hypotheses are true and accepted instead of the null hypothesis. That is, the mean score for transactional leadership (5.76) is significantly higher than those of transformational (5.19) and laissez-faire leadership (3.95). The mean score for transformational leadership is also significantly higher than laissez-faire leadership. The overall result implies that principals who have served their current school for 6 to 10 years adopt transactional leadership most frequently, followed by transformational leadership. Laissez-faire leadership is least practiced by this group of school principals ($p < 0.01$).

Table 29: The mean scores on the three leadership styles within the 11+ year group of current principalship

Leadership Style	Mean (N = 56)	Standard Deviation
Transformational Leadership (TF)	5.31	1.39
Transactional Leadership (TS)	3.79	0.83
Laissez-faire Leadership (LF)	3.58	1.27

Notes (7):
M_{TF} = Mean score on transformational leadership within the 6-10 year group of current principalship
M_{TS} = Mean score on transactional leadership within the 6-10 year group of current principalship
M_{LF} = Mean score on laissez-faire leadership within the 6-10 year group of current principalship
M_d = Mean sample difference
μ_d = Difference in population mean

Table 30: T-statistics on paired differences among the mean scores of the three leadership styles within the 11+ year group of current principalship

	M_d	SE (M_d)	Hypotheses	T-test Statistic	Significance, p (1-tailed)	Critical Values
M_{TF} - M_{TS}	1.516	0.098	H_0: $\mu_d = 0$ H_1: $\mu_d > 0$	15.523	< 0.01	2.396 (at 1% level) 1.673 (at 5% level)
M_{LF} - M_{TF}	-1.726	0.346	H_0: $\mu_d = 0$ H_1: $\mu_d < 0$	- 4.993	< 0.01	- 2.396 (at 1% level) - 1.673 (at 5% level)
M_{LF} - M_{TS}	-0.210	0.267	H_0: $\mu_d = 0$ H_1: $\mu_d < 0$	- 0.787	0.22*	- 2.396 (at 1% level) - 1.673 (at 5% level)

Notes (8)

* There is no significant difference between the mean scores for transactional and laissez-faire leadership at the 0.05 or 1% level

Within the group of long-serving school principals (11+ years, N = 56), table 30 indicates that the first two t-values are significant at the 1% level. The first t-value (15.523) is positive and higher than the critical value of 2.396 at the 1% significance level. The alternative hypothesis is accepted since the t-value lies in the upper rejection region. This shows that the mean score for transformational leadership (5.31) is significantly higher than that for transactional (3.79) leadership (3.58). With the second t-value (-4.993) being lower than the critical value of -2.396 and lying in the lower rejection region, the null hypothesis of equal mean scores is rejected. That is, the mean score for transformational leadership (5.31) is also significantly higher than that for laissez-faire leadership (3.58). On the other hand, the third t-value (-0.787) is not significant, and is higher than the critical values at both the 1% (-2.396) and 5% (-1.673) significance level. It thus lies within the acceptance region, indicating that the null hypothesis of equal mean scores is true and should be maintained. In order words, there is no significant difference between the mean scores for transactional and laissez-faire leadership at the 5% or 1% significance level. Principals who have served their current school for more than 11 years tend to adopt transformational leadership more than other leadership styles.

Notes (8):

M_{TF} = Mean score on transformational leadership within the 11+ year group of current principalship

M_{TS} = Mean score on transactional leadership within the 11+ year group of current principalship

M_{LF} = Mean score on laissez-faire leadership within the 11+ year group of current principalship

M_d = Mean sample difference

μ_d = Difference in population mean

Based on the above overall results, it can be concluded that principals who have served their current school for 10 years or less favour transactional leadership, while those who have served for 11 years or more tend to practice transformational leadership.

4.4 Findings for Question Two

Research question two asks: "(a) To what extent do schools in Hong Kong display characteristics of the learning organisation, as measured by evidence of practicing the five disciplines in Peter Senge's (1990a) model? (b) What is the relationship between the display of learning organisation characteristics and the following variables: school type, staff size, school history and period of current principalship?" Data collected using the Learning School Assessment (LSA) were analysed in order to answer this question.

4.4.1 Practice of the Five Disciplines in Schools

Each of the 36 statements of the Learning School Assessment measures the extent to which a school displays the characteristics of the learning organisation on a scale of 1 to 7 (1 = not at all, 2 = to a slight extent, 3 = to some extent, 4 = to a moderate extent, 5 = to a great extent, 6 = to a very great extent, 7 = always). In order to enable comparison and meaningful interpretation, the summary statistics recorded in table 31 have been consistently reduced to an appropriate level. For example, the mean LO score for all schools was obtained by taking an average of the five corresponding discipline scores.

Table 31: Summary statistics of scores from the LSA

	Personal Mastery	Mental Model	Shared Vision	Team Learning	Systems Thinking	Overall Score, LO
All Schools						
- Mean	4.77	3.75	4.76	3.41	4.17	4.17
- SE	0.08	0.11	0.08	0.07	0.09	0.08
Primary Schools						
- Mean	5.15	4.41	5.06	3.71	4.61	4.59
- SE	0.09	0.16	0.10	0.10	0.12	0.11
Secondary Schools						
- Mean	4.33	3.01	4.42	3.06	3.67	3.70
- SE	0.12	0.13	0.12	0.11	0.12	0.11

The summary statistics show that the mean for overall LO score is 4.17, which slightly exceeds the midpoint of 4. That is, an average school in Hong Kong displays learning organisation characteristics (or resembles the ideal learning organisation) to a moderate extent. The mean scores on the five disciplines in descending order are: personal mastery (4.77), shared vision (4.76), systems thinking (4.17), mental model (3.75) and team learning (3.41). It appears that schools have the strongest tendency to adopt personal mastery and shared vision, but are less inclined to practice the disciplines of mental model and team learning. Mean values for the first three disciplines are slightly above the midpoint while the last two are less than 4. Despite this, all the mean values are below 5, indicating that none of the five disciplines is practiced in schools to a great extent. In particular, the disciplines of mental model and team learning are only adopted to some extent.

The mean LO score for primary schools (4.59) is higher than that for secondary schools (3.70), which is lower than the midpoint. While an average primary school exhibits learning organisation characteristics to a moderate extent, an average secondary school only resembles the learning organisation to some extent. Most of the mean scores on the five disciplines for primary schools are above the midpoint, with personal mastery (mean = 5.15) being the highest followed by shared vision (mean = 5.06), both of which are practiced to a great extent. However, the mean score on team learning is below the midpoint, implying that this discipline is not sufficiently practiced, or only practiced to some extent in primary schools.

In the case of secondary schools, the highest mean score is on shared vision (4.42), followed by personal mastery (4.33). Both of them are slightly higher than the midpoint, while all the other mean scores are below the midpoint. This implies that secondary schools tend to practice the disciplines of personal mastery and shared vision to a moderate extent, with the other disciplines only adopted to some extent. In particular, the discipline of mental model (mean = 3.01) is given the lowest priority. Table 32 provides the overall score distribution on the five disciplines.

Table 32: Score distribution for the five disciplines

Score Range	Personal Mastery	Mental Model	Shared Vision	Team Learning	Systems Thinking	Overall Learning Organisation Score, LO
Low (<= 3)	13.0 %	38.3 %	14.5 %	37.6 %	30.1 %	27.9 %
Medium (3 < Score <= 5)	36.4 %	31.2 %	41.6 %	60.6 %	39.4 %	37.2 %
High (> 5)	50.6 %	30.5 %	43.9 %	1.8 %	30.5 %	34.9 %
Above Midpoint (> 4)	69.1 %	43.1 %	68.4 %	37.2 %	55.4 %	59.1 %
Below Midpoint (< 4)	27.5 %	52.0 %	27.1 %	60.2 %	42.0 %	40.9 %

The score distribution shows that over half of the schools (50.6%) score high (greater than 5) in personal mastery, which is adopted at least to a great extent in these schools. The low mean score on mental model (3.75) can be explained by a large group of schools (38.3%) achieving 3 points and below. On the other hand, the comparatively high mean score on shared vision (4.76) is resulted from around 43.9% of schools obtaining 5 points or more. The score distribution for team learning is rather uneven, with the majority of schools (60.6%) gaining medium scores (between 3 and 5 points) while few of them (1.8%) can achieve 5 points or higher. In the case of systems thinking, the score distribution is more even, with close to 40% of the schools obtaining medium scores.

The majority of the schools score above the midpoint of 4 in personal mastery, shared vision and systems thinking. But 52% and a high 60.2% of them fail to reach the midpoint in their practice of mental model and team learning respectively.

4.4.2 Relationship Between the Display of Learning Organisation Characteristics and School Type

To identify the effect of school type on the display of learning organisation characteristics, six one-tailed t-tests were conducted to determine if there was any significant difference between the mean scores for primary and secondary schools. Table 33 summarises the findings.

Table 33: T-statistics on the relationship between the display of learning organisation characteristics and school type

Discipline	M_p	M_s	$M_p - M_s$	SE $(M_p - M_s)$	Hypotheses	T-test Statistic	Significance, p (1-tailed)	Critical Values
Personal Mastery#	5.15	4.33	0.81	0.15	$H_0: \mu_p = \mu_s$ $H_1: \mu_p > \mu_s$	5.394	< 0.01	2.342 (at 1% level) 1.651 (at 5% level)
Mental Model#	4.41	3.01	1.40	0.21	$H_0: \mu_p = \mu_s$ $H_1: \mu_p > \mu_s$	6.826	< 0.01	2.341 (at 1% level) 1.651 (at 5% level)
Shared Vision#	5.06	4.42	0.64	0.16	$H_0: \mu_p = \mu_s$ $H_1: \mu_p > \mu_s$	4.073	< 0.01	2.342 (at 1% level) 1.651 (at 5% level)
Team Learning*	3.71	3.06	0.65	0.14	$H_0: \mu_p = \mu_s$ $H_1: \mu_p > \mu_s$	4.594	< 0.01	2.340 (at 1% level) 1.651 (at 5% level)
Systems Thinking*	4.61	3.67	0.94	0.17	$H_0: \mu_p = \mu_s$ $H_1: \mu_p > \mu_s$	5.609	< 0.01	2.340 (at 1% level) 1.651 (at 5% level)
Overall LO Score*	4.59	3.70	0.89	0.15	$H_0: \mu_p = \mu_s$ $H_1: \mu_p > \mu_s$	5.758	< 0.01	2.340 (at 1% level) 1.651 (at 5% level)

Notes (9)

For the discipline of personal mastery, the two hypotheses established are:

Null hypothesis: There is no difference between the mean scores for primary and secondary schools.

Alternative hypothesis: The mean score for primary schools is higher than that for secondary schools.

The resulting t-value is positive (5.394) and higher than the critical value of 2.342 at the 1% significance level. It lies in the upper rejection region, so the null hypothesis is rejected in favour of the alternative hypothesis. That is, the mean score for primary schools is significantly higher. Primary schools have a stronger tendency or capability to practice the discipline of personal mastery compared with secondary schools ($p <$ 0.01).

Notes (9):
M_p = Sample mean for primary schools
M_s = Sample mean for secondary schools
SE = Standard error
μ_p = Population mean for primary schools
μ_s = Population mean for secondary schools
H_0 = Null hypothesis
H_1 = Alternative hypothesis
* Statistics for this discipline obtained based on the assumption of equal variances
# Statistics for this discipline obtained based on the assumption of unequal variances

Similar hypotheses were established in the cases with the other four disciplines, where the null hypothesis assumed no difference between the mean scores for primary and secondary schools, and the alternative hypothesis denoted a higher mean score for primary schools. The resulting t-values (6.826, 4.073, 4.594 and 5.609) all exceed the critical value at the 1% significance level. Since they are within the upper rejection region, the alternative hypotheses are accepted instead. This indicates that the mean scores on mental model, shared vision, team learning and systems thinking for primary schools are all higher than those for secondary schools. The same situation can be found when considering overall learning organisation characteristics. With the t-value (5.758) exceeding the critical value of 2.340 at the 1% significance level and lying in the upper rejection region, the null hypothesis is rejected. That is, primary schools achieve a significantly higher overall LO score than their secondary counterpart ($p < 0.01$).

The above results conclude that primary schools in Hong Kong practice the five disciplines to a greater extent than secondary schools. They have a stronger tendency to resemble the ideal learning organisation and exhibit more of its typical characteristics.

4.4.3 Relationship Between the Display of Learning Organisation Characteristics and Staff Size

In order to identify the effect of staff size on the display of learning organisation characteristics, six linear regression models were established. The relevant statistics are provided in table 34.

Table 34: Linear regression models on the relationship between display of learning organisation characteristics and staff size

Discipline	Linear Regression Model	Coefficient of Determination, R^2	Significance, p
Personal Mastery (PM)	E(PM | SIZE) = 6.396 - 0.034 × SIZE	0.084	< 0.01
Mental Model (MM)	E(MM | SIZE) = 6.383 - 0.055 × SIZE	0.106	< 0.01
Shared Vision (SV)	E(SV | SIZE) = 5.992 - 0.026 × SIZE	0.046	< 0.01
Team Learning (TL)	E(TL | SIZE) = 4.679 - 0.027 × SIZE	0.058	< 0.01
Systems Thinking (ST)	E(ST | SIZE) = 5.908 - 0.036 × SIZE	0.075	< 0.01
Overall Learning Organisation Score (LO)	E(LO | SIZE) = 5.872 - 0.036 × SIZE	0.084	< 0.01

Notes (10)

All the resulting statistics are significant at the 1% level, indicating that the six linear regression models are overall valid and significant. There is a very weak and negative relationship ($R^2 = 0.084$) between staff size and personal mastery at the 1% significance level. Staff size accounts for 8.4% of the variation in the practice of personal mastery in schools. For each additional staff in the school, there is a corresponding decrease of 0.034 unit of personal mastery.

Similar situation occurs with the other four disciplines which also relate negatively but very weakly with staff size. An increase of one staff leads to a decrease in mean score for mental model, shared vision, team learning and systems thinking by 0.055, 0.026, 0.027 and 0.036 unit respectively. The linear relationship between staff size and overall learning organisation characteristics is also negative but very weak ($R^2 = 0.084$). Adding one staff causes a school's overall LO score to reduce by 0.036 unit.

Staff size does not appear to be a strong factor in influencing the practice of the five disciplines, as can be seen by all the low R^2 values in table 34. The highest value is 0.106, indicating that the strongest relationship occurs between staff size and mental model. Staff size explains 10.6% of the score variation for mental model, compared

---

Notes (10):
E(PM | SIZE) = Expected average score on personal mastery given the school's staff size
E(MM | SIZE) = Expected average score on mental model given the school's staff size
E(SV | SIZE) = Expected average score on shared vision given the school's staff size
E(TL | SIZE) = Expected average score on team learning given the school's staff size
E(ST | SIZE) = Expected average score on systems thinking given the school's staff size
E(LO | SIZE) = Expected average score on overall learning organisation characteristics given the school's staff size

with only 4.6% for shared vision.

4.4.4 Relationship Between the Display of Learning Organisation Characteristics and School History

The following six linear regression models were established to determine the effect of school history (years of operation since establishment) on the display of learning organisation characteristics.

Table 35: Linear regression models on the relationship between display of learning organisation characteristics and school history

Discipline	Linear Regression Model	Coefficient of Determination, R^2	Significance, p
Personal Mastery (PM)	E(PM | HIS) = 3.240 + 0.127 × HIS	0.326	< 0.01
Mental Model (MM)	E(MM | HIS) = 1.620 + 0.177 × HIS	0.309	< 0.01
Shared Vision (SV)	E(SV | HIS) = 3.336 + 0.118 × HIS	0.273	< 0.01
Team Learning (TL)	E(TL | HIS) = 1.952 + 0.121 × HIS	0.340	< 0.01
Systems Thinking (ST)	E(ST | HIS) = 2.440 + 0.144 × HIS	0.333	< 0.01
Overall Learning Organisation Score (LO)	E(LO | HIS) = 2.517 + 0.137 × HIS	0.353	< 0.01

Notes (11)

The resulting statistics given in table 35 are all significant at the 1% level, indicating that the six linear regression models are valid and significant. There is a moderately positive relationship ($R^2 = 0.326$) between school history and personal mastery. School history accounts for 32.6% of the score variation for personal mastery. For each increased year of school history, there is a corresponding increase of 0.127 unit of personal mastery. Similar situation occurs with mental model ($R^2 = 0.309$), team learning ($R^2 = 0.340$), systems thinking ($R^2 = 0.333$) and overall learning organisation characteristics ($R^2 = 0.353$) which are also moderately and positively related with school history. The relationship between school history and shared vision is again positive but relatively weak ($R^2 = 0.273$). An additional year of history helps a school to

---

Notes (11):
E(PM | HIS) = Expected average score on personal mastery given the school history
E(MM | HIS) = Expected average score on mental model given the school history
E(SV | HIS) = Expected average score on shared vision given the school history
E(TL | HIS) = Expected average score on team learning given the school history
E(ST | HIS) = Expected average score on systems thinking given the school history
E(LO | HIS) = Expected average score on overall learning organisation characteristics given the school history

score higher in mental model, shared vision, team learning, systems thinking and overall LO score by 0.177, 0.118, 0.121, 0.144 and 0.137 unit respectively.

School history is a moderate predictor for most of the disciplines but a weak predictor for shared vision. Its influence on overall learning organisation characteristics is the strongest in comparison, accounting for 35.3% of the variation in overall LO score. At the lower end, only 27.3% of the score variation for shared vision can be explained by the factor of school history.

4.4.5 Relationship Between the Display of Learning Organisation Characteristics and Period of Current Principalship

The effect of period of current principalship (years during which a school is led by its current principal) on the display of learning organisation characteristics was determined by developing six linear regression models as shown in table 36.

Table 36: Linear regression models on the relationship between display of learning organisation characteristics and period of current principalship

Discipline	Linear Regression Model	Coefficient of Determination, R^2	Significance, p
Personal Mastery (PM)	E(PM | CP) = 3.100 + 0.217 × CP	0.356	< 0.01
Mental Model (MM)	E(MM | CP) = 1.218 + 0.330 × CP	0.400	< 0.01
Shared Vision (SV)	E(SV | CP) = 3.300 + 0.189 × CP	0.263	< 0.01
Team Learning (TL)	E(TL | CP) = 1.899 + 0.196 × CP	0.334	< 0.01
Systems Thinking (ST)	E(ST | CP) = 2.342 + 0.238 × CP	0.340	< 0.01
Overall Learning Organisation Score (LO)	E(LO | CP) = 2.372 + 0.234 × CP	0.383	< 0.01

Notes (12)

All the resulting statistics are significant at the 1% level. The relationship between period of current principalship and personal mastery is moderately positive ($R^2 = 0.356$).

Notes (12):
E(PM | CP) = Expected average score on personal mastery given the period of current principalship
E(MM | CP) = Expected average score on mental model given the period of current principalship
E(SV | CP) = Expected average score on shared vision given the period of current principalship
E(TL | CP) = Expected average score on team learning given the period of current principalship
E(ST | CP) = Expected average score on systems thinking given the period of current principalship
E(LO | CP) = Expected average score on overall learning organisation characteristics given the period of current principalship

For every increased year of leadership by the current principal, there is a corresponding increase of 0.217 unit of personal mastery. Mental model (R^2 = 0.400), team learning (R^2 = 0.334), systems thinking (R^2 = 0.340) as well as overall learning organisation characteristics (R^2 = 0.383) are also moderately and positively related to period of current principalship. The relationship between period of current principalship and shared vision (R^2 = 0.263) is again positive but relatively weak. An additional year of leadership by the current principal improves a school's score in mental model, shared vision, team learning, systems thinking and overall LO score by 0.330, 0.189, 0.196, 0.238 and 0.234 unit respectively.

Period of current principalship exerts a moderate influence on most of the disciplines but a weak influence on shared vision. Its impact on mental model appears to be the strongest in comparison, accounting for 40% of the score variation for the former. At the lower end, only 26.3% of the score variation for shared vision can be explained by period of current principalship.

4.5 Findings for Question Three

Research question three asks: "What is the relationship between leadership style and the display of learning organisation characteristics, as measured by evidence of practicing the following five disciplines in Peter Senge's (1990a) model: personal mastery, mental model, shared vision, team learning and systems thinking?" The Pearson's product-moment correlation (r) with a two-tailed non-directional test was used to determine the strength of relationship between individual leadership styles and schools' display of learning organisation characteristics.

4.5.1 Relationship Between the Display of Learning Organisation Characteristics and Transformational Leadership

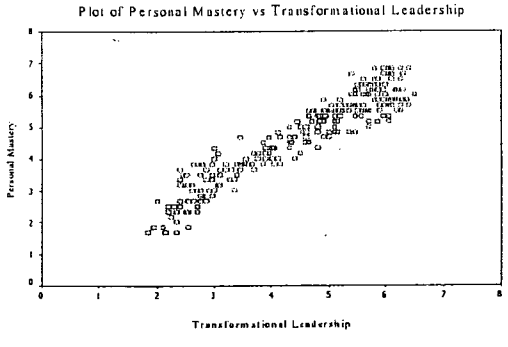
The relationship between the display of learning organisation characteristics and transformational leadership is shown in the following correlation matrix (table 37) on the five disciplines versus the five transformational leadership dimensions.

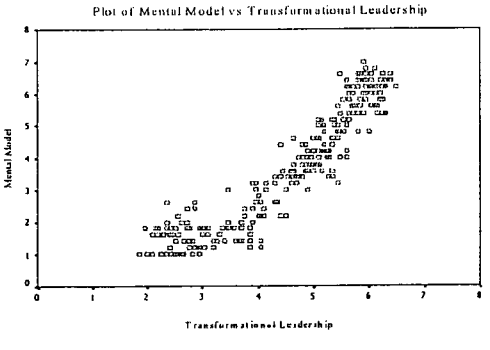
Table 37: Correlation matrix on the five disciplines versus the five dimensions of transformational leadership

Discipline	IIA	IIB	IM	IS	IC	TF
Personal Mastery	0.912*	0.886*	0.882*	0.813*	0.886*	0.937*
Mental Model	0.859*	0.840*	0.897*	0.861*	0.883*	0.926*
Shared Vision	0.858*	0.849*	0.835*	0.737*	0.827*	0.879*
Team Learning	0.898*	0.892*	0.897*	0.842*	0.882*	0.943*
Systems Thinking	0.871*	0.870*	0.880*	0.810*	0.869*	0.919*
Overall Learning Organisation Score	0.929*	0.916*	0.931*	0.864*	0.921*	0.975*

* Correlation is significant at the 1% level (2-tailed)

The resulting Pearson's correlation coefficients are all significant at the 1% level, with almost all of them exceeding 0.8, indicating that the five disciplines are very strongly and positively related to the five transformational leadership dimensions. Overall, the relationship between the display of learning organisation characteristics and transformational leadership is extremely strong (r = 0.975). The relationship between transformational leadership and individual disciplines is also very strong, with such strength being the highest with team learning (r = 0.943), followed by personal mastery (r = 0.937), mental model (r = 0.926), systems thinking (r = 0.919) and shared vision (r = 0.879). Figure 1 (pp.112-113) shows the scatterplots on transformational leadership versus each of the five disciplines.





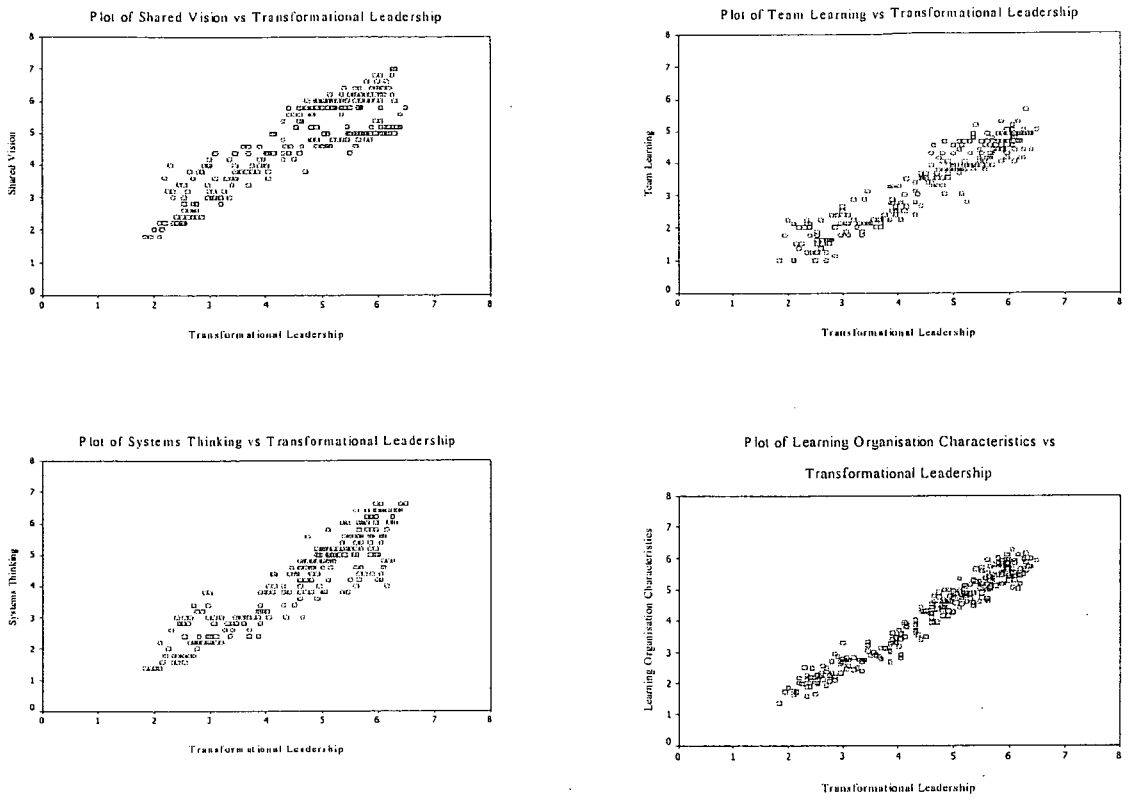


Figure 1: Scatterplots of transformational leadership versus the five disciplines

The above scatterplots further verify that the relationship between transformational leadership and each of the five disciplines is positive and linear. The strong linearity suggests that transformational leadership is an important predictor of the display of learning organisation characteristics, and of the practice of each discipline. Increase in principals' transformational leadership behaviours significantly enhances schools' capability of resembling the learning organisation.

4.5.2 Relationship Between the Display of Learning Organisation Characteristics and Transactional Leadership

The correlation matrix in table 38 shows the relationship between the five disciplines and the three transactional leadership dimensions.

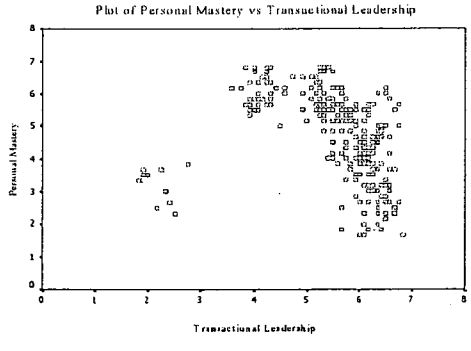
Table 38: Correlation matrix on the five disciplines versus the three dimensions of transactional leadership

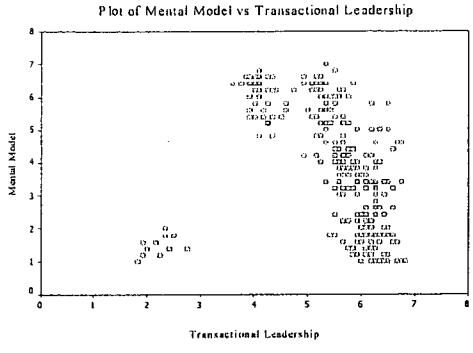
Discipline	CR	MBEA	MBEP	TS
Personal Mastery	- 0.222*	- 0.303*	- 0.282*	- 0.288*
Mental Model	- 0.274*	- 0.355*	- 0.406*	- 0.373*
Shared Vision	- 0.122#	- 0.209*	- 0.196*	- 0.188*
Team Learning	- 0.202*	- 0.293*	- 0.308*	- 0.288*
Systems Thinking	- 0.208*	- 0.293*	- 0.338*	- 0.302*
Overall Learning Organisation Score	- 0.223*	- 0.313*	- 0.332*	- 0.312*

* Correlation is significant at the 1% level (2-tailed)

Correlation is significant at the 5% level (2-tailed)

All the correlation coefficients are significant at the 1% level, except for one (-0.122) which is significant at the 5% level. The values are all negative and almost all of them are below the absolute magnitude of 0.4, indicating that the five disciplines are weakly and negatively related to the three transactional leadership dimensions. Overall, the relationship between the display of learning organisation characteristics and transactional leadership is weak (r = -0.312). In comparison, the correlation is highest between transactional leadership and mental model (r = -0.373), and lowest in the case of shared vision (r = -0.188). Figure 2 (pp.114-115) provides the scatterplots on transactional leadership versus each of the five disciplines.





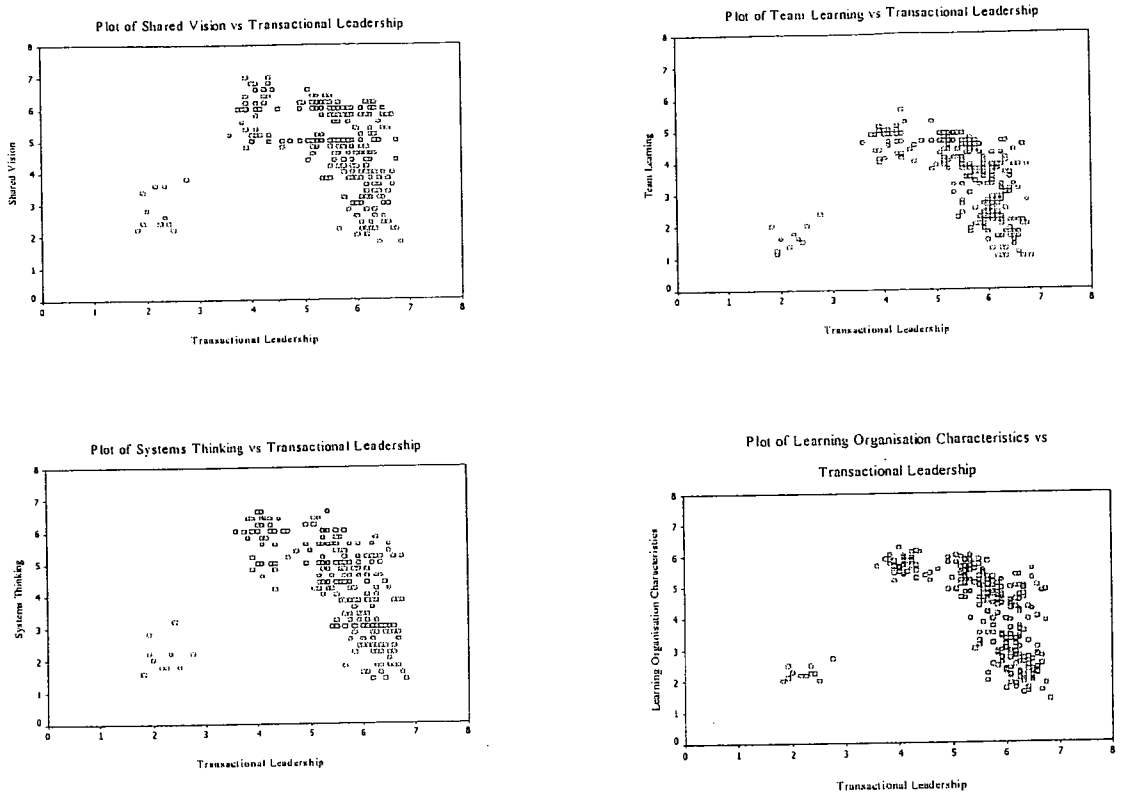


Figure 2: Scatterplots of transactional leadership versus the five disciplines

The above scatterplots further confirm that the relationship between transactional leadership and each of the five disciplines is weakly negative. When compared with the scatterplots on transformational leadership, the linear patterns here are much less apparent. The points are also dispersed over a wider and negatively sloped band, with some outliers. This implies that transactional leadership is a weak predictor of the display of learning organisation characteristics, and of the practice of each discipline. Increase in principals' transactional leadership behaviours may diminish schools' capability to show learning organisation characteristics, but such effect is weak.

4.5.3 Relationship Between the Display of Learning Organisation Characteristics and Laissez-faire Leadership

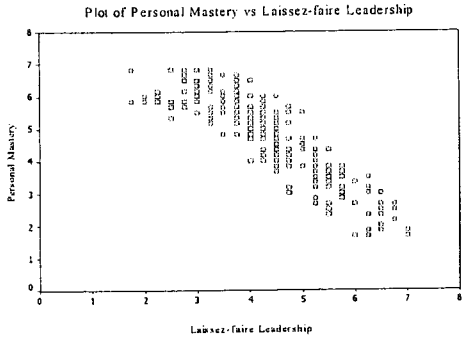
Table 39 shows the correlation matrix on the relationship between the five disciplines and the laissez-faire leadership dimension.

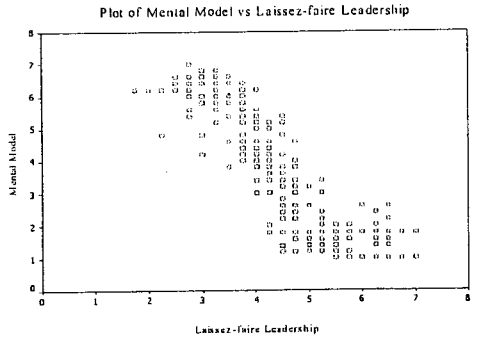
Table 39: Correlation matrix on the five disciplines versus the laissez-faire leadership dimension

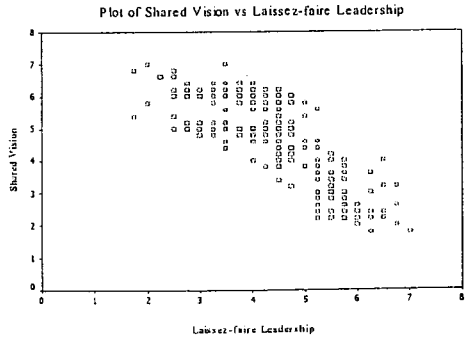
Discipline	LF
Personal Mastery	- 0.876*
Mental Model	- 0.879*
Shared Vision	- 0.823*
Team Learning	- 0.881*
Systems Thinking	- 0.865*
Overall Learning Organisation Score	- 0.917*

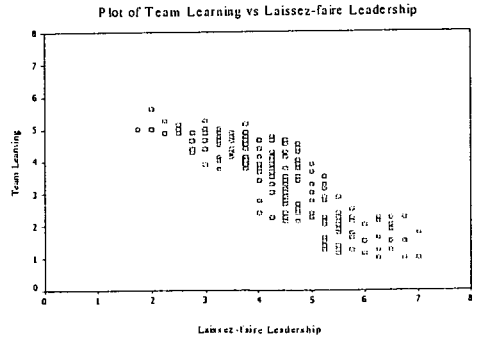
* Correlation is significant at the 1% level (2-tailed)

The resulting correlation coefficients are negative and significant at the 1% level. All the values exceed the absolute magnitude of 0.8, indicating that the display of learning organisation characteristics as well as the practice of each discipline is negatively but very strongly related to laissez-faire leadership. The correlation is strongest between laissez-faire leadership and team learning (r = -0.881), followed by mental model (r = -0.879), personal mastery (r = -0.876), systems thinking (r = -0.865) and shared vision (r = -0.823). The scatterplots on laissez-faire leadership versus each of the five disciplines are provided in figure 3 (pp.116-117).









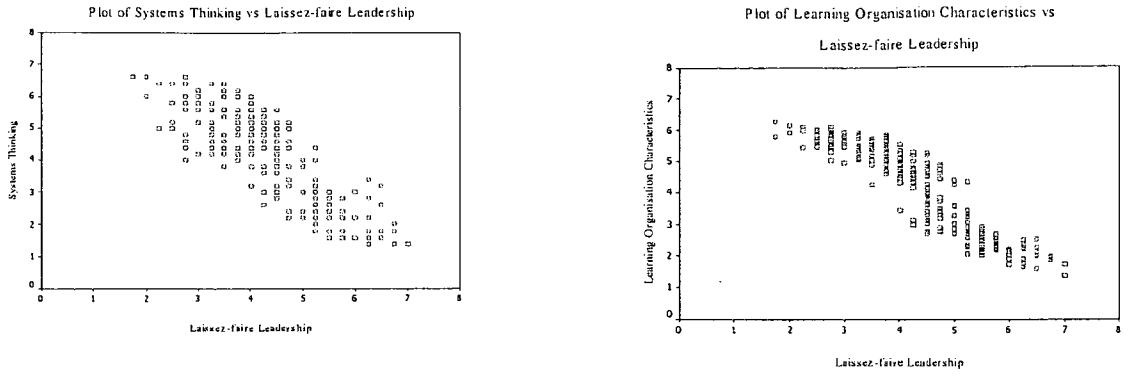


Figure 3: Scatterplots of laissez-faire leadership versus the five disciplines

The scatterplots verify that the relationship between laissez-faire leadership and each of the five disciplines is negative and roughly linear. Similar to the case of transformational leadership, the linearity here is also very strong with the points clustering closely together along a straight line. Therefore laissez-faire leadership is also an influential predictor of the display of learning organisation characteristics, and of the practice of each discipline. Increase in principals' laissez-faire leadership behaviours significantly reduces schools' tendency to behave like the learning organisation.

4.6 Findings for Question Four

Research question four asks: "Which variables exert the greatest overall influence on schools' display of learning organisation characteristics?" A multiple regression model was developed to examine how well each of the independent variables predicted schools' display of learning organisation characteristics. According to Tate (1998), the use of multiple regression model

> "allows the inclusion of multiple independent variables (IVs) in the same model for an outcome. The use of multiple IVs provides statistical control in the establishment of the unique effect of each IV on the outcome, a concept central in any attempt to make casual inferences with correlational data ... Additional IVs, if correctly chosen, will increase the proportion of validity of the outcome which is explained by the model, which in turn results in decreased error variability and improved precision of prediction" (p.68).

4.6.1 Development of a Multiple Regression Model

A preliminary model of multiple regression was designed which included the display of learning organisation characteristics as the dependent variable, and the followings as independent variables: transformational leadership, transactional leadership, laissez-

faire leadership, staff size, school history, period of current principalship and school type. For the purpose of model development, all the variables were treated as interval variables, including school type where primary and secondary schools were assigned the values of 0 and 1 respectively. Figure 4 shows the scatterplot matrix on the relationship between each of the independent variables and the dependent variable.

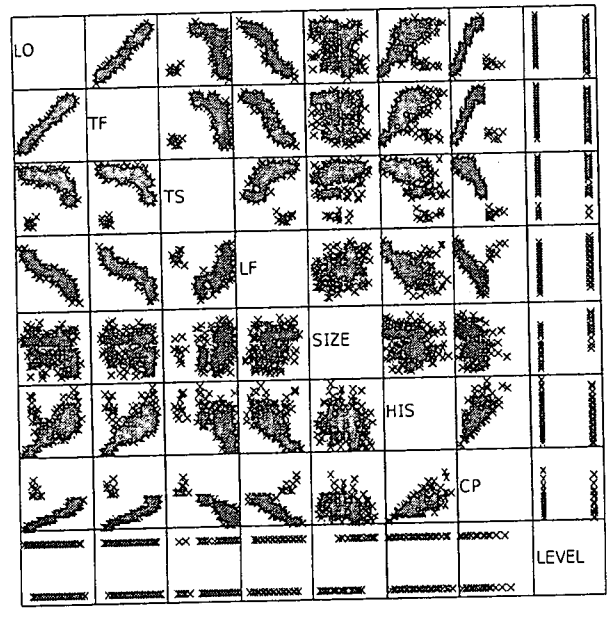


Figure 4: Scatterplot matrix on each of the independent variables versus the dependent variable

Each cell in the above matrix represents the relationship between any pair of the variables. For example, the fourth cell in the first row shows the relationship between learning organisation characteristics (LO) and laissez-faire leadership (LF); the fifth cell in the second row gives the relationship between transformational leadership (TF) and staff size (SIZE), etc. The matrix indicates that when the effects of all the variables are pulled together, the display of learning organisation characteristics has a strongly positive relationship with transformational leadership, and a roughly linear and positive relationship with period of current principalship (CP). Its relationship with laissez-faire leadership is negative and roughly linear. On the other hand, the effects of transactional leadership (TS), staff size (SIZE), school history (HIS) and school type (LEVEL) on the display of learning organisation characteristics are much less apparent in comparison. Further analysis was performed to determine whether these relatively less influential variables should be included in the regression model.

Stepwise regression was used to identify the best model which should incorporate the appropriate predictor variables for explaining the variation of learning organisation characteristics in schools. Hierarchical entry of independent variables was performed where the variable having the highest statistical significant correlation with the dependent variable was entered first to extract its effect. The regression solution was then gradually built up by adding in the effects of the next and other variables. The critical p values used to control entry into and removal from the regression model were 0.05 and 0.1 respectively. As new variables were entered into the model, the original variables as well as the new one were retested for significance in the expanded model. The procedure continued until no additional significant independent variables could be added. Table 40 provides the statistics for the resulting sub-models.

Table 40: Sub-models of regression development

Sub-model	Coefficient of Determination, R^2	Adjusted R^2	Standard Error of Regression	Change in R^2	Change in Regression Statistic	Significance, p
1	0.951	0.951	0.298	0.951	5144.821	< 0.01
2	0.956	0.956	0.281	0.006	33.465	< 0.01
3	0.958	0.957	0.277	0.002	9.523	< 0.01
4	0.959	0.958	0.275	0.001	5.519	< 0.05
5	0.959	0.959	0.273	0.001	4.922	< 0.05

Notes (13)

It can be seen that even if transformational leadership is considered as the only independent variable in the model (as in sub-model 1), 95.1% (change in R^2) of the variation in learning organisation characteristics can already been explained. Adding in laissez-faire leadership (as in sub-model 2) increases the model's ability to explain variation by 0.6%. The incorporation of additional independent variables continues until the p value of the resulting change exceeds 0.05. The best-fit model (sub-model 5) was found to include transformational leadership, laissez-faire leadership, period of current principalship, transactional leadership and staff size as the independent variables, with transformational leadership being the most influential predictor.

Notes (13):
Sub-model 1 includes the constant term and transformational leadership
Sub-model 2 includes all the items in sub-model 1 and laissez-faire leadership
Sub-model 3 includes all the items in sub-model 2 and period of current principalship
Sub-model 4 includes all the items in sub-model 3 and transactional leadership
Sub-model 5 includes all the items in sub-model 4 and staff size

Although both school history and school type have previously been found to exert significant effect on the display of learning organisation characteristics when they are considered as standalone variables, such effect becomes negligible in comparison when all the independent variables are pulled together. With school history and school type being excluded from the final best-fit model, the resulting regression line becomes:

$$E(LO) = 0.771 + 0.805 \times TF - 0.196 \times LF + 0.040 \times CP + 0.082 \times TS - 0.004 \times SIZE$$

($R^2 = 0.960$) where E(LO) is the expected average score on overall learning organisation characteristics given the values of the five independent variables in the model. All the coefficient estimates are significant at the 5% level, with R^2 at a very high value of 0.96. That is, the five independent variables of transformational leadership, laissez-faire leadership, period of current principalship, transactional leadership and staff size together can account for 96% of the variation in schools' learning organisation characteristics. In particular, transformational leadership exerts the highest positive effect on the display of learning organisation characteristics, with an expected increase of 0.805 unit of the latter for every point increase in the former. The effect by period of current principalship is also positive but much weaker. Each increased year of service by the current principal raises the LO score of a school by 0.04 unit.

Previous scatterplots show that transactional leadership has a weakly negative effect on the practice of the five disciplines when considered as a standalone independent variable. However, within the regression model, it demonstrates an overall weakly positive effect. This indicates that transactional leadership may be a weak predictor of the display of learning organisation characteristics, and of the practice of each discipline. Moreover, transactional leadership appears to be more similar to transformational leadership than to laissez-faire leadership, which reduces schools' capability to resemble a learning organisation. For each point increase in laissez-faire leadership, there is a corresponding decrease of 0.196 unit in overall learning organisation score. Similar negative effect is exerted by staff size, although such effect is much weaker, with each additional staff accounting for 0.004 unit decrease in a school's LO score.

4.6.2 Residual Analysis

Residual analysis was performed to check if there existed any serious outliers or influential points in the sample data, and that the above model did violate any regression assumptions. A close examination of the studentized residuals was first carried out to check for the presence of potential outliers (extreme cases) which could seriously bias the results by pulling or pushing the regression line in a particular direction. Figures 5 and 6 show the scatterplots of the studentized residuals and Cook's distances of the sample observations respectively.

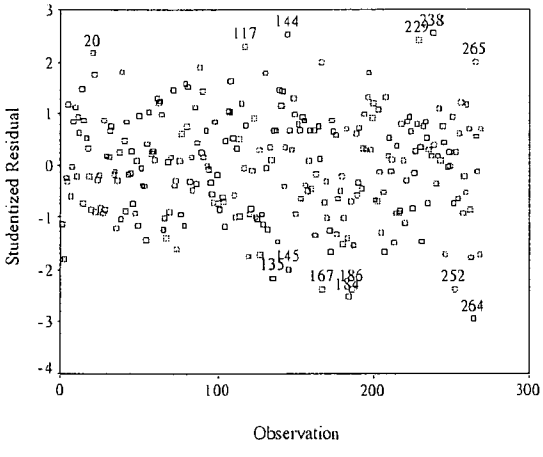


Figure 5: Studentized residuals of the sample observations

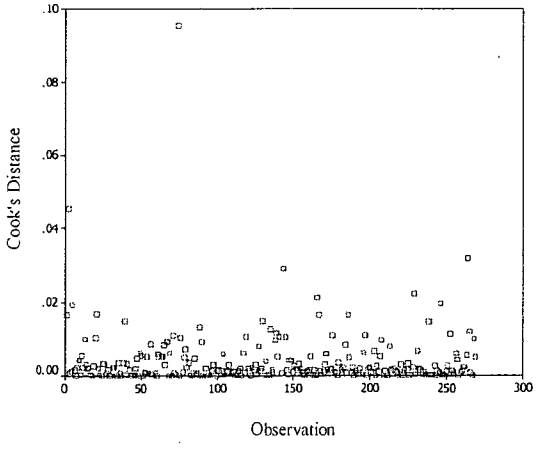


Figure 6: Cook's Distances of the sample observations

It can be seen from figure 5 that no observations have an absolute studentized residual value which exceeds 3, so there are no serious outliers (Tate, 1998). Figure 6 also reveals that no influential points exist in the data set, since all the sample observations have a Cook's distance which is much lower than the threshold level of 0.894, the 50%th quartile of $F_{6, 263}$ (McDonald, 2002).

Regarding the assumptions for multiple linear regression, visual inspection of the scatterplot on the model residuals versus the predicted outcomes (figure 7) suggests no serious violation of the regression assumption of correct fit, as shown by the band of points approximately centred about the horizontal axis. The same applies to the constant variance assumption as indicated by the roughly equal width over the range of predicted learning organisation scores.

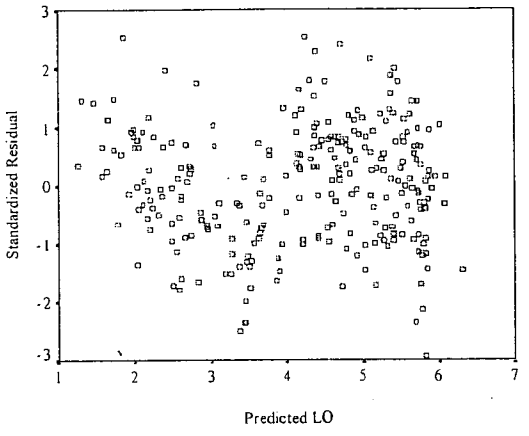


Figure 7: Scatterplot of model residual versus predicted LO

The assumption of normality is also maintained, as shown in Figure 8 which displays a roughly normal distribution of the model residuals. Moreover, plotting the observed cumulative distribution of the residuals with the expected distribution gives an approximate straight line, as shown in figure 9. This confirms that the two distributions are similar, and suggests that no violation of the normality assumption has occurred.

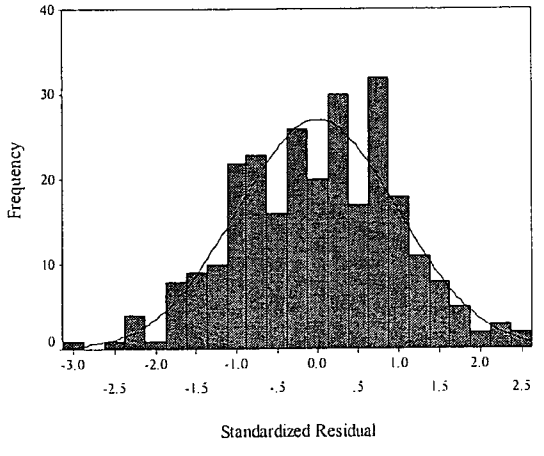


Figure 8: Histogram of standardized residuals

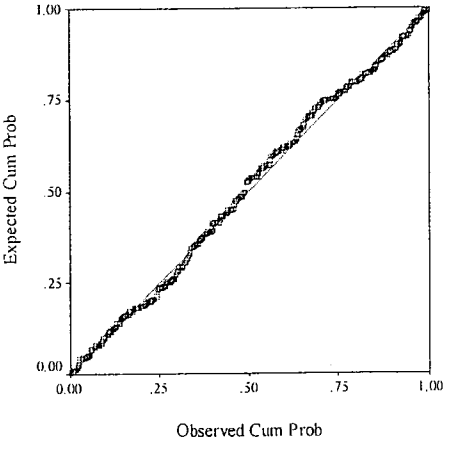


Figure 9: Normal P-P plot of regression standardized residuals

4.7 Findings for Question Five

Research question five asks: "What leadership attributes and behaviours of school principals are important in fostering the practice of personal mastery, mental model, shared vision, team learning and systems thinking in schools?" Previous findings have shown that transformational leadership exerts strong and positive influence on schools' display of learning organisation characteristics. Over 95% of the variation in learning

organisation characteristics can be explained by the factor of transformational leadership alone. To identify those important leadership attributes and behaviours which could facilitate the practice of the five disciplines in schools, the mean scores of the twenty transformational leadership items on the School Leadership Questionnaire (SLQ) were correlated with the mean scores of the five learning organisation disciplines. Tables 41 gives the resulting correlation matrix.

Table 41: Correlation matrix of transformational leadership items on the SLQ versus the five disciplines

Transformational Leadership Dimension	Item on the SLQ	Personal Mastery	Mental Model	Shared Vision	Team Learning	Systems Thinking	Overall Learning Organisation Score
Idealised Influence (Attributed)	1	0.818*	0.781*	0.783*	0.811*	0.792*	0.842*
	2	0.768*	0.729*	0.730*	0.757*	0.738*	0.787*
	3	0.719*	0.701*	0.677*	0.736*	0.712*	0.749*
	4	0.769*	0.681*	0.696*	0.722*	0.689*	0.750*
Idealised Influence (Behaviour)	5	0.798*	0.773*	0.782*	0.817*	0.772*	0.833*
	6	0.565*	0.543*	0.535*	0.578*	0.596*	0.595*
	7	0.698*	0.634*	0.633*	0.676*	0.656*	0.696*
	8	0.842*	0.801*	0.836*	0.850*	0.822*	0.876*
Inspirational Motivation	9	0.753*	0.781*	0.743*	0.805*	0.768*	0.815*
	10	0.617*	0.609*	0.564*	0.611*	0.607*	0.638*
	11	0.619*	0.636*	0.578*	0.628*	0.605*	0.651*
	12	0.787*	0.804*	0.749*	0.785*	0.793*	0.831*
Intellectual Stimulation	13	0.651*	0.723*	0.546*	0.672*	0.653*	0.693*
	14	0.563*	0.606*	0.514*	0.590*	0.562*	0.603*
	15	0.503*	0.482*	0.451*	0.513*	0.485*	0.514*
	16	0.757*	0.815*	0.733*	0.790*	0.770*	0.821*
Individualised Consideration	17	0.804*	0.802*	0.745*	0.812*	0.799*	0.840*
	18	0.637*	0.610*	0.593*	0.616*	0.605*	0.648*
	19	0.514*	0.533*	0.473*	0.506*	0.502*	0.538*
	20	0.820*	0.825*	0.778*	0.831*	0.818*	0.863*

* Correlation is significant at the 1% level (2-tailed)

All the resulting Pearson's correlation coefficients (r) are positive and significant at the 1% level, indicating that each of the twenty attributes/behaviours of transformational leadership is significant in promoting the practice of the five disciplines in schools. The correlations are in general high, with over half exceeding the magnitude of 0.7, and over 20% of them higher than 0.8. A list of leadership attributes/behaviours identified as

powerful determinants ($r > 0.7$) to promote the practice of the five disciplines are provided in table 42.

Table 42: Important leadership attributes/behaviours which promote the practice of the five disciplines

Leadership Attribute/Behaviour	PM	MM	SV	TL	ST	LO
Idealised Influence (Attributed):						
Instils pride in others for being associated with him/her.	✓	✓	✓	✓	✓	✓
Goes beyond self-interest for the good of all in the school.	✓	✓	✓	✓	✓	✓
Acts in ways that build others' respect for him/her.	✓	✓		✓	✓	✓
Displays a sense of power and confidence.	✓			✓		✓
Idealised Influence (Behaviour):						
Talks about his/her most important values and beliefs.	✓	✓	✓	✓	✓	✓
Emphasises the importance of having a collective sense of mission that is shared by all in the school.	✓	✓	✓	✓	✓	✓
Inspirational Motivation:						
Talks optimistically about the future of the school.	✓	✓	✓	✓	✓	✓
Expresses confidence that goals will be achieved.	✓	✓	✓	✓	✓	✓
Intellectual Stimulation:						
Suggests new ways of looking at how to complete assignments.	✓	✓	✓	✓	✓	✓
Re-examines critical assumptions to question whether they are appropriate for different situations.		✓				
Individualised Consideration:						
Spends time teaching and coaching others.	✓	✓	✓	✓	✓	✓
Helps individuals in the school to develop their strengths.	✓	✓	✓	✓	✓	✓

4.8 Summary of Survey Findings

Findings obtained from the survey were based on quantitative analysis of the data collected using the School Leadership Questionnaire (SLQ) and the Learning School Assessment (LSA). Reliability tests and factor analysis performed have pointed to the strong internal consistency of the data and high reliability of the two research instruments in measuring schools' leadership and display of learning organisation characteristics. Important findings which help answer the research questions are summarised below.

What prevalent leadership styles are adopted by school principals in Hong Kong?

Overall, school principals in Hong Kong adopt transactional leadership most frequently, followed by transformational leadership. Only a small percentage of them favour

laissez-faire leadership. Within transactional leadership, the majority of school principals display active management-by-exception more often than other transactional behaviours. With respect to transformational leadership, idealised influence (behaviour) is practiced most often, while inspirational motivation and intellectual stimulation are least practiced.

What is the relationship between leadership style and school type?

Secondary school principals are more inclined to adopt transactional leadership, while primary school principals practice transformational leadership more often. Secondary school principals also have a stronger tendency to adopt laissez-faire leadership than their primary counterpart. Within the group of primary schools, principals are equally likely to adopt transformational and transactional leadership, but laissez-faire leadership is less favoured. Within the group of secondary schools, principals tend to favour transactional leadership, followed by laissez-faire leadership, while transformational leadership is least practiced.

What is the relationship between leadership style and period of current principalship?

There is a moderately positive relationship between period of current principalship and transformational leadership. Longer-serving principals are more likely to adopt transformational leadership. Transactional and laissez-faire leadership display a strongly and moderately negative relationship with period of current principalship respectively. That is, newer principals are more likely to adopt transactional and laissez-faire leadership. Among the three leadership styles, transactional leadership is most strongly affected by the period of current principalship. Within group analyses further confirm that principals who have served their current school for 10 years or less favour transactional leadership more, while those who have served for 11 years or longer tend to practice transformational leadership.

To what extent do schools in Hong Kong display characteristics of the learning organisation, as measured by evidence of practicing the five disciplines?

An average school in Hong Kong displays learning organisation characteristics (or resembles the ideal learning organisation) to a moderate extent. Schools have the strongest tendency to adopt personal mastery and shared vision which are practiced to a moderate extent. Mental model and team learning, which are given the lowest priority,

are only practiced to some extent.

What is the relationship between the display of learning organisation characteristics and school type?

Primary schools in general exhibits learning organisation characteristics to a greater extent than secondary schools. They also have a stronger tendency or capability to practice each of the five disciplines compared with secondary schools.

What is the relationship between the display of learning organisation characteristics and staff size?

There is a very weak and negative relationship between staff size and each of the five disciplines. An increase of one staff leads to a decrease in mean score for personal mastery, mental model, shared vision, team learning, systems thinking as well as overall learning organisation characteristics. The strongest relationship occurs between staff size and mental model by comparison. Overall, staff size is not an important factor in influencing the practice of the five disciplines in schools.

What is the relationship between the display of learning organisation characteristics and school history?

The relationship between school history and four of the disciplines is moderately positive, but weakly positive in the case of shared vision. An additional year of history helps a school to practice the five disciplines and exhibit overall learning organisation characteristics to a greater extent. School history is a moderate predictor for most of the disciplines. Its influence on overall learning organisation characteristics is the strongest compared with that on individual disciplines.

What is the relationship between the display of learning organisation characteristics and period of current principalship?

Period of current principalship exerts a moderate influence on most of the disciplines but a weak influence on shared vision. Its impact on mental model is the strongest by comparison. An additional year of leadership by the current principal improves a school's capability to practice the five disciplines and exhibit overall learning organisation characteristics.

What is the relationship between leadership style and the display of learning organisation characteristics, as measured by evidence of practicing the five disciplines?

The relationship between transformational leadership and each of the five disciplines is strongly positive. The strong linearity suggests that transformational leadership is an important predictor of the display of learning organisation characteristics, and of the practice of each discipline. Increase in principals' transformational leadership behaviours significantly enhances schools' capability to resemble the learning organisation. The relationship between laissez-faire leadership and each of the five disciplines is very strong but negative. Thus laissez-faire leadership is also an influential predictor of the display of learning organisation characteristics, and of the practice of each discipline. Increase in principals' laissez-faire leadership behaviours significantly reduces schools' tendency to behave like a learning organisation. Transactional leadership, when considered as a standalone independent variable, relates weakly and negatively with each of the five disciplines. It appears to be a weak predictor of the display of learning organisation characteristics, and of the practice of each discipline. Increase in principals' transactional leadership behaviours may diminish schools' capability to show learning organisation characteristics, but such effect may not be obvious.

Which variables exert the greatest overall influence on schools' display of learning organisation characteristics?

The resulting best-fit model indicates that only transformational leadership, laissez-faire leadership, period of current principalship, transactional leadership and staff size should be retained as independent variables. The best-fit regression line is:

$$E(LO) = 0.771 + 0.805 \times TF - 0.196 \times LF + 0.040 \times CP + 0.082 \times TS - 0.004 \times SIZE$$

($R^2 = 0.960$) where E(LO) is the expected average score on overall learning organisation characteristics given the values of the five independent variables in the model. The five independent variables together account for 96% of the variation in schools' learning organisation characteristics, with transformational leadership exerting the highest positive effect (95% of the variation can be explained by transformational leadership alone). The effect by period of current principalship is also positive but much weaker. Within the overall regression model, the effect by transactional leadership is also found

to be weakly positive. On the other hand, the model shows that laissez-faire leadership reduces schools' capability to resemble a learning organisation. Similar negative effect is exerted by staff size, although to a much lower extent.

What leadership attributes and behaviours of school principals are important in fostering the practice of the five disciplines?

Attributes/behaviours identified as powerful determinants for promoting the practice of the five disciplines in schools are associated with the five dimensions of transformational leadership. These attributes/behaviours include the school principal:

- In idealised influence (attributed): instilling pride in others for being associated with him/her, going beyond self-interest for the good of all in the school, acting in ways that build others' respect for him/her, and displaying a sense of power and confidence.
- In idealised influence (behaviour): talking about his/her most important values and beliefs, and emphasising the importance of having a collective sense of mission that is shared by all in the school.
- In inspirational motivation: talking optimistically about the future of the school, and expressing confidence that goals will be achieved.
- In intellectual stimulation: suggesting new ways of looking at how to complete assignments, and re-examining critical assumptions to question whether they are appropriate for different situations.
- In individualised consideration: spending time teaching and coaching others, and helping individuals in the school to develop their strengths.

Chapter 5: Data Analysis and Findings - Interview

This chapter describes the techniques used in analysing qualitative data obtained from the interviews and presents the relevant findings. The interview data serve a significant purpose to provide triangulation through supporting the quantitative section of the study, enrich the overall findings and enable the researcher to gain a more in-depth understanding of unclear or significant issues.

5.1 Analysis of Interview Data

After a preliminary analysis of the survey data, five respondents who had indicated willingness to be interviewed on their questionnaires were selected for individual interview. Selection was based on covering the three leadership styles which were most favoured by different school principals, and including schools which displayed the characteristics of the learning organisation to various extents. A list of questions (refer to Appendix 2) were asked in order to explore how leadership attributes and behaviours of principals affected the practice of each of the five disciplines in schools.

Content analysis of the interview data was performed manually with the assistance of the software Microsoft Excel. A coding system was established based on the 29 items of the LSA and 36 items of the SLQ. Each interview transcript was first read through completely to gain an overall direction of its meaning. Focusing on the corresponding interview question, it was then read for the second time in order to extract contents that were relevant to the items of the LSA and SLQ. For example, if an excerpt was about the allocation of resources to support professional development, then it was coded as LSA4. If it was related to helping staff develop their own strengths and expertise, it was coded as SLQ20. The linkage between a LSA code and a SLQ code was recorded, and the frequency of occurrence (from different respondents) for each code was also counted. In order to ensure reliability, only those items (LSA or SLQ) which were evidenced in at least two schools as described by the interviewees were included in the findings.

5.2 Background of the Interviewees

Table 43 provides the brief background of the five interviewees.

Table 43: Characteristics of the five interviewees

Interviewee	School	School Principal	School Type	Average Scores on the SLQ	Average LO Score on the LSA	Other Characteristics
TA	A	PA	Primary	TF: 6.5 TS: 4.08 LF: 2	4.69	SIZE = 43 CP = 13 years HIS = 18 years
TB	B	PB	Primary	TF: 6.4 TS: 3.83 LF: 3.5	4.50	SIZE = 55 CP = 12 years HIS = 22 years
TC	C	PC	Secondary	TF: 6.3 TS: 3.75 LF: 2.75	4.67	SIZE = 63 CP = 13 years HIS = 25 years
TD	D	PD	Secondary	TF: 3.3 TS: 6.67 LF: 5.25	2.19	SIZE = 53 CP = 5 years HIS = 5 years
TE	E	PE	Secondary	TF: 2 TS: 6.17 LF: 6.75	1.56	SIZE = 44 CP = 2 years HIS = 2 years

Teacher TA comes from a primary school which has 43 staff and a history of 18 years, and is headed by PA who has been principal of the school for 13 years. TA has served her school for 11 years and is the head of the English Department. As perceived by her, PA frequently adopts transformational leadership style (TF = 6.5), displays transactional behaviours moderately (TS = 4.08) and laissez-faire leadership once in a while (LF = 2). School A as a whole exhibits learning organisation characteristics to a moderate extent (LO = 4.69).

TB is a young Mathematics teacher who has only two years of teaching experience. He joined school B two years ago after graduating from the university. His principal PB adopts transformational leadership more than other leadership styles (TF = 6.4). School B shows moderate capability of resembling a learning organisation (LO = 4.50).

TC is a senior teacher who has served as vice principal in school C for 9 years. Before joining the school she worked for the Education Department in the government for 5

years. Besides teaching History, her work also involves some administrative duties. Her school principal PC displays transformational leadership behaviours more often than other leadership behaviours (TF = 6.3). According to her, school C displays learning organisation characteristics to a moderate extent (LO = 4.67).

TD teaches Chemistry in school D and has been working there since its establishment. His principal PD adopts transactional leadership frequently (TS = 6.67) as his most practiced leadership style. School D shows learning organisation characteristics to a slight extent (LO = 2.19).

TE is a Geography teacher who has over 15 years of teaching experience. He joined school E two years ago when it was founded. As the head of the Humanities Department, he is responsible for some administrative work besides teaching. His principal PE is a typical laissez-faire leader (LF = 6.75) who also practices transactional leadership frequently (TS = 6.17). School E scores very low in learning organisation characteristics (LO = 1.56).

5.3 Findings for Interview Question One

Interview question one asks: "In your opinion, how can a school principal promote learning and professional development in staff? Please illustrate with some examples from your school". This question aims at exploring how personal mastery is practiced in schools in Hong Kong, and how principals' attributes and behaviours influence the implementation of this discipline.

Findings obtained are consistent with the description of learning organisation characteristics covered on the LSA, particularly items 2, 3, 4 and 6 which are related to the practice of personal mastery. The associated transformational leadership behaviours are found to correspond with the SLQ items 3, 5, 17, 18, 19 and 20. Table 44 summarises the learning organisation characteristics and transformational leadership behaviours described by interviewees. Their associations with items on the LSA and SLQ are also provided.

Table 44: Findings related to the practice of personal mastery in selected schools

Learning Organisation Characteristics	LSA Items	Transformational Leadership Behaviours	SLQ Items
◆ Allocation of sufficient resources to support professional development - Provision of sufficient funding - Provision of time and reduction of teachers' workload (particularly administrative duties)	4	◆ Helps teachers develop their own strengths and expertise ◆ Earns teachers' respect	20 3
◆ Provision of relevant training opportunities - A wide range of training opportunities both inside and outside the school available for teachers - Teachers are directed to appropriate training courses based on their expertise, roles, interests and promotion prerequisites - Training opportunities are extended to all, including administrative staff	3	◆ Considers individual teachers as having different needs and aspirations ◆ Helps teachers develop their strengths and professional expertise ◆ Repeatedly expresses important value and belief for continuous professional learning	19 20 5
◆ Encouragement of critical examination of current practices and professional improvement - Development of a better understanding and skills of effective teaching - Teachers are reminded of the value of quality teaching in bringing about positive student outcomes - Sharing sessions and workshops are organised for teachers to explore issues and discuss concerns related to teaching - Provision of constructive feedback to teachers	2	◆ Places a high priority in maintaining a professional teaching standard in the school, and reminds teachers of such importance ◆ Takes an active role in instructional leadership, and spends time coaching and mentoring teachers ◆ Earns respect by being gentle and caring	5 17 3
◆ A high level of job satisfaction - Assignment of duties based on teachers' abilities and needs - A high level of trust and support for teachers to perform their duties - Provision of new job challenges - A positive and caring principal-teacher relationship - Flexibility is allowed for teachers to exercise their own style of practice	6	◆ Treats teachers as individuals rather than as members of a group ◆ Considers teachers' different needs and aspirations, and cares for them individually ◆ Earns respect for caring and trusting staff	18 19 3

The following sections provide selected extracts which describe the findings in more details.

5.3.1 Allocation of Sufficient Resources to Support Professional Development

Most interviewees have expressed that support by principals through the provision of sufficient resources is critical in promoting teachers' professional growth and development. Financial assistance is perceived to be one of the most significant factors in influencing teachers' willingness to enrol in training courses, as TE explains:

> "Of course we know it's important to constantly upgrade ourselves and learn new things, but most training courses are expensive. Our principal never really requires or forces us to go for training ... A few times when those who went to seminars and workshops asked if they could have part of the course fees reimbursed, she didn't support them ... I think she really should review the school's policy on funding teacher training and private study. Ideally the school should fund job-related training and skills development for all interested staff, even if such training has no immediate relevance to their roles. This is particularly the case when teachers' role has been increasingly diversified under educational reforms in recent years. Students, parents, and even the community place a much higher expectation on us nowadays, and teachers need better preparation".

In the case of school A, the support and resources offered by PA greatly facilitates his teachers to develop their own strengths and builds their respect for him.

> "He always encourages us to attend seminars, workshops and training courses which are useful for developing our own expertise. Every year he sets up a subsidy scheme of $50,000 to support teacher training. The funding is offered on the basis of priorities and training categories. It provides travel allowance and reimburses part or full amount of the course fees. If courses are directly relevant and beneficial to teachers' job, they would be partially or fully subsidised. Teachers in our school really appreciate such arrangement. We feel greatly supported, and a lot of us have taken the initiative to enrol in a good number of training events to further our own professional growth. We don't even mind going for training on Saturdays or during holidays. If a course is held during weekdays, we would swap lessons with our colleagues to avoid missing out any classes. The principal reassures us that if the school could work out a time table to accommodate our absence, our training needs would be catered for as much as possible. This is a very kind gesture of him. The way he shows such great concern for our professional development makes us respect him even more" (TA).

Time availability is also mentioned by interviewees as important in affecting teachers' commitment to professional development.

"I think teachers need continuous learning in order to enhance self-capacity for the work they are doing. But we often have no time to learn and develop ourselves ... The workload here is very demanding. A 20-hour teaching load may not seem heavy on the surface. But if the time for preparation and marking is included, if the time spent on the numerous administrative duties, meetings, student counselling and extra-curricular activities is also counted, then the workload becomes profound even for the most capable teacher ... Even if very good training opportunities are available, we're too exhausted to attend. The value of the best professional learning activities would be reduced to a minimum" (TD).

Reducing teachers' workload is believed to be crucial in order to allow room for professional development, as TC points out:

"One thing that principals could do to help teachers is to reduce their workload. Teachers should not be held responsible for so many things. We need time to learn and explore new things ... Fortunately our school principal saw this need. He was far-sighted enough to put forward an objective to reduce teachers' unnecessary workload in our staff development plan last year. He even took a further step to employ an administrative officer to take over some administrative duties from teachers. Teachers in our school really appreciate his understanding, we're now more positive and active towards professional development".

5.3.2 Provision of Relevant Training Opportunities

Directing teachers towards relevant training opportunities is cited as another important aspect of promoting personal mastery in schools. This requires the principal to consider individual staff as having different needs and aspirations, and to help them develop their own strengths.

"Our principal has established a staff development committee that updates and promotes learning events on an ongoing basis. A wide range of training opportunities both inside and outside the school are available to meet teachers' individual needs and preferences. Internal training programmes are set in line with the needs of the schools, and teachers' opinions and feedback are very much entertained. Programmes arranged so far were useful and of a wide variety, including presenting sex education to students, counselling, information technology, higher-order-thinking skills, demonstration of new equipment and school facilities, within-subject collaboration, etc. Exchange tours to Shanghai, Guangdong, Shenzhen and Singapore were also arranged for us to share with and learn from teachers from other regions and culture. News clippings were circulated among to draw our attention to educational issues ... To save our time in finding the right information, relevant training details are directed to us based on our different expertise, roles, interests and promotion prerequisites. We are encouraged to attend courses that are useful to us to further develop our own strengths and

professional interests ... A lot of us are very grateful that the principal is able to take care of our different needs and aspirations" (TB).

Positive outcome is similarly found in school A, where the principal repeatedly expresses his value and belief for continuous professional learning, and extends relevant training opportunities to all, including administrative staff.

> "The principal always talks about the value of professional learning for everyone, not just for teachers. Even administrative staff in our school are given training opportunities. These courses range from how to organise big school events such as the Open Day to environmental protection skills such as minimising water and air pollution in the school ... The principal sets himself as a good example of continuous learning. He always keeps himself posted on the latest educational trends. He constantly talks about his responsibility to help the school improve under the new challenges of educational reforms. So whenever he could spare the time he would attend relevant talks and seminars. This year he has gone to five or six already. He's very eager to learn new things, especially skills and knowledge that can improve his work or facilitate the development of the school" (TA).

5.3.3 Encouragement of Critical Examination of Current Practices and Professional Improvement

Interviewees indicate that one of the most important objectives of professional development should be to help teachers examine their current practice and improve on their teaching. TD elaborates:

> "The major role of teachers is teaching, so professional development in whatever form should enable teachers to develop a better understanding and skills of effective teaching. Principals should help teachers understand how the new educational policies would affect their practice, and how teachers could keep on improving while facing internal and external changes".

Teachers in school B are frequently reminded of the value of quality teaching in bringing about positive student outcomes. Department heads are requested by the principal to organise sharing sessions for teachers teaching similar subjects to discuss issues and concerns related to teaching. Such arrangement has provided valuable enrichment to teachers.

> "Although sharing sessions are not organised frequently, I really find them very useful. I've learned a lot from other teachers. Hearing others' success and problems makes me examine my own practice and seek improvement more often ... It's very important that we take the initiative to look critically at what we're doing and to identify value conflicts and

> weaknesses in our teaching ... Our principal places a high priority in maintaining a professional teaching standard in the school, and she's talked about that in many occasions. You could see that she really expects us to become a self-critical and professional teaching community" (TB).

According to some interviewees, professional development would be more effective if the principal takes an active role in instructional leadership, and spends time coaching and mentoring staff.

> "Our principal places much emphasis in coaching new teachers in particular. He would take time to share with them individually on teaching methodologies and classroom management skills ... Once he organised a staff development workshop in which we were guided to discuss about innovative teaching methodologies. He started by presenting a new teaching model and encouraged us to give feedback and contribute ideas. Different opinions were raised, and eventually we arrived at some agreed principles for possible implementation of the model in our school. A pilot run of the teaching model was then carried out in a few selected classes, with very encouraging results ... We had a few similar workshops afterwards and teachers found them really enlightening" (TC).

Effective coaching and mentoring from the principal also involves providing constructive feedback to teachers, as TB states:

> "I would say she's a very patient and understanding principal. She looks at the exercise books and test papers that we've marked but never gives negative comments ... If she sees something wrong, she would come to us very gently and suggest another way to go about it. Her feedback is always constructive. She would say things like "would it be better if?" and make you feel that you haven't done anything wrong though there's room for improvement. She's very considerate and tends to empathise with others a lot". PA similarly earns a lot of respect from his teachers for being a gentle and caring mentor. "Even if he hears something about a teacher not doing too well, he won't confront the teacher directly. He very seldom uses a didactic tone to lecture anybody. He would however seek an opportunity to share with the teacher how he or she could do things differently ... He's like a mentor to every staff rather than a boss. We respect him a lot for giving constructive feedback and guiding us along" (TA).

5.3.4 A High Level of Job Satisfaction

A high level of job satisfaction can be fostered when principals treat their staff as individuals rather than as members of a group, and make an effort to cater for their different needs and aspirations. TB shares how his principal does this through assigning

duties based on teachers' abilities and needs:

> "The way she delegates duties to teachers reflects how observant and insightful a leader she is. She knows quite well our strengths and weaknesses, and makes allowances for us. She's good at exploring our talents and putting them to use. For example, with teachers who are enthusiastic and creative in heading new projects, she puts them in positions that require innovation and creativity. As far as possible, she gives us trust and support in carrying out our duties ... Most of us have high job satisfaction and are very happy working in the school".

Providing new job challenges to staff according to their expertise and aspiration also motivates them to improve professionally, as demonstrated by PC.

> "Our school normally takes in Band One/Two students [high achievers]. But I remember for one year, the Education Department allocated 100 very weak [Band Four and Five] students from the Kowloon area to us. It was impossible to group them with our existing students due to the big academic gap. So for that year, remedial classes for English Language, Chinese Language and Mathematics were tailor-made for these newcomers. Our principal was able to assign the most experienced teachers and those who were interested in remedial teaching to be the class teachers and subject teachers ... The arrangement worked well, since their professional expertise and personal belief in remedial teaching strongly motivated these teachers to help the weak students learn more effectively. Those who involved were all very excited and satisfied about the results" (TC).

Individual consideration is considered essential in maintaining a positive principal-teacher relationship which boosts teachers' morale.

> "Whenever a teacher experiences some difficulties with work, the principal would try to figure out the problem and help the teacher out. She's understanding, supportive and willing to spend time counselling teachers who have difficulties ... A couple of times when teachers sought help from her regarding the heavy workload they were carrying. She really tried her best to meet their needs, for example, by rearranging the duties so that these teachers got temporary relief ... The way she considers our individual situations makes us feel that we're important to the school" (TB).

Allowing flexibility for teachers to exercise their own style of practice is cited by a few interviewees as another significant aspect of professional development.

> "The principal gives us a free hand to pursue our goals, and quite a lot of autonomy to do things in our own style. We don't feel that our hands are tied ... For new teachers whose educational objectives are different from his, the principal doesn't insist that those teachers change. He's quite accommodating and allows teachers to exercise their personal styles as

long as students gain benefit during the process. I think this is important since teachers have different beliefs and characteristics, they should follow their own path of professional growth" (TC).

It is found that principals who place a high level of trust in teachers not only earn the latter's respect, but also foster a strong sense of belonging and job satisfaction among teachers. Regarding principals doing classroom observations and inspecting teachers' work, TA says:

> "Our principal has the habit of observing each new teacher once as a supportive gesture. He would follow up closely and give constructive feedback to the teacher for improvement, so I believe such classroom observation is beneficial to new teachers in particular ... We don't have exercise book inspection at all. The principal trusts that we'll do our job well ... We're expected to do our best without being reminded or checked on. I think that's good because he gives us the feeling that we're professionally dedicated individuals ... He doesn't give direct instructions but lets the department heads take charge. He listens more than he tells people what to do. We respect him because we feel that he trusts and respects us. We enjoy working with him and have a strong sense of belonging to the school".

TE believes that teachers would perform better if principals put more trust in them.

> "Classroom observations should not be done too often because teachers would feel that they're being watched, or that the principal doesn't trust their abilities to teach. I think most teachers would perform better if they're given the trust to exercise their personal style of practice ... Our principal doesn't do any classroom observation or other forms of checking at all. But in my opinion she's too hands-off and not doing enough to supervise us. She's too loose in letting teachers do whatever they like. As a result of her perfunctory attitude, some teachers aren't performing their duties properly ... I believe it's one thing to let people exercise their personal style, but a different thing when you let them do whatever they like, so they become lazy and irresponsible".

5.4 Findings for Interview Question Two

Interview question two asks: "In your opinion, how can a school principal help staff to be open to diverse perspectives and challenging ideas, and to accept new possibilities or different ways of thinking? Please illustrate with some examples from your school". This question aims at exploring issues related to the development of a positive mental model in the school setting, and the role of principals in fostering such development.

Findings obtained are consistent with the description of learning organisation characteristics covered on the LSA, particularly items 7, 8, 9, 10 and 11 which are related to the practice of mental model. The associated transformational leadership behaviours are found to correspond with the SLQ items 4, 12, 13, 14, 15 and 16. Table 45 summarises these findings. summarises the learning organisation characteristics and transformational leadership behaviours described by interviewees. Their associations with items on the LSA and SLQ are also provided.

Table 45: Findings related to the practice of mental model in selected schools

Learning Organisation Characteristics	LSA Items	Transformational Leadership Behaviours	SLQ Items
◆ Willingness to change and openness to new ideas - Creativity is supported - Allocation of resources to try out innovative ideas	7	◆ Encourages creativity and suggests new ways of doing things	16
◆ Freedom to experiment and take risk - Introduction of and resources allocated for new projects	8	◆ Encourage teachers to critically re-examine assumptions to question whether they are appropriate for different situations	13
		◆ Allows room and flexibility for teachers to try out new ways of completing tasks	16
		◆ Expresses confidence in teachers	12
◆ Mistakes viewed as learning opportunities - A positive attitude/right tone established in the school - No fear of failure in the midst of barriers and disappointments	9	◆ Focuses on the bright side of things and inspires teachers to do the same	4
		◆ Guides teachers to look at problems from different angles	15
◆ Encouragement of reflective dialogue -Teachers are encouraged to reflect on their practice and engage in professional dialogue - Teachers show excitement to learn new practice and a strong passion for teaching - A psychologically safe environment where teachers are free to question their beliefs and discuss what is happening in the school	10	◆ Encourages teachers to rethink values and develop new conceptions of teaching	13
◆ Acceptance of multiple viewpoints - Diversified opinions are welcomed - Consensus building and conflict management are evident	11	◆ Seeks different perspectives when solving problems	14

The following sections provide selected extracts which describe the findings in more details.

5.4.1 Willingness to Change and Openness to New Ideas

It is believed that principals who encourage creativity and suggest new ways of doing things can foster in staff the willingness to change and openness to new ideas, as TC points out:

> "Our principal has really worked to promote academic progress in the school. Instead of pushing students to study hard, he constantly suggests to teachers mind-inspirational activities and projects in order to develop students' creative thinking. For example, to change teachers' belief of perceiving learning as the simple acquisition of knowledge and students as passive receivers of knowledge, the Quality Learning Scheme, the Reading Enhancement Scheme and the Cultural Exchange Programmes were launched by the principal in 2003. He believes that experimentation and high expectations could bring a strong impact on school improvement ... Creativity is supported here and resources are also allocated to try out innovative ideas from teachers. Because of this teachers are now more willing to change traditional teaching method in favour of better ways to help students learn".

All of the interviewees agree that being ready to change is important for survival especially in an era of endless educational reforms. However, changing staff's mental model can be difficult, especially in the case of older teachers.

> "It's extremely hard to ask senior teachers to change, since they're so accustomed to traditional ways of teaching and administration. Mental laziness is also a big obstacle" (TD). Most interviewees feel that their principal has not done enough to facilitate a culture of innovation and openness. "I can't think of any innovative programs we've ever had in our school. There're only routine duties for us to perform. The implementation of so called new ideas is usually for punishing mistakes. For example, we've been required to sign in every morning since two months ago just because a few people were found to be habitually late for work ... It would be better if the principal could use her creativity in establishing more innovative programmes for helping the whole school improve and move forward" (TE).

5.4.2 Freedom to Experiment and Take Risk

Interviewees have cited the freedom to experiment and take risk as another critical prerequisite in developing a positive mental model. According to them this can only be achieved when principals encourage teachers to critically re-examine assumptions to question whether they are appropriate for different situations, and allow the trying out

of new ways for completing assignments.

> "Improvement only takes place when people constantly re-examine their current practice to see if it's still appropriate for different situations. Teachers should be given the room and flexibility to try out new ways of completing tasks ... Changing teachers' mind depends on the principal supporting experimentation and intelligent risk-taking in the school, and looking at every venture as a learning experience" (TD).

Introducing and allocating resources for new projects is mentioned as an effective way principals can adopt to support experimentation in schools.

> "When the principal knew that our junior grade students were weak in their language ability, he tried out a new arrangement by inviting a few English native speakers from the British Council to conduct oral classes for students every Saturday ... He also supported teachers' idea of organising special events and weekly quiz on English Language. A set of questions were put up on the bulletin board in the playground and students were encouraged to join the quiz. The first three who got the right answers won the prizes. This was not a one or two-week exercise but carried on the whole year round. The activity was effective in making students understand that they could improve if they tried hard enough and that learning was not a part-time process" (TA).

Extra efforts on the part of teachers can be motivated by principals who express confidence in teachers, and make them feel rewarded for taking the risk in trying out new ideas.

> "It's the principal's philosophy that every time a new programme is tried out, it should be given time to mature. Even if something is not running too well, she doesn't give pressure to the teacher heading the programme, but would see if extra resources could be allocated to solve the problems. If a pilot project is successful, she would be the first to show appreciation. She would then take action to ensure that a large-scale programme is launched to benefit the whole school ... Because our efforts are valued and our innovative ideas allowed to be tried out, we're motivated to continue even when obstacles are encountered" (TB).

5.4.3 Mistakes Viewed as Learning Opportunities

Most interviewees have expressed that cultivating a positive and open mentality in teachers requires principals to uphold a positive attitude and establish a right tone in the school.

> "I think principals often do not realise the extent to which they could affect the mentality of teachers. If they could focus on the bright side of things and inspire their teachers to do the same, a cheerful working environment for all would be built. Principals who constantly harp on the negative aspects of life only dampen the spirit of their staff. Teachers

working under such principals only learn to be fearful and dare not try things out. When this occurs the school would never step beyond its existing state of performance, and might even get worse" (TE).

According to the interviewees, displaying a positive attitude involves principals viewing mistakes as part of the learning process and opportunities for growth. Those who can guide teachers to look at problems from different angles are able to dispel fear of failure in the midst of barriers and disappointments, and evoke heightened efforts from teachers.

> "Our principal doesn't believe in failure at all. When targets are not met, she would still uphold a positive attitude and encourage us on how much has been achieved. For example, we started a project to work on improving students' academic standard about two years ago. Some results were achieved but things were still far from being perfect. The principal kept reminding us that by working harder on improving students' learning attitudes, there was hope for the school. She reviewed the situation with us, guided us to look into the reasons and suggested trying out the project again in a different way. She's always positive in handling mishaps, and doesn't give up easily ... Even when things don't work out and mistakes are found, she seldom expresses disappointment with us or blame us. She would try to find out what goes wrong and encourage us to do things differently so as not to repeat the same mistakes in the future" (TB).

5.4.4 Encouragement of Reflective Dialogue

A favourable mental model can be built when teachers are encouraged to reflect on their practice and engage in professional dialogue with their colleagues, as elaborated by TD:

> "Changing teachers' mind also includes changing their belief in teaching. If improvements are to be made, teachers have to change the way they think about teaching. It's important that teachers are given the time and stimulation to reflect on their current practice. Opportunities to engage in professional dialogue with other colleagues to share their thoughts and feelings are essential. Teachers need to know that they can rethink their values, develop new conceptions of teaching and that they would be helped throughout the process. This kind of support from the principal would provide teachers the excitement to learn new practice and increase their passion for teaching".

It is believed that principals should construct a psychologically safe environment in which teachers are free to question their beliefs and discuss what is happening in the school without threat or embarrassment.

> "Teachers are willing to share, seek or give advice only when there's a sufficient level of trust. They need to know that their colleagues would support them, and that whatever they say would not bring about negative consequences ... There may be openness to participate in certain

meetings, but if such openness doesn't have any impact in freeing teachers' mind and helping them reflect on their own thinking, then it's not real openness. I would say real openness is a characteristic of relationship, which is built on commitment and trust" (TC).

Similar view is held by TE:

"The courage to speak out should be valued. We'll share more if we feel that it's safe to speak out. I've been the department head for the past two years, but I often keep bad feelings to myself since negative consequences might occur to our department if I speak honestly. I'm afraid of negative consequences, I don't want to lose my reputation ... We feel insecure and don't share a lot here. There's little professional dialogue among teachers. That's why you don't see things improving here".

5.4.5 Acceptance of Multiple Viewpoints

The encouragement of multiple viewpoints is considered by some interviewees as significant in bringing tacit beliefs to the surface so that people can explore their differences without defensiveness, and enhancing mutual understanding in the school. To achieve this it is necessary for principals to seek differing perspectives when solving problems or examining important issues.

"I think diversified opinions are normal and sometimes necessary for igniting in-depth discussions so that mutual understanding can be developed in the school. A unanimous voice may not be healthy at all. Since we come from different backgrounds, we may have different opinions ... When various viewpoints are entertained and encouraged, people learn from each other and grow. Better solutions can also be derived if principals seek different perspectives when solving problems" (TD).

However, it is pointed out that the Chinese culture which values seniority and social status may act as a barrier:

"Chinese people often try too hard to maintain harmony and show respect to those in authority. In our school most teachers dare not challenge the principal or other senior teachers, so they don't voice out their different viewpoints ... Constructive changes fail to be implemented because teachers are so used to the principal or department heads telling them what to do" (TE).

Consensus building and conflict management is cited as a vital skill of principals in handling multiple viewpoints effectively.

"Building consensus and managing conflicts is important when principals are faced with different opinions particularly in moving

through change situations ... Our principal is very patient and receptive of others' way of thinking. There were times when I totally lost patience with some teachers who held different views, and yet he remained absolutely cool. He understands that conflicts are inevitable, and that the way to confront them is to deal with them fairly and openly. That's why he always encourages teachers to discuss problems face to face in order to arrive at mutual agreements. Because of his open attitude we've managed to solve many big problems and learn valuable lessons from them ... Instead of destroying relationships, I'd say conflicts have become means to enhance and better relationships in our school" (TA).

5.5 Findings for Interview Question Three

Interview question three asks: "In your opinion, how can a school principal promote a shared vision and create a desired future state? Please illustrate with some examples from your school". Findings obtained are consistent with the description of learning organisation characteristics covered on the LSA, particularly items 12, 13, 14 and 16 which are related to the practice of shared vision. The associated transformational leadership behaviours are found to correspond with the SLQ items 5, 8, 9, 10 and 12. Table 46 summarises summarises the learning organisation characteristics and transformational leadership behaviours described by interviewees. Their associations with items on the LSA and SLQ are also provided.

Table 46: Findings related to the practice of shared vision in selected schools

Learning Organisation Characteristics	LSA Items	Transformational Leadership Behaviours	SLQ Items
◆ A clear understanding of the school vision - Staff are educated regarding the role they should play in realising the school vision	12	◆ Communicates enthusiastically about what needs to be accomplished ◆ Talks frequently about the school's most important values and beliefs	10 5
- Wide participation in establishing the school vision - Teachers work together to translate their own ideas into a shared school theme	13	◆ Emphasises the importance of having a collective sense of mission that is shared by all in the school	8
◆ Commitment of staff to the school vision - Teachers adapt their working patterns in order to achieve the school vision	14	◆ Frequently reminds teachers of the school's most important values ◆ Expresses confidence that goals will be achieved	5 12
◆ Alignment of the curriculum and activities to the school vision - Provision of support through establishing policies and allocating resources	16	◆ Constantly reminds teachers of the school's most important values and beliefs ◆ Is optimistic about the future of the school	5 9

The following sections provide selected extracts which describe the findings in more details.

5.5.1 A Clear Understanding of the School Vision

It is believed that in order to develop in teachers a clear understanding of the school vision and a shared sense of direction, principals should communicate specifically and enthusiastically to their staff about what needs to be accomplished. TA speaks positively of the way her principal has achieved this:

> "When the principal interviews teacher candidates, not only does he assess their educational qualifications, he also makes it clear to them that the school places a strong emphasis on student discipline, and that he expects teachers to be ready to show great care for students. Such belief is reiterated on the New Teachers Induction Day and in the general staff meetings. He constantly reminds us directly and indirectly that giving attention and care to students comes first in the school, and that we're to set good examples for them. For example, if we want students to be punctual, we ourselves should be punctual to begin with ... To communicate his message even clearer, the principal has assigned one teacher per grade to assist the two Discipline Committee members who are in charge of all discipline issues in the school. More student prefects have also been elected. He also pays particular attention to discipline-related details such as the quality of homework, the cleanliness of uniform and the manners of students, etc ... So you see, the focus on discipline and student behaviour is highlighted again and again. I don't think anyone could miss the message. To us the goal of the school is very clear".

Educating staff regarding the role they should play in realising the school vision is an effective way to help them develop a clear understanding of the vision, according to TB:

> "Academic achievement is not the main focus here. Our school vision is to develop students spiritually and emotionally. Being an inspirational leader, the principal has successfully adopted the biblical character of a *shepherd* to help us understand our role. Like a shepherd taking care of his sheep, we're expected to take good care of all our students, including the most defiant ones. A shepherd never gives up to search for a lost sheep, so we should never give up on any student. Teachers who are good shepherds not only care about students' learning, but also their spiritual and emotional growth ... When a religious symbol is used, there may lie the problem of personal interpretation. Teachers who're familiar with the bible would have no problem understanding the imagery. Those who're unfamiliar might find it no more than an empty label. In helping teachers comprehend the school vision, the principal regularly runs workshops to ensure that the role of the shepherd is clear to all the teachers. She herself also sets an example by living the spirit of the shepherd in all aspects of her work".

5.5.2 Wide Participation in Establishing the School Vision

Most interviewees believe that it is insufficient that the school vision be clearly communicated to staff. Wide participation in establishing the school vision should also be allowed. This is only possible with principals who emphasise the importance of having a collective sense of mission that is shared by all in the school.

> "If the vision is to be shared and owned by everyone in the school, not just the principal or a few department heads, then we should all contribute something to the creation of the vision and everyone should have a good understanding of it ... Through encouraging wide participation from staff principals could show their priority in developing a collective sense of mission in the school. If communication is from the top down and we're only told what the school vision is, there will be big problems for sure. If we aren't allowed to participate in developing the school vision, we won't truly believe in it. We may still get our daily tasks done, but there will not be any long-term commitment or sense of belonging to the school" (TE).

Encouraging teachers' participation in establishing the school vision can greatly enhance their commitment, as demonstrated in school A.

> "The school vision was established when the school was founded and has not been changed much. But we do have a different school theme each year which is derived from the vision. What usually occurs is that a workshop or retreat would be organised for teachers to come together and brainstorm ideas regarding the school theme. Based on these ideas a committee consisting of the principal, the department heads and a teacher from each functional group would draft a few themes and submit them to the general staff meeting for approval ... During the staff meeting the principal would act as the facilitator and guide teachers to discuss about the proposed themes, revise them if necessary, and then vote for one to be the school theme of the coming year. I think this kind of arrangement is effective since teachers can work together to translate their own ideas into a shared school theme. When teachers are encouraged to participate, they feel that their contributions are respected and valued, and they tend to have a stronger sense of ownership and commitment to implement the theme" (TA).

5.5.3 Commitment of Staff to the School Vision

It is found that principals who frequently remind their staff of the school's most important values and express confidence that goals would be achieved are more able to reinforce commitment, and encourage staff to adapt their working patterns in order to achieve the school vision. TC describes the situation in her school:

"Our principal takes every opportunity to remind us of the school's goal in arousing students' interest to learn. He constantly talks about this in meetings and staff development workshops. He always encourages us to relate more closely with students and to do a little more for them. But he doesn't only tell us to put the needs of students first, he himself sets a good example by always making decisions based on such belief and upholding the school vision. He also shows confidence in us that we would do our best to achieve the school goals. He's a convincing leader who knows how to get us tuned in to his message ... Teachers in our school are quite aware of placing a top priority on students' benefits. For example, most would try their best to attend in-service training on Saturdays and holidays so as not to disrupt classes. Many don't mind giving extra tutorials to students, or doing extra work to prepare quizzes and games to help students revise ... I'd say the principal has done a good job in getting our buy-in and commitment to the school vision".

Failure of principals to lead staff to identify the school vision and work towards fulfilling it often undermines their commitment, according to TE:

"Our principal doesn't have any cosmic vision for us to aspire to. That creates a problem for us, not know what she really wants us to do. We lack motivation because there's no goal to strive for. I remember the principal warning me even at the job interview that the students here are not of the top calibre and so I shouldn't expect too much from them. There might be some short-term goals that she wants to achieve, but a clear direction is lacking as to what we should do to realise these goals ... Another problem is that she changes focus all the time and requires us to centre our work around her focus. For example, some time ago she had a chance to visit another school. And when she came back, she told us that the principal of that school was making his teachers call up one parent a day to promote home-school relationship. She thought it was a good idea and asked us to do the same thing. Some of my colleagues responded that contacting parents everyday would take a lot of time which they didn't have. However, the principal argued that what was supposed to be a two-minute conversation would definitely not turn into a very lengthy talk. We then insisted that she should try out the idea herself first and share her experience with us. The issue was never brought up again. At other times she would propose weird ideas she has picked up from somewhere and ask us to implement them, but she never tells us what the ultimate goal is and how to achieve it ... There's very little enthusiasm and commitment among us. What vision should we commit to anyway? Besides, how can we increase our commitment when we're confused most of the time and not able to keep up with her?"

5.5.4 Alignment of the Curriculum and Activities to the School Vision

It is believed that principals who constantly remind their staff about the school's most important values and beliefs, and are optimistic about the future of the school tend to ensure that the curriculum and school activities are closely aligned to the vision in order

to fully implement it.

> "The principal constantly reminds us of the importance of our goal to develop students into independent thinkers ... She frequently talks optimistically about it and expresses her confidence that through our concerted efforts in aligning the curriculum and other school activities to the vision, it can be fulfilled and students can gain benefits ... The spirit of the school vision is reinforced through various channels such as the monthly themes in the school calendar, morning assemblies, class teacher periods, orientation day for new students, induction day for new teachers, extra-curricular activities, special school events, etc. Innovative approaches are also adopted by teachers to teach the curriculum in order to guide students to become independent and analytical thinkers" (TB).

Principals' support in terms of establishing policies and allocating resources is also cited to be important in fostering the alignment of activities to the school vision.

> "In our eyes, the principal is an ardent supporter of the school vision ... Our vision of encouraging all-rounded learning is achieved through the provision of a good number of scholarships and cultural exchange programmes. The school's new policies like the Student Merit System, Reading Enhancement Scheme, Big Sisters Scheme, Staff Review and Development are all centred around the objective to provide a positive environment for developing students' abilities to the fullest extent. In addition, the principal's great support to our work and allocation of sufficient resources has motivated us to work together to implement the vision in all aspects of the school life" (TA).

5.6 Findings for Interview Question Four

Interview question four asks: "In your opinion, how can a school principal promote group experiences in collective learning, inquiry and collaboration among staff? Please illustrate with some examples from your school".

Findings obtained are consistent with the description of learning organisation characteristics covered on the LSA, particularly items 17, 18, 19, 22 and 23 which are related to the practice of team learning. The associated transformational leadership behaviours are found to correspond with the SLQ items 2, 3, 8, 15 and 18. Table 47 summarises the learning organisation characteristics and transformational leadership behaviours described by interviewees. Their associations with items on the LSA and SLQ are also provided.

Table 47: Findings related to the practice of team learning in selected schools

Learning Organisation Characteristics	LSA Items	Transformational Leadership Behaviours	SLQ Items
◆ Encouragement of collaboration - Formation of cross-department functional teams which aims at exploring new ways to deal with current problems - Arrangement of cross-subject collaboration and cross-functional activities to enliven the curriculum and arouse students' interest to learn - Team teaching to enhance teaching quality and efficiency	17	◆ Frequently talks about the importance of maintaining a collective sense of mission in the school and adopting a whole-school approach to handle different issues	8
◆ Sharing and professional dialogue among teachers - Organisation of regular informal sharing sessions for teachers to share and solve problems together	18 22	◆ Provides intellectual stimulation by guiding teachers to look at problems from different angles	15
◆ Training opportunities for teams of teachers - Teachers learn to work together to enhance their professional growth - Resources allocated for team building activities	19	◆ Focuses on achieving benefits for the good of all in the school	2
◆ An atmosphere of trust and respect - Communication is candid and open - Strong bonding among teachers who are ready to understand, learn from and collaborate with one another	23	◆ Treats everybody with respect no matter what their position is, and makes them feel that they're highly valued ◆ Earns respect by showing support for and being visible at school activities	18 3

The following sections provide selected extracts which describe the findings in more details.

5.6.1 Encouragement of Collaboration

School structures and principals' support are cited as significant factors in encouraging collaboration among staff. Most collaboration arrangements mentioned are through the formation of cross-department functional teams which aim at exploring new ways to deal with current problems. Often these teams comprise of staff from diverse backgrounds who do not normally have the chance to get together. The opportunity to work together is considered valuable in enhancing effectiveness, fostering better working relationships and giving teachers the confidence to learn from each other. It is also found that principals who emphasise the importance of having a collective sense of mission shared by all in the school tend to promote collaboration among teachers.

TA describes how collaboration is facilitated in her school:

> "Our principal always talks about the importance of maintaining a collective sense of mission in the school and adopting a whole-school approach to handle different issues. He has worked very hard to promote collaboration among different groups and teams, so team work is now prevalent across the whole school. Different committees have been set up, and we've seen how collaboration has enhanced effectiveness and added value to our work ... The School Improvement Committee is one of the most successful. It's made up of members from the Counselling and Discipline Team, the Staff Development Team, the Curriculum Core Team, the School Policy Advisory Team and the School Administration and Management System Team. The work of this committee has successfully led the school in improvement ventures, and changed teachers' value regarding educational reforms".

Cross-subject collaboration is particularly useful in enlivening the curriculum and arousing students' interest to learn, according to TC:

> "We have quite a lot of cross-subject collaboration in the school. For example, the Activities Team joins with the Counselling Team to establish the Big Brother/Sister Scheme, teachers from the Science and Technology Departments co-organise field trips regularly, Technology teachers collaborate with General Studies teachers to teach life skills programs, the Life Education Team works with the Counselling Team to offer sex education and social services programmes. I think the idea of cross-subject collaboration and cross-functional activities is great. It enriches and enlivens the curriculum, and arouses students' interest in learning ... The principal is very supportive. He has set up a coordinator for all the humanities subjects, another for all science subjects and one for all cultural subjects. Their role is to coordinate the teaching and learning of the subjects concerned, and establish common and shared goals for development. This arrangement has greatly facilitated the coordination of team work across different subject areas".

Most interviewees have mentioned team teaching as a vital form of collaboration which can enhance teaching quality and efficiency.

> "Team teaching is one of the strengths in our school. Those who teach the same subject of the same form work together to prepare scheme of work, lesson plans, notes, worksheets, assignments, test and examination papers. Classroom teaching is then conducted by individual teachers. We've experienced many advantages of team teaching. It has enabled us to make consensus on teaching methods, spare time and energy in preparing worksheets and question papers, set the same standard for teaching, establish the same requirements for students, realise teachers' talents better, and promote communication and cooperation among teachers. Through team discussion and division of labour, ideas are

enriched and work efficiency is greatly improved ... The principal has put in much effort in promoting team teaching in the school, particularly in big subject panels. For example, English teachers teaching the same form have common free periods where they can share their ideas and prepare teaching materials together. Regular planning meetings are also organised for different subjects to encourage collaboration in teaching" (TB).

5.6.2 Sharing and Professional Dialogue Among Teachers

All the interviewees agree that team learning can best be realised through sharing and professional dialogue among teachers. Principals are expected to be responsible for providing intellectual stimulation by guiding teachers to look at problems from different angles and engaging them in problem-solving, rethinking and evaluating ideas. Informal sharing sessions are cited as particularly useful in providing opportunities for teachers to engage in professional dialogue which help improve their practice.

"Regular informal sharing sessions are organised in our school for teachers to come together to share and discuss. Each session focuses on a different theme and teachers from various groups are encouraged to participate. Very often the themes are related to improving our professional practice, and we've looked at numerous aspects of classroom practice so far. These include lesson presentation, difficulties encountered by students in learning certain subject matter, innovative teaching methodologies, reinforcing student-centred activities in the classroom, question-asking techniques, and so on. In a recent session we explored the issue of motivation. Teachers were very eager to share their experience, which involved both successful and problematic practice. I was quite surprised when we together came up with a fairly comprehensive list of motivators, most of which I wouldn't have thought of by myself. We not only talked about them, we also planned to put them into practice to see what effects could be achieved ... Most of us have found this kind of informal sharing sessions very valuable. They give us the opportunities to solve problems and learn together, to explore professional issues in depth, and to know each other better. Attending sharing sessions has helped me focus on areas of my own practice which need improvement, notably my classroom management techniques, and how effectively I'm delivering lessons to students. I now share more openly with my colleagues, including those from other curriculum areas ... The principal is very supportive in promoting sharing sessions, some of the sessions are even led by him. He has contributed a lot in offering advice on how to run sharing sessions, and in providing useful materials for stimulating meaningful discussions among us" (TC).

5.6.3 Training Opportunities for Teams of Teachers

According to some of the interviewees, the success of team learning greatly depends on

the school making resources available for learning by teams. It is believed that principals who focus on achieving benefits for the good of all in the school are more willing to help teachers learn to work together in order to enhance their professional growth. TD shares his view on this issue:

> "I think training opportunities for teams to learn together is very important. The school should develop and expand team learning activities where teachers can develop a deeper understanding of each other and learn to work together better. If principals really care about benefiting everybody in the school, not just the students or a few department heads, they should provide more resources to develop stronger teams and enhance professional growth in the school. For example, team building activities should be organised for every teacher to improve their skills on leadership, decision-making, professional dialogue, negotiation, consensus management and meeting management".

TC describes how training opportunities provided to teams in her school have helped teachers work more harmoniously together:

> "We have a lot of team learning activities here. For example, training opportunities are organised for each subject team on task-based learning, how to operate equipment in the multimedia learning centre and the use of PowerPoint in teaching. Through learning together we discover other people's strength and understand their point of view ... Sometimes soft-skills training courses are held which aim at improving our communication and establishing a collaborative relationship within various teams in the school ... These activities have taught us the value of team efforts. I now have a better understanding of my own role in the team, how I could contribute more effectively and how to respond to others' point of view. I'd say we now work together better than before".

5.6.4 An Atmosphere of Trust and Respect

Trust and respect are mentioned by a few interviewees as indispensable preconditions for team learning or collaboration. Candid and open communication is believed to be crucial in building close relationship which is the foundation of effective team work. People are more ready to understand, learn from and collaborate with one another under such a positive atmosphere. According to the interviewees, an atmosphere of trust and respect can only be established in the school when principals treat their staff as important individuals by trusting and respecting them, and act in ways that build staff's respect for them. TB describes the situation in his school:

> "The atmosphere in our school is a warm and pleasant one. Teachers in general have mutual trust and respect for one another. The principal herself has set a good example for us to follow. She treats everybody with respect no matter what their position is. She always makes us feel

> that we're highly valued professionals and an important asset to the school. We too have a lot of respect for her. Because of her positive reinforcement and incessant support, we've established very strong bonding with one another, and are able to communicate openly. This has improved our team work immensely, and we've learned a lot from working together ... New teachers view experienced teachers as role models here. They're impressed by the latter's diligence, zeal in teaching, readiness to do extra work and eagerness to take care of younger teachers. For myself, when I encounter teaching problems, I can easily turn to other members in the same subject panel for help. Their candid advice has enabled me to improve my practice continuously".

Showing support for and being visible at school activities is cited by interviewees as an important way principals can earn respect and trust from teachers, and promote team spirit in the school.

> "I think the strong team spirit in our school is partly achieved by the principal showing support for different activities organised by teachers. When department heads run seminars for teachers, not only does the principal attend the seminars, he also fully participates to experience what it's like to be a learner. He's present at most school functions, regardless of who's running them or for whom they're organised. He shows support and instils confidence by being present. Even though he knows very little about sports, he's present on every Sports Day to check on the discipline of students and the cleanliness of the sports ground when the event is over. When it comes to school functions that he feels more at home with, like the Speech Day or Parents' Day, he would contribute his efforts whole-heartedly. He even goes to the City Hall himself to check the seating arrangement ... The way he shows support and involvement in school activities really causes us to trust and respect him more. Because of his example we're now more aware of the importance of maintaining a strong team spirit by showing mutual support for one another" (TA).

5.7 Findings for Interview Question Five

Interview question five asks: "In your opinion, how can a school principal help staff recognise the connections, relationships and broader impact of their actions as individuals or groups? Please illustrate with some examples from your school". Findings obtained are consistent with the description of learning organisation characteristics covered on the LSA, particularly items 25 and 26 which are related to the practice of systems thinking. The associated transformational leadership behaviours are found to correspond with the SLQ items 2 and 8. Table 48 summarises the learning organisation characteristics and transformational leadership behaviours described by interviewees. Their associations with items on the LSA and SLQ are also provided.

Table 48: Findings related to the practice of systems thinking in selected schools

Learning Organisation Characteristics	LSA Items	Transformational Leadership Behaviours	SLQ Items
◆ Sharing of decision making - Decision making processes are inclusive and allow teacher participation - Teachers are empowered	25	◆ Goes beyond self-interest and is willing to release power ◆ Emphasises the importance of developing a collective sense of mission and ownership shared by all in the school	2 8
◆ Open and reciprocal channels of communication - Opinion box for teachers to express comments and give suggestions - Face-to-face contact with the principal - Connections with parents - Establishment of core teams across levels and departments to improve curriculum coordination	26	◆ Goes beyond self-interest for the good of all in the school	2

The following sections provide selected extracts which describe the findings in more details.

5.7.1 Sharing of Decision Making

Shared decision making is mentioned by most interviewees as significant in connecting people and teams together, enabling the school to function effectively as a whole and boosting teachers' morale through a re-distribution of power. It is believed that in order to achieve this, principals need to go beyond self-interest for the good of all, and emphasise the importance of developing a collective sense of mission and ownership shared by all in the school. TD elaborates his view on shared decision making:

> "If we have more opportunities to participate and share decision making, we'll definitely be more willing to perform and happier to work together. Decision making processes need to be inclusive and allow teacher participation. The school should not start implementing any big project before a collective decision is made. If problems arise during the implementation, we should solve the problems together. Wide participation in decision making can greatly benefit the school by connecting people and teams together as one system operating under a collective mission ... I guess the issue goes back to redistributing power in the school. When teachers feel powerless, they lose morale and won't implement effective changes. Dissonance would quickly develop within the school which become departmentalised ... Sharing decision making with teachers is an effective way to empower them. But in order to do this, principals need to go beyond self-interest and be willing to release power themselves".

TC describes how shared decision making is done effectively in her school:

> "With important issues that may affect the running of the whole school, the principal would invite the participation of all teachers before any major decision is made, for example, whether the school should join the SMI scheme or how many Form Four classes the school should have in the following year. A draft proposal would first be circulated to gather everyone's opinion, followed by an informal discussion session which facilitated brain-storming, idea sharing and evaluation. There's next a more formal staff meeting where the proposal would be accepted, rejected or amended. Opinions gathered would then be brought to the School Council for final decision ... Decision is normally made through consensus. If the issue is controversial, discussion is prolonged to allow sufficient time for consideration before any conclusive remarks are made. When there're conflicts or differences in opinion that really could not be compromised, the principal would guide us to explore the pros and cons of various solutions, and then ask teachers to vote in order to determine what solution to adopt. The principal may emphasise the merits of the solution he's in favour of, but he respects the results even if his view is voted down eventually ... On the whole we're happy about the decision making approach here, because our views are respected. Through this approach school management is made more transparent to us. In addition, a stronger sense of collective mission is also developed since teachers also get to own the rights and accountability of decision making in the school".

5.7.2 Open and Reciprocal Channels of Communication

According to the interviewees, open and reciprocal channels are necessary in order to ensure effective dissemination of information, as well as upward and downward communication among individual staff and different groups. Some of the communication channels perceived to be important include the opinion box, face-to-face contact with the principal, maintaining good connections with parents, and the establishment of core teams.

> "The principal has set up an opinion box through which we're encouraged to contribute suggestions and comments on all aspects of the school practice, particularly related to academic affairs or matters concerning students. Most of our contributions are followed up, some of our ideas are even implemented for continuous school improvement. Seeing how our ideas are valued and our concerns adequately addressed has greatly boosted our morale" (TB).

TA points out the importance of face-to-face contact with the principal:

> "Our principal has worked hard to create opportunities for connecting with individuals here through visits, meetings and emails. He takes a

> strong interest in everyone in the school and always encourages us to contact him for whatever need we have. We feel no difficulty approaching him in person. I myself have spoken to him on an individual basis a few times. When I have a problem, I just go and knock on his door ... When certain teachers have a complaint to lodge, he's always ready to hear them out. He believes that face-to-face contact is the best way to deal with conflicts in an open and truthful way. To encourage us to meet with him, his door is always open. When teachers need to see him, there's no need to make an appointment. As long as he's not occupied with someone or something else, he would see teachers immediately. Even students could ask to see him through the office staff quite easily. We all feel connected with him and respect him ... The principal also spends quite a lot of time keeping in close contact with external stakeholders such as the parents, who are frequently encouraged to meet with him to express their opinions and suggestions. He believes parents have a crucial role in helping us realise our school goals, so he invites them to participate in some of our school improvement projects".

Core teams established across levels and departments in the school not only foster connection among staff, they also help improve curriculum coordination, as TC elaborates:

> "In order to facilitate a more systemic approach to curriculum coordination, core teams are set up by the principal for connecting people together to design school-based integrated curriculum programmes. So far we have core teams created for Language, Arts, Math, Science, Social Studies and Pupil Services. These teams are made up of curriculum experts invited from local universities, the principal, department heads, teachers, and some parents. They meet regularly to review learning processes in selected subject areas and discuss research and educational opportunities for the school. Cross-curricular integrated programmes are also designed which are tailor-made to meet the needs of our students ... I think these core teams not only bring people in touch with one another to accomplish a meaningful mission, they also enable us to better understand others' role in the school and the importance of linking our work together ... to make up the whole".

5.8 The Positive Effects of Transactional Leadership Behaviours

From the interviews with the five selected respondents, it is found that although transformational behaviours strongly facilitate the practice of the five disciplines in schools, most principals - including those who are typical transformational leaders - also demonstrate transactional leadership behaviours which exert similar positive effects on their schools. In particular, behaviours associated with the transactional leadership

dimensions of contingent reward and active management by exception have proved to be powerful influences. Table 49 summaries the transactional leadership behaviours which are found to be influential in enhancing schools' display of certain learning organisation characteristics.

Table 49: Transactional leadership behaviours which foster the display of learning organisation characteristics

Learning Organisation Characteristics	LSA Items	Transactional Leadership Behaviours	SLQ Items
Personal Mastery			
◆ Increased work commitment and higher level of job satisfaction	6	◆ Is ready to assist teachers and open to negotiation about work conditions in exchange for teachers' efforts	21
		◆ Expresses appreciation and recognition for good performance or expectations met	24
◆ Development of clear career goals and motivation to seek continuous improvement	1	◆ Makes clear what teachers can expect to receive when performance targets are achieved	23
◆ Critical examination of current practices and continuous learning for improvement	2	◆ Is ready to provide honest feedback to teachers on how they are faring and to monitor their performance so as to intervene when things go wrong	25
Mental Model			
◆ Willingness of teachers to change their mindset and old ways of doing things	7	◆ Is ready to provide honest feedback to teachers on how they are faring and to monitor their performance so as to intervene when things go wrong	25
Team Learning			
◆ A rich climate of collaboration and mutual support	24	◆ Gives praises to teams and acknowledges team efforts	24

The following sections provide selected extracts which describe the findings in more details.

5.8.1 Contingent Reward

According to the interviewees, principals who are ready to assist teachers and open to negotiation about work conditions in exchange for the latter's efforts can motivate teachers and give them a higher level of job satisfaction.

"Our principal is always ready to assist us with any problem we encounter. For example, sometimes teachers express grievances that too much have been going on in the school and that they have difficulty coping with the pressure of the heavy workload. The principal would examine their time table and if the complaint is indeed justified, she would reduce one or two lessons from their workload or assign others to take on some of their responsibilities. But in return the teachers would be required to demonstrate higher performance in the areas they're focusing their efforts on ... She believes in reaching some mutual agreement when dealing with any problem. We feel that she's fair and willing to listen to our side of the story. The fact that she tries to understand our difficulties and work things out to relieve us really motivates us to be more committed. We enjoy working with her and have a high level of job satisfaction" (TB).

Making clear what teachers can expect to receive when performance targets are achieved is considered to be a significant transactional leadership behaviour which enables teachers to develop clear career goals and motivates them to seek continuous improvement. TD explains:

"When it comes to promoting teachers, the principal is very careful in making decisions. He's quite good at spotting those who're really working hard for the school. He would give those with good potentials extra duties and continue observing them for a long period of time. He doesn't want to promote anyone who only works for a promotion ... A teacher who's worth promoting is, in his opinion, one who's committed to the school, genuine and hard-working. He makes it very clear to us what he expects and what we'll get when performance targets are reached. Promotion is solely based on our performance and contributions to the school. When an opportunity comes along and he feels that a teacher deserves a promotion, he would be most willing to submit the name of the teacher to the Education Department for consideration. He would not hold any teacher back intentionally ... I think he effectively and fairly uses promotion and other benefits as means of motivating us to perform. The way he communicates this openly has certainly helped us develop clear personal career goals and seek to improve ourselves at work".

Expressing appreciation and recognition for good performance or expectations met is cited as another influential leadership behaviour which can enhance teachers' job satisfaction, and promote collaboration and mutual support in the school. TB shares:

"It's extremely important that principals acknowledge openly the contributions made by teachers. We all need and want recognition. In fact, a word of appreciation and praise could boost the spirit of even the most experienced teacher. Our principal seldom lets good performance go unacknowledged. She's very encouraging and shows appreciation frequently and genuinely. She doesn't take good work for granted, and for this we respect her a lot. Sometimes she would highlight in staff

meetings a programme or activity that's well run, and openly thank the teacher-in-charge. She would even give little gifts, like stationery sets, to teachers' children as a token of appreciation for what they have done ... Instead of waiting until the periodic performance appraisal interview held at the end of the year, she's always ready to give brief and sincere praises to us individually when performance is commendable or goals are reached. She also likes to praise teams of teachers and acknowledge the efforts of those contributing silently behind the scene. For example, a note of congratulations may be posted where the teachers sign in to let everybody know a certain event has come through successfully. Her open recognition and praises have greatly enhanced our job satisfaction and motivated us to work harder and perform better. The acknowledgement of team efforts has also encouraged us to collaborate with and support each other".

5.8.2 Active Management-by-Exception

Principals who attend to mistakes and deviations from standards are often ready to provide honest feedback to teachers on how they are faring and to monitor their performance so as to intervene when things go wrong. According to TD, such active management-by-exception behaviour is effective in fostering critical examination of current practices and continuous learning for improvement, and enhancing teachers' willingness to change their mindset and old ways of doing things.

"Not only does the principal give recognition for good performance, he also lets us know when we've not been meeting the expectation of the school or have made any mistakes. He's very honest with us and would point out where he thinks the problem is and how things could have been done differently. He doesn't avoid confrontation, but tries to make what seems to be an unpleasant scenario a sincere and constructive experience. He's usually very gentle when correcting a teacher's behaviour but could be firm and straight forward when that's needed. If there's a good reason for teachers' poor performance or mistakes, he would make them understand that they need to improve, change their mindset, their attitude or old ways of doing things ... To monitor the progress of the school, evaluation meetings after each examination and exercise book inspections would be carried out. The evaluation meetings usually involve all the teachers and reports would be submitted to the principal for his assessment. The exercise book inspections are conducted by the principal, the head of the Academic Committee and the panel heads of the respective departments. The purpose is to make sure that all teachers, especially the new ones, are following the school's standards. For teachers who are doing fine, he would give a few positive comments like "well done" or "fine work". As for those who appear to be a bit perfunctory, he would suggest ways for improvement. But he would not let poor performance go unnoticed. He's a very thorough person. For any form of evaluation, he would give feedback as soon as possible. It's nice he doesn't wait till the end of the year to do that. It's more effective this

way. You can say progress is monitored throughout the year. If something is not working right, corrective actions would be taken immediately ... I think his close monitoring on our progress and performance has to a certain extent stimulated us to critically examine our current practice and seek continuous improvement".

5.9 Summary of Interview Findings

Findings obtained from interviewing the five selected respondents were analysed in order to answer the interview questions which aim at exploring how the five disciplines are practiced in schools in Hong Kong, and the leadership behaviours of principals which influence such practice. The data were categorised based on their relevance to the learning organisation characteristics on the Learning School Assessment (LSA) and the leadership behaviours on the School Leadership Questionnaire (SLQ). Both transformational and transactional leadership behaviours are found to exert positive effects on the capability of schools to display learning organisation characteristics.

Overall, the interview findings show great consistency with, and support the findings obtained from the survey. Descriptions by the interviewees of the situation in their schools have touched on 22 out of the 29 characteristics of the learning school as listed on the Learning School Assessment (LSA). This indicates that schools do practice the five disciplines to some extent, as the survey findings have demonstrated. In terms of the leadership attributes/behaviours which promote the practice of the five disciplines in schools, the two sections of findings have also shown a good degree of consistency, with both pointing to a significant positive influence of transformational attributes/behaviours on schools' display of learning organisation characteristics.

In the case of personal mastery, both the survey and interview findings have identified the following leadership attributes/behaviours of principals which are perceived to exert positive effects on the school: acting in ways that build others' respect, talking about one's most important values and beliefs, spending time teaching and coaching others, and helping individuals in the school to develop their strengths. For the discipline of mental model, the attributes/behaviours which are common to both sections are: suggesting new ways of looking at how to complete assignments, expressing confidence that goals will be achieved, and re-examining critical assumptions to question whether they are appropriate for different situations. To promote the practice of shared vision,

findings from both the survey and interview have suggested that principals need to talk about their most important values and beliefs, emphasise the importance of having a collective sense of mission that is shared by all in the school, talk optimistically about the future of the school, and express confidence that goals will be achieved. With team learning, both quantitative and qualitative findings are again in agreement on the following desirable attributes/behaviours: going beyond self-interest for the good of all in the school, acting in ways that build others' respect, and emphasising the importance of having a collective sense of mission. In terms of systems thinking, the common attributes/behaviours identified are: going beyond self-interest for the good of all in the school, and emphasising the importance of having a collective sense of mission.

Although the survey findings have indicated that transactional leadership is a weak predictor of the display of learning organisation characteristics, analysis of interview data suggests that transactional behaviours associated with the two dimensions of contingent reward and active management-by-exception are beneficial for promoting the practice of the five disciplines in schools. Certain leadership behaviours of contingent reward are found to be particularly effective in enhancing the practice of personal mastery in schools. These include providing others with assistance in exchange for their efforts, making clear what individuals can expect to receive when performance targets are achieved, and expressing satisfaction when others meet expectations. The last type of contingent reward behaviour is also perceived to be beneficial for fostering team learning. Regarding active management-by-exception leadership behaviours, it is found that the practice of both the disciplines of personal mastery and mental model in schools can be enhanced by principals who focus attention on irregularities, mistakes, exceptions and deviations from standards.

Chapter 6: Conclusion and Recommendations

The current study examines the relationship between leadership style of principals and the capability of schools to display learning organisation characteristics. It involves a mass survey participated by 269 teachers from 143 primary and 126 secondary schools in Hong Kong, followed by in-depth interviews with five selected respondents. The research questions are answered mainly based on the analysis of the survey data, while the interview data have provided triangulation and enriched the overall findings. This concluding chapter discusses the major findings of the study, includes implications and recommendations, and suggests further research for continued study.

6.1 Discussion on Major Findings

6.1.1 Leadership Styles Adopted by School Principals in Hong Kong

The findings show that the majority of schools in the sample (around 60%) are led by principals who adopt transactional leadership as their most prevalent style, while a lower population (around 31%) have principals who are transformational leaders. Only a small percentage of them (around 9%) are led by laissez-faire leaders.

The low propensity for transformational leadership echoes with the findings from Yu's (2002) survey on teachers' perception of transformational leadership demonstrated by school principals in Hong Kong. Among the various transformational aspects measured, the highest rated one is "holding high expectation on teachers' professional growth and students' performance". But ratings on all the other aspects are very low. It is also found that principals do not demonstrate positive role models for teachers to follow. Efforts made by them to share vision and establish school goals are insufficient. They do not take adequate initiative to change teachers' value, beliefs and attitude towards the implementation of change. Many of them do not know how to provide intellectual stimulation, and their support for teachers are inconsistent. Cheng (2000) has similarly observed that in implementing school-based curriculum reform, principals in Hong Kong lack direct involvement and leadership skills.

The prevalence for a more directive, dominating and action-oriented type of leadership (transactional leadership) as shown in the current study is consistent with the claim by

Westwood and Chan (1992) that the leadership styles and behaviours found in Asian organisations are unique and differ from those in Western tradition. They are often characterised by *headship* (instead of leadership) being maintained through an organised system and not by members' spontaneous recognition of the leader's contribution to group progress, and by a wide social gap between members and the leader who strives to maintain this social distance. Such culture of headship also applies to the educational bureaucracies and principals in Hong Kong, where the highly centralised education system has produced a top-down model of hierarchical administration within schools. At the system level, principals traditionally report to the Education and Manpower Bureau only. Within the school, the typical principal is the ultimate decision-maker to whom all other school personnel report. Under this one-direction administration, decision-making, information transaction and communication go through from one level to another. It is thus not surprising to find from the current study that more principals tend to employ transactional leadership to motivate their staff through position, power, perks and politics.

The results also reveal that secondary school principals are more inclined to adopt transactional leadership, while primary school principals practice transformational leadership more often. Secondary school principals also have a stronger tendency to adopt laissez-faire leadership than their primary counterpart. The average staff sizes for primary and secondary schools in the data sample are 40 and 57 respectively. Primary schools in Hong Kong in general have a simpler organisational structure, as well as a smaller staff and student population than secondary schools. As group dynamics and the interaction between the leader and staff can be influenced by the organisational size, it may be more feasible for primary school principals to adopt a human-oriented leadership style which focuses on people contact and meaningful relationships. Findings from Varaki (2003) also show that school level can be an influential factor on leadership style. But in the case of Iran, primary school principals tend to adopt a more task-oriented style while secondary school principals favour a more relationship-oriented style.

Longer-serving principals are found to rely more on transformational leadership while newer principals tend to adopt transactional and laissez-faire leadership. This shows that principals may change their leadership style as time passes. The possible explanation is

that after serving in their school for a certain period of time, principals would have successfully established their power and known their staff better. The closer interactivity with staff makes it easier for principals to shift to a more relationship-focused leadership style, enabling them to empower rather than manipulate others in order to fulfil the school goals. Since principals working in government schools or schools run by large religious groups are sometimes transferred or rotated from one school to another due to central operational needs, it is more difficult for these principals to establish long-term relationship with their staff, build a strong power base or develop transformational leadership skills in their work. This further explains the relatively high percentage of principals in Hong Kong adopting transactional leadership.

6.1.2 Extent of Hong Kong Schools Displaying Learning Organisation Characteristics

An average school in Hong Kong is found to resemble the ideal learning organisation to a moderate extent. The average score is 4.17 which slightly exceeds the midpoint of 4. This finding reflects the difficulty for traditional schools to advance into learning organisations, as similarly pointed out by other writers (Aspinwall, 1998; Isaacson and Bamburgh, 1992; Senge et al, 2000; Seymour and Arnott, 1994).

The results indicate that schools in Hong Kong have the strongest tendency to adopt personal mastery and shared vision, while the disciplines of mental model and team learning are given little attention. Both Elmore et al (1996) and Fullan and Stiegelbauer (1991) have argued that practicing the discipline of mental model in schools is extremely difficult. Even though mandated changes are adopted, most school principals and teachers are reluctant to change their attitudes, values and existing practice.

Team learning is likewise a challenging discipline. Since educators are accustomed to defining learning as an individual phenomenon, and traditional staff development programs only support the learning of individuals, the process of learning how to learn collectively is unfamiliar to school people. Most schools have no time, structural arrangement or cultural norms to promote team learning. Findings of the current study confirm those obtained by Yu and Yeung (2003) whose survey shows that a collaborative culture is lacking in schools in Hong Kong. Collaborative practices such

as planning together and sharing of professional experiences or pedagogical innovations are rare. Principals are found to be poor instructional leaders. They fail to provide the necessary organisational structures to enable risk-taking and teacher collaboration. It is argued that the goals of school-based management cannot be achieved unless and until a collaborative and learning culture is successfully established in schools.

The current study also finds that primary schools in general exhibits learning organisation characteristics to a greater extent than secondary schools. They have a stronger tendency or capability to practice each of the five disciplines compared with secondary schools. In this context, the finding agrees with Boyer (1995) who asserts that primary schools with their simpler organisational structure have the potential to become places where everyone works together to promote learning. It is likewise consistent with the argument by Senge et al (2000) that secondary schools tend to be highly fragmented organisations which inhibit learning. On the other hand, the present study contradicts the finding by Karsten et al (2000) that "the organisational culture of primary schools have tended to support teacher individuality and autonomy" (p.154).

A weak and negative relationship is found between staff size and the display of learning organisation characteristics, although staff size does not appear to be an important factor in influencing the practice of the five disciplines in schools. Since human interaction and the establishment of meaningful relationships can be influenced by organisational size, positive group dynamics and a collective learning culture have a better chance of being developed in an organisation with a smaller staff population.

School history and period of current principalship are both shown to be moderate predictors for the display of learning organisation characteristics. Schools with a longer history tend to practice the five disciplines to a greater extent. The positive effect could be partly contributed by organisational commitment of teachers which grows with increasing teaching experience, as observed by Kadyschuk (1997). A longer period of leadership by the current principal also correlates with a higher learning organisation score for schools. The possible explanation is that building a learning school is not a quick fix but a long, continuous process through which the principal empowers the staff and develops their collective knowledge, skills and experience.

6.1.3 Relationship Between Leadership Style and the Display of Learning Organisation Characteristics

The findings show that transformational leadership is a predominant predictor of the practice of the five disciplines, while the influence by transactional leadership is much weaker. Increase in principals' transformational leadership behaviours significantly enhances schools' capability to resemble the learning organisation. This result confirms the argument in the empirical literature on school management that transformational leadership is positively associated with principals' effectiveness and consistent with a learning orientation of teachers (Leithwood et al, 1998a, 1998b). Within the context of leadership literature, there is also evidence that transformational leadership influences organisational outcomes and positively correlates with overall organisational performance (Howell and Avolio, 1993; Humphreys and Einstein, 2003).

Laissez-faire leadership is also found to be an influential predictor. But increase in principals' laissez-faire leadership behaviours significantly reduces schools' tendency to behave like a learning organisation. This finding concurs with the conclusion of Barnett et al (2001) that laissez-faire leadership undermines the potential for fostering the capacities teachers need to respond positively to educational reforms, or building an organisational culture necessary to restructure schools.

6.1.4 Overall Effect of Each Independent Variable on Schools' Display of Learning Organisation Characteristics

The resulting best-fit regression model is found to include the independent variables of transformational leadership (TF), laissez-faire leadership (LF), period of current principalship (CP), transactional leadership (TS) and staff size (SIZE). These variables together form the regression line $E(LO) = 0.771 + 0.805 \times TF - 0.196 \times LF + 0.040 \times CP + 0.082 \times TS - 0.004 \times SIZE$ ($R^2 = 0.960$), where E(LO) is the expected average score on overall learning organisation characteristics. Despite the inclusion of the five variables in the model, it is found that transformational leadership alone accounts for 95% of the variation in learning organisation characteristics. This supports the findings by Leithwood (1994) that transformational leadership is the most important factor in creating conditions which foster the individual and collective learning of teachers in schools.

6.1.5 Leadership Attributes and Behaviours Which Foster the Practice of the Five Disciplines in Schools

Attributes/behaviours identified as powerful determinants for promoting the practice of the five disciplines in schools are mainly associated with the five dimensions of transformational leadership, including idealised influence (attribute), idealised influence (behaviour), inspirational motivation, intellectual stimulation and individualised consideration. This finding is consistent with Barnett et al (2001) who uncover existing relationship between transformational behaviours of school principals and aspects of organisational learning culture.

The survey findings reveal that transactional leadership exerts a weak effect on the display of learning organisation characteristics, and has little bearing on the practice of the five disciplines in schools. According to Avolio and Bass (1998), the transactional leadership approach is marginally effective and only captures a portion of the leader-follower relationship. The study by Howell and Avolio (1993) on business organisations actually shows a negative relationship between transactional leadership and organisational performance.

On the other hand, from the interviews with the five selected respondents, it is found that principals who are typical transformational leaders also demonstrate transactional leadership behaviours which can foster the practice of the five disciplines in their schools. In particular, behaviours associated with the transactional leadership dimensions of contingent reward and active management-by-exception have proved to exert positive influences on schools. This is expected since contingent reward involves more active and positive leadership behaviours. Such finding is supported by existing literature which finds contingent reward to be positively related to subordinate satisfaction with their jobs, their overall situations and productivity in business organisations. It is believed that contingent reward offers a positive reciprocal relationship between leaders and staff members who exchange ideas and skills in the pursuit of goals and individual needs (Brown and Dodd, 1999; Hatter and Bass, 1988). Regarding the effectiveness of transactional leadership as a whole, Shamir (1995) has argued that effective transactional behaviours can build trust, dependability and

perceptions of consistency among followers, which are some of the important components for strengthening organisational performance.

The findings show that unlike contingent reward and active management-by-exception, the transactional leadership dimension of passive management-by-exception which involves the failure of principals to take action until things go wrong has a negative influence on the practice of the five disciplines in schools. Similarly, principals who adopt laissez-faire behaviours inhibit schools' display of learning organisation characteristics. These results match the finding from other research that passive management-by-exception and laissez-faire leadership are unhelpful in enhancing teacher outcomes or the organisational learning culture of schools (Leithwood et al, 1996). Within the business field, it is also believed that leaders who work intentionally to avoid involvement or confrontation and minimise personal interactions damage organisational goodwill and frustrate hard-working staff toward building successful learning organisations (Coad and Berry, 1998; Sarros and Santora, 2001).

Overall, the findings support the argument in the literature that successful transformational leaders also need the ability to effectively manage and transact with subordinates in the day-to-day mundane events. Even the most awe-inspiring transformational leaders may fail to accomplish their intended mission without transactional leadership skills (Avolio and Bass, 1998). According to Bass and Avolio (2000), it is possible that transformational and transactional leadership practices are interwoven in reality.

6.2 Implications and Recommendations

Implications and recommendations for policy and practice include adopting transformational leadership in schools, promoting the practice of the disciplines of team learning and mental model, providing leadership training for school principals, and building teachers' capability.

6.2.1 Adopting Transformational Leadership in Schools

Findings of the current study strongly support the importance of leadership for building learning schools where teachers and other stakeholders can expand their capacity to

learn continuously. In other words, principals are responsible for promoting organisational learning in their school. Transformational leadership is found to be highly associated with schools' practice of the five disciplines. These results suggest that principals should adopt transformational leadership in order to enhance schools' capability to advance into successful learning organisations. The existing bureaucratic governance system in most schools in Hong Kong is not favourable for the adoption of transformational leadership. A more democratic and collaborative system should thus be created where the role of the principal is to cultivate an interdependent relationship with the teachers and to facilitate meaningful interactions among them. In order to make the best use of all members in the school, teachers and other stakeholders should be provided with information, opportunities to be involved in decision making, and access to resources that can fulfil their roles and functions. A re-distribution of power is necessary and teachers should be empowered to practice the five disciplines in all aspects of their work.

The interview findings show that the learning process in schools can be enhanced by advocating a transformational principalship combined with contingent reward. According to Fullan (2001), such principalship approach would involve accountability, incentive and capacity building. Accountability coupled with the agreement on roles and responsibilities between the principal and teachers is an essential factor. It ensures that teachers and other members in the school are involved in the process of thinking, planning and implementation for achieving educational changes. The provision of incentive is another important factor. According to Fullan (2001), this can be provided in two aspects: pressure and support. Teachers should be given moral support as well as suitable infrastructure before they can effectively practice the five disciplines. On the other hand, principals should also be creative in designing powerful tools to be used as pressure to drive changes. Capacity building is indispensable if changes have to last. It involves principals "helping teachers and communities to respond effectively to changes that come their way and to improve continuously as a lifelong obligation so that standards will keep rising all the time" (Fullan, 2001, p.234).

6.2.2 Promoting the Practice of Team Learning in Schools

The findings show that the disciplines of team learning and mental model are least practiced in schools in Hong Kong. So principals need to encourage the practice of

these two disciplines. In terms of team learning, Rosenholtz (1989) emphasises that the development of professional learning communities in schools requires a workplace for teachers that fosters collaboration, and encourages the sharing of ideas, solutions to problems and learning about educational practice. She also finds that effective team learning involves the principal demonstrating strong instructional leadership.

To promote the development of learning communities and a collaborative culture in their school, and to demonstrate effective instructional leadership, principals in Hong Kong need to attend to the following leadership responsibilities. Firstly, they need to lead through shared vision and collective commitment rather than rules and authority. A learning community, by definition, is a group of people working together toward a shared vision. Therefore, building a collective commitment to act in ways that advance that vision is one of the most important responsibilities of principals in learning communities. They need to guide teachers to reach consensus on the questions: "what do we want our school to become" and "what are we prepared to do to get it there". They should then exercise a form of loose-tight leadership. They can be loose on the particular strategies teachers might use to advance the vision, but passionately tight on upholding the vision and demanding adherence to the collective commitment. So rather than emphasising rules or resorting to authority to control the work of teachers, principals should provide their staff with a sense of direction by promoting and protecting a shared vision and collective commitment.

Secondly, principals need to provide necessary structural support. Simply inviting teachers to collaborate will not automatically create a collaborative culture. Principals must develop structures and strategies that systematically embed collaboration into the daily life of the school. Because a significant factor to team learning is time, in re-organising the school structure, principals should design schedules that facilitate teachers' collaboration in teams, and allow time for their collective inquiries, dialogues and reflective discussions about instructional strategies, ideas, student progress and community building. Principals also need to help each team in the school develop effective working relationships by establishing protocols to clarify the purpose of collaboration and the products that should be generated as a result of teachers working together, and by guiding each team to identify specific and measurable performance goals.

Thirdly, as the instructional leader principals are responsible for helping their school focus on issues of teaching and learning. It is found that in schools that are most successful in creating professional learning communities, principals have focused on posing questions which convey their priorities and point staff in the right direction, rather than dictating solutions (Louis et al, 1996b). Therefore, in order to develop teachers' capacity to function as a learning community, principals in Hong Kong should engage them in professional dialogue on the following key questions: Is there a shared vision for the school we are trying to create? What commitment must each of us demonstrate for our vision to be realised? What goals should we establish this year to move closer to the school we desire? Are we clear on what students should know and be able to do for each grade level, course and unit of instruction? What strategies are in place for responding to students who have difficulties in achieving the intended learning? Have we clarified the criteria we will use in assessing student work? How do we know if we are becoming more effective as a learning school? What evidence is important to us?

6.2.3 Promoting the Practice of Mental Model in Schools

Based on the findings, the discipline of mental model is also insufficiently practiced in schools in Hong Kong. How people think and their values make the most difference when developing the learning organisation. It is the thoughts of principals and teachers that define what they are, where they are going, and what they will become. If schools are to become learning organisations, then the traditional views held by principals and teachers have to change. Their views of their responsibilities need to centre on "building a learning organisation where people continually expand their capabilities to understand complexity, clarify vision, and improve shared mental models" (Senge, 1990a, p.2). Principals need to be responsible for the learning of teachers, as teachers in turn are responsible for the learning of their students.

To promote the practice of the discipline of mental model, principals need to nurture an open environment in the school and install confidence in teachers. This involves empowering teachers to change old ways of doing things, allowing them room to experiment and take risk, and encouraging them to constantly reflect on their own professional practice. Mistakes should be viewed as opportunities for growth, and

multiple viewpoints and productive debates should be encouraged.

Developing a shared mental model in schools that helps members to be ready for and open to changes requires principals to clarify the main issues of change in which the school will be engaged, and ensure that everyone understands them. It is important that everyone understands what the learning organisation means for the school and what benefits can be achieved through practicing the five disciplines. Advantages and benefits highlighted should focus on what is best for the students and for the staff themselves. This way they are more likely to develop the motivation to participate and determination to achieve the school goals.

6.2.4 Providing Leadership Training for Principals

Fullan (1993) points out that the new mission for principals in the new times is helping to lead a learning organisation under situations of great complexity. Knight and Ehrich (1998) likewise argue: "Principals in the new self-managing schools are now, for better or for worse, the fulcrums of change for programs of educational reform" (p.2). The launch of the School Based Management (SBM) by the Hong Kong government has served as a major catalyst for the formation of a new form of educational leadership at the school level. The government has previously been the monitor of schools, the decision-maker, the unique leader in the education system while schools have been the users of educational policies and the followers. But the implementation of the SBM which involves the devolution of school administration and decision-making to principals implies that such relationship has changed to a partnership mode. School principals are now required to function as the managerial leader in addition to their traditional role of the instructional leader. For many principals, the traditional hierarchical structure of schools presents little difficulty in practicing instructional leadership. However, managerial leadership is new to most of them. After reviewing school leadership preparation in England, Australia, Hong Kong and Sweden, Caldwell et al (2003) conclude that the complex leadership role of principals in these countries is almost an impossible mission, leading to shortages in the numbers and quality of applicants for such post. Appropriate training is therefore necessary for enhancing the professional standard of principals, and advancing their confidence and competence in effective school management.

If a transformational leadership approach is recommended for schools, then it might be legitimate to ask whether transformational behaviours can be learned. Much of the literature clearly argues that transformational leadership is a competency that can be learned (Howell and Frost, 1989; Yammarino and Bass, 1990). Based on the analysis of thousands of responses, Kouzes and Posner (1995) identify three major opportunities for learning to lead which are: trial and error, observations of others and education. They argue that transformational leadership "is a set of skills. And any skills can be strengthened, honed and enhanced if we have the proper motivation and desire, along with practice and feedback, role models and coaching" (p.323).

Leadership training programmes can be useful for enabling principals in Hong Kong to lead their school more effectively. Specifically, such programmes should focus on developing principals' skills and insights in the following areas: use visioning, planning and goal setting as tools in guiding the school; apply flexibility and risk-taking to adapt to constant changes brought about by the educational reforms; establish an environment and climate conducive to organisational learning for all in the school, apply techniques for understanding, predicting and effectively analysing the process of re-invention and the school's need to change. MacBeath and Myers (1999) emphasise that improving leadership potentials require principals to know themselves. This means taking off personal blinders, being honest about one's strengths and weaknesses, being open to learning and prepared to accept support from others in the team. When designing training programmes for principals, it will therefore be beneficial to also include elements to raise self-awareness and improve self-assessment skills.

Gunter (2001) finds that the initial period of principalship is often characterised by isolation and the lack of support, and that many development opportunities encourage a position where principals are leaders and managers of a system rather than of learning. This brings negative effects on both the staff and the students. Gunter (2001) argues for the provision of mentorship especially for new principals in order to help them develop into leaders of learning. In view of such need, it is recommended that in professional development programmes tailor-made for principals in Hong Kong, the latter should be assigned a mentor who can meet with them regularly and help them build the capacity for critical reflection and continuous learning which is vital to their professional growth.

6.2.5 Building Teachers' Capability

Senge (1990a) argues that the success of implementing change through learning depends greatly on organisational members taking a collective stand for building the learning organisation. "In the absence of this stand, the learning disciplines remain mere collections of tools and techniques - means of solving problems rather than creating something genuinely new" (p.340). Despite the importance of leadership, it is the thoughts and actions of the staff that define what an organisation is, where it is going and what it will become. Within the educational setting, Zederayko and Ward (1999) likewise suggest that teachers are key participants in the change process. It is believed that building teachers' capacity is an essential prerequisite for helping schools grow into successful learning organisations. According to Fullan (2001), capacity building means "helping teachers and communities to respond effectively to changes that come their way and to improve continuously as a lifelong obligation" (p.234). It involves empowering teachers to discover underlying causes of problems, learn continuously, make choices and work towards a school culture of excellence.

Hoban (2002) contends that educational change is a non-linear process that needs to be supported by a framework for long-term teacher learning. Good professional development comes about when teachers are committed and see its relevance to their personal and organisational needs, and that this is essential in creating a change culture in the school. To enhance teachers' readiness to change and build their capacity for coping with changes, principals need to help teachers understand clearly what the learning organisation means, and enable them to see the benefits of implementing the learning organisation for the students, for the school, and for themselves. Simply involving teachers in decision making and offering high levels of teacher autonomy cannot establish learning schools. Principals must function as staff developers and provide teachers with relevant information, training and support so they can master the skills that make them more effective learners and change agents.

Both the pace and magnificence of the recent educational reforms have forced many senior teachers to share administrative work with their school principal. The SBM requires principals in Hong Kong to involve teachers in major areas of school management and planning. Since teachers' role in decision-making and school administration has become more and more important, focusing only on their teaching

role is not sufficient for enhancing their professionalism. Southworth (1998) has emphasised the importance of providing training for teachers to enable them to take up administrative role in the deluge of educational reform. In order to develop different facets of teachers' competences, enable them to deal with new challenges in their work, and empower them to play more constructive roles in the reform, the Hong Kong government needs to design regular and systematic training for them, especially in the areas of leadership and management where training is lacking in traditional teacher education or staff development programmes.

6.3 Conclusions

The educational reform in Hong Kong has initiated many changes in schools from student learning to pedagogy, and from administration to leadership. Although no one can avoid the changes, many writers have argued that achieving improvement through the learning organisation approach can help the school survive in an era of educational change (Friedlander, 1983; Mitchell, 1995). Schools in Hong Kong are given key positions in managing their own change and improvement under the SBM initiative. Their success strongly depends on principals promoting the practice of the five disciplines so that all members can engage in collective and continuous organisational learning. However, the current study reveals that schools in the public sector have only been practicing the five disciplines to some extent. In particular, the disciplines of team learning and mental models are given little attention. They are still far away from being genuine learning organisations. It is necessary to enhance their capability to advance into learning schools which are truly centred around learning, caring, communication and growth of all the members.

The key to helping schools become learning organisations is transformational leadership, as the current study has shown. Attributes/behaviours associated with each of the transformational leadership dimensions have all been found to exert strongly positive effect on schools' practice of the five disciplines. But transactional leadership is also found to be the most favoured leadership style. Many school principals in Hong Kong display transactional behaviours more often than other leadership attributes/behaviours.

Authoritative leadership/headship still exists in many traditional schools in Hong Kong. Obviously, this type of headship cannot cater for the radical changes in the current educational environment. With Hong Kong now being an international financial centre, the economic discourses of new times are challenging its traditional headship culture, even within schools. It needs to be replaced by a more human-oriented transformational leadership which focuses on participative management and meaningful relationships. Since teachers, students, support staff, parents, and community members all have a stake in how the school operates, in order to maximise school performance, they must all be a part of the decision making process to decide the direction in which the school will move. Such a systems approach to running a school allows all access to the great amount of knowledge that is spread across the various groups. School leaders have knowledge of ideas, facts and patterns that other groups do not have. Teachers have knowledge that comes from their work, knowledge that is unique to their position. Each of the groups can see the school and its work in a different way from the others; each group has unique insight into the school, and thus something to contribute to the whole. Adopting a transformational leadership style can enable principals to create an environment that inspires, supports and leverages the motivation and commitment of all members in their school so that the overall capability for continual learning and growth can be established.

6.4 Limitations of the Study and Suggestions for Further Research

This study serves as a starting point in exploring issues related to the influence of leadership on the capability of schools to display learning organisation characteristics. Despite reasonable care and effort undertaken by the researcher in applying appropriate methods and procedures to conduct the study, limitations exist due to ground conditions as well as constraints in time, resources and research methodology. Further research is needed to build on the current findings and to improve our understanding of the relationship between learning schools and school leadership.

Due in part to limited resources and reluctance of potential respondents, the current study involves only a limited number of subjects. Examination of the 269 survey respondents' demographics shows that they have come from at least 256 different

schools, including 138 primary and 118 secondary schools. These represent 23.3% of all primary and secondary schools in the public education sector in Hong Kong. Although such percentage is considered reasonable according to Paxson (1995), Babbie (1990) contends that a return of at least 50% is required, while Bailey (1987) sets the adequacy bar at 75%. Schutt (1999) argues that "a response rate below 60% is a disaster" and concludes that "it is hard to justify the representativeness of the sample if more than a third failed to respond" (1999). Low return rates in general weaken the potential for minimising non-response bias, or generalising the research outcomes to a wider population. To achieve higher response rates for further research, it is recommended to offer an incentive reward for respondents who take time to complete the survey, and for those who are willing to participate in the interview. Reward may take the form of a prize draw, or useful tools and resources that can facilitate principals and teachers in their work.

Another limitation related to the subject pool concerns the failed attempt of the researcher to recruit school principals to participate in the study. Except for the responses of teachers, the study has not incorporated the views of other school personnel such as principals and support staff. For further research it is strongly recommended to encourage the participation of principals whose ratings on the SLQ (self-assessment of their own leadership) and the LSA can be compared with ratings by teachers to identify possible discrepancies. This will give a clearer picture of the organisational reality of schools in Hong Kong. Replicating the current study and opening up the survey to non-teaching staff can also create an interesting comparison between the different operational groups. Determining if these groups are moving together or independently in different directions can benefit principals in their attempt to consolidate efforts and sharpen the consciousness of all members in the school.

Since the study has not involved other types of schools in the non-public sector such as private, international, caput, bought-place and special schools, the findings can only be generalised to public schools in Hong Kong. On the other hand, schools in the non-public sector - especially private schools - have different structure, employ different management practice and may behave more like business organisations. These schools are more independent and free from the central administrative control by the government. They typically enjoy much greater autonomy in resource allocation and

self-management. With smaller sizes private schools tend to have thinner management structure, less bureaucracy and clearer communication channels. Staff also get to know one another better. The above factors may be important in affecting the capability and readiness of private schools to practice the five disciplines. It is therefore worthwhile to replicate the current study on schools outside the public sector, such as the 200 private, international and special schools in Hong Kong. Data from these schools may reveal if the leadership styles adopted by the principals are different, and if these schools are more capable at restructuring themselves to reflect a learning organisation model.

Respondent subjectivity presents another limitation. No matter how carefully written or completely tested, the questionnaire statements are vulnerable to differing interpretations by individuals. Furthermore, the study involves data collection based on the perceptions and verbal reports of respondents which cannot be validated by actual observations. Social desirability can also result in distorted responses, particularly in interviews where face-to-face interaction is involved. Alreck and Settle (1995) note that when personal preferences, opinions or behaviours deviate from what is socially prescribed, respondents are very prone to report what's socially acceptable, rather than the actual reality. To collect more objective and richer data, and to allow more researcher involvement and observation, further study can be conducted using action research. It can focus on how principals and teachers actually work together to achieve genuine school reform. This is important since implementation of the learning organisation concept in schools requires a long period of time and complex developmental processes. Data can be gathered through observing meetings, investigating teaching practices, exploring the interaction between teachers and principals, studying documents, and conducting surveys, in-depth interviews and achievement tests. This kind of action research will be beneficial in highlighting some of the processes, conditions and obstacles involved in transforming schools into learning organisations.

Due to the limitation of time and resources, the current study has only involved a small set of variables. For further research it is recommended to examine also the effects of other potential variables on schools' practice of the five disciplines, such as school location (rural or urban), school banding (academic achievement) and the qualifications of teachers and principals. Gender is a potential factor which can exert influence on

school leadership. Research is therefore suggested to investigate the leadership styles of male and female principals to see if there exists gender-specific bearing on facilitating the practice of the five disciplines in schools. This may provide important information on the leadership characteristics and management styles of male and female principals, and guide the establishment of a principalship model that advocates the strengths of both male and female ways of working to foster the development of schools into successful learning organisations.

There are also limitations associated with the survey instruments. The School Leadership Questionnaire (SLQ) has been adapted from the popular Multifactor Leadership Questionnaire Rater Form 5X originally developed by Bass and Avolio (1995, 2000) for the management field. Despite the reasonably high reliability scores for the SLQ (with majority of the scores exceeding 0.7), its effectiveness for addressing the educational context cannot be fully guaranteed. Since the ideology of the instrument is based on western cultural values and leadership prototypes, it may not be able to fully capture the perspectives of school leadership typical of an Asian culture. Another weakness of the SLQ concerns its indirect evaluation of leadership based solely on the description of leader behaviours. For future research it is suggested to employ a research instrument which is tailor-made to measure school leadership within the educational context in Hong Kong. Ideally such instrument should enable more objective and direct assessment of school principals' performance, and generate more accurate and comprehensive evidence on the relationship and interaction between principals and their staff.

Another questionnaire, the Learning School Assessment (LSA), has been specially designed and used for the first time in the study. As such it awaits future studies for further confirmation of its validity and reliability, despite the high reliability scores (all of them exceeding 0.8) already recorded in the current study. A major weakness of the LSA is associated with the limited amount of available literature (Johnston and Caldwell, 2001; Senge et al, 2000; Silins et al, 2002) on the characteristics of the learning school from which the questionnaire statements have been derived. Due to such limitation, the LSA may not have captured all those characteristics crucial to describe the ideal school functioning as a learning organisation. In addition, these characteristics are mapped to Senge's (1990a) five disciplines employed as the only factors to gauge

the extent of learning organisation practice. To modify and enrich the LSA for further research, other additional factors can be included to provide a more comprehensive assessment of learning schools. Since schools have been granted increasing autonomy and accountability, they are to some extent behaving more like business organisations. Factors typical of business learning organisations focusing particularly on areas of adaptation to changes and competitions can be included to enrich the LSA. Some examples are: turning data into useful knowledge and applying them to the business (Dixon, 1994; Garvin, 1993), learning from best practices from collaborators and competitors (Burgoyne et al, 1994; Longworth and Davies, 1996), establishing accounting and control processes, and skills inventories to audit learning capacity and give feedback (Garvin, 1993; Marquardt, 1999; Swieringe and Wierdsma, 1994), anticipating and constantly adapting to external changes through generative learning (Neegaard, 1994), using a learning approach to develop strategies, and actively implementing strategic changes (Beck, 1992; Burgoyne, 1988).

References

Abolghasemi, M., McCormick, J. and Conners, R. (1999). The importance of department heads in the development of teachers supports for school vision. *International Journal of Educational Management*, 13(2), 80-87

Advisory Committee on School-based Management (2000). *Transforming Schools into Dynamic and Accountable Professional Learning Communities: School-based Management Consultation Document*. Hong Kong: Government Printer

Allison, S.T. and Messick, D.M. (1985). The group attribution error. *Journal of Experimental Social Psychology*, 21, 563-579

Alreck, P.L. and Settle, R.B. (1995). *The Survey Research Handbook: Guidelines and Strategies for Conducting a Survey*. Chicago, IL: Irwin

Andrews, D. and Lewis, M. (2000). The experience of a professional community: teachers developing a new image of themselves and their workplace. *Educational Research*, 44(3), 237-254

Appelbaum, S.H. and Goransson, L. (1997). Transformational and adaptive learning within the learning organisation: a framework for research and application. *The Learning Organisation*, 4(3), 115-128

Argote, L., Seabright, M.A. and Dyer, L. (1986). Individual versus group use of base rate and individuating information. *Organisational Behaviour and Human Decision Processes*, 38, 65-75

Argyris, C. (1991). Teaching smart people how to learn. *Harvard Business Review*, 69, 99-109

Argyris, C. (1992). *On Organisational Learning*. Cambridge, MA: Blackwell Publishers

Argyris, C. and Schön, D.A. (1978). *Organisational Learning: a Theory of Action Perspective*. Reading, MA: Addison-Wesley

Argyris, C. and Schön, D.A. (1996). *Organisational Learning II: Theory, Method, and Practice*. Reading, MA: Addison-Wesley

Aspin, D.N., Chapman, J.D. and Wilkinson, V.R. (1994). *Quality Schooling: A Pragmatic Approach to Some Current Problems, Topics and Issues*. London: Cassell

Aspinwall, K. (1998). *Learning the Learning School*. London: Lemos and Crane

Avolio, B.J. and Bass, B.M. (1998). Transformational leadership, charisma and beyond. In Hurt, J.G., Baliga, B.R., Dachler, H.P. and Schriesheim, C.A. (Eds.). *Emerging Leadership Vistas*. Lexington, MA: Lexington

Babbie, E. (1990). *Survey Research Methods*. Belmont, CA: Wadsworth

Bacharach, S., Bauer, S. and Shedd, H. (1988). The work environment and school reform. *Teachers College Record*, 88, 241-256

Bachmann, D., Elfrink, J. and Vazzana, G. (1999). E-mail and snail mail face off in rematch. *Marketing Research*, 11(4), 11-15

Bailey, K.D. (1987). *Methods of Social Research*. New York: The Free Press

Baker, P., Curtis, D. and Benenson, W. (1991). *Collaborative Opportunities to Build Better Schools*. Chicago, IL: Association for Supervision and Curriculum Development

Barnett, K., McCormick, J. and Conners, R. (2001). Transformational leadership in schools - panacea, placebo or problem? *Journal of Educational Administration*, 39(1), 24-46

Barot, J.E. and Raybould, R. (1998). Changing schools into collaborative organisations. In Pounder, D.E. (Ed.). *Restructuring Schools for Collaboration: Promises and Pitfalls*. Albany, NY: State University of New York Press

Barth, R.B. (1991). *Improving Schools From Within: Teachers, Parents and Principals Can Make the Difference*. San Francisco, CA: Jossey-Bass

Bartlett, C. and Goshal, S. (1998). Trans-national management. In DeWit, B. and Meyer, R. (Eds.). *Strategy: Process Content Context*. London: International Thomson Learning

Bass, B.M. (1985). *Leadership and Performance Beyond Expectations*. New York: Free Press

Bass, B.M. (1998). *Transformational Leadership: Industry, Military and Educational Impact*. Mahwah, NJ: Lawrence Erlbaum Associates

Bass, B.M. and Avolio, B.J. (1993). Transformational leadership and organisational culture. *Public Administration Quarterly*, 17, 112-121

Bass, B.M. and Avolio, B. (1994). *Improving Organisational Effectiveness Through Transformational Leadership*. Thousand Oaks, CA: Sage

Bass, B.M. and Avolio, B. (1995). *Multifactor Leadership Questionnaire: Rate Form 5X*. Redwood City, CA: Mind Garden

Bass, B.M. and Avolio, B. (2000). *Multifactor Leadership Questionnaire: Technical Report*. Redwood City, CA: Mind Garden

Bean, A.G. and Roszkowski, M.J. (1995). The long and short of it. *Marketing Research*, 7(1), 20-26

Beck, M. (1992). Learning organisations - how to create them. *Industrial and Commercial Training*, 21(3), 21-28

Below, P.J., Morrisey, G.L. and Acomb, B.L. (1987). *The Executive Guide to Strategic Planning*. San Francisco, CA: Jossey-Bass

Bennet, R. (1991). How is management research carried out? In Smith, N.C. and Dainty, P. (Eds.). *The Management Research Handbook*. London: Routledge

Bennett, J. and O'Brien, M. (1994). The building blocks of the learning organisation. *Training*, June, 41-49

Bennis, W. and Nanus, B. (1997). *Leaders: Strategies for Taking Charge*. New York: Harper and Row

Ben-Peretz, M. and Schonmann, S. (1999). Informal learning communities and their effects. In Leithwood, K. and Louis, K.S. (Eds.). *Organisational Learning in Schools*. Lisse, the Netherlands: Swets and Zeitlinger

Berson, Y., Shamir, B., Avolio, B. and Popper, M. (2001). The relationship between vision strength, leadership style, and context. *Leadership Quarterly*, 12, 53-73

Bhindi, N. and Duignan, P. (1997). Leadership for a new century: authenticity, intentionality, spirituality and sensibility. *Educational Management and Administration*, 25(2), 117-132

Bierema, L. (1999). The process of the learning organisation: making sense of change. *Educational Administration Abstracts*, 34(4), 46-56

Birnbaum, R. (1992). *How Academic Leadership Works*. San Francisco, CA: Jossey-Bass

Blase, J. and Blase, J. (1999). Principals' instructional leadership and teacher development: teachers' perspective. *Educational Administration Quarterly*, 35(3), 349-378

Block, P. (1996). *Stewardship: Choosing Service Over Self-Interest*. San Francisco, CA: Berrett-Koehler

Bowers, D.K. (1999). FAQs on online research. *Marketing Research*, 10(1), 45-48

Boyer, E.L. (1995). *The Basic School: A Community for Learning*. Stanford, CA: The Carnegie Foundation

Brown, F.W. and Dodd, N. (1999). Rally the troops or make the trains run of time: the relative importance and interaction of contingent reward and transformational leadership. *Leadership and Organisation Development Journal*, 20(6), 291-299

Brown. L.M. and Posner, B.Z. (2001). Exploring the relationship between learning and leadership. *Leadership and Organisational Development Journal*, 22(6), 291-299

Brown, J. and Townsend, R. (1997). Developing an ethical framework. *Thrust for Educational Leadership*, 27(3), 12-14

Bryk, A., Camburn, E. and Louis, K.S. (1999). Professional community in Chicago elementary schools: facilitating factors and organisational consequences. *Educational Administrative Quarterly*, 35, 751-781

Bryman, A. (1992). *Charisma and Leadership in Organisations*. London: Sage

Burgoyne, J. (1988). Management development for the individual and the organisation. *Personnel Management*, June, 40-44

Burgoyne, J., Pedlar, M. and Boydell, T. (1994). *Towards the Learning Company: Concepts and Practices*. London: McGraw Hill

Burns, J. (1978). *Leadership*. New York: Harper and Row

Caldwell, B., Calnin, G. and Cahill, W. (2003). Mission impossible? An international analysis of headteacher/principal training. In Bennett, N., Crawford, M. and Cartwright, M. (Eds.). *Effective Educational Leadership*. London: Paul Chapman Publishing

Caldwell, B.J. and Spinks, J.M. (1992). *Leading the Self-Managing School*. London: Falmer Press

Calvert, G., Mobley, S. and Marshall, L. (1994). Grasping the learning organisation. *Training and Development*, June, 38-43

Carter, R., Martin, J., Mayblin, B. and Munday, M. (1984). *Systems, Management and Change*. London: Paul Chapman

Chan, A. (2004). *Rethinking the Education Reform: People, Process, Priority and Professionalism*. Paper presented at the First Hong Kong Principals' Conference, Hong Kong

Chan, C.K. (2000). *An Exploration of Shared Decision-making: Implementation in Self-managing Primary Schools in Hong Kong*. PhD Thesis, University of Melbourne, Australia

Cheng, Y.C. (1991). Organisational environment in schools: commitment, control, disengagement, and headless. *Educational Administration Quarterly*, 27(4), 481-505

Cheng, Y.C. (1993). Profiles of organisational culture and effective schools. *School Effectiveness and School Improvement: An International Journal of Research, Policy, and Practice (The Netherlands)*, 4(2), 85-110

Cheng, Y.C. (1996). *The Pursuit of School Effectiveness: Research, Management and Policy*. Hong Kong: Hong Kong Institute of Educational Research

Cheng, Y.C. (1997). School re-engineering in the new century: an organisational perspective. *Educational Research Journal*, 12(1), 73-95

Cheng, Y.C. and Chan, M.T. (2000). Implementation of school-based management: a multi-perspective analysis of the case of Hong Kong. *International Review of Education*, 46(3/4), 205-232

Cicmil, S. and Kekäle, T. (1997). Implications of organisational and individual learning for effective change management in education - an exploratory study of management practices in elementary schools in England and Finland. *The Journal of Workplace Learning*, 9(5), 169-176

Coad, F.C. and Berry, A.J. (1998). Transformational leadership and learning organisation. *Leadership and Organisational Development Journal*, 19(3), 164-172

Cook, S.D. and Yanow, D. (1993). Culture and organisational learning. *Journal of Management Inquiry*, 2(4), 373-390

Cousins, J.B. (1996). Understanding organisational learning for school leadership and educational reform. In Leithwood, K., Chapman, J., Carson, D., Hallinger, P. and Hart, A. (Eds.). *International Handbook of Educational Leadership and Administration*. Dordrecht, The Netherlands: Kluwer Academic Publishers

Covey, S. (1992). *Principle Centred Leadership*. New York, NY: Simon and Schuster

Creswell, J.W. (1998). *Qualitative Inquiry and Research Design: Choosing Among Five Traditions*. Thousand Oaks, CA: Sage

Cuban, L. (1988). A fundamental puzzle of school reform. *Phi Delta Kappan*, 70(5), 341-344

Daft, R.M. and Weick, K.E. (1984). "Toward a model of organisations as interpretation system. *Academy of Management Review*, 9, 284-295

Dalin, P. (1993). *Changing the School Culture*. London: Cassell

Darling-Hammond, L. (1998). Policy and professionalism. In Lieberman, A. (Ed.). *Building a Professional Culture in School*. New York: Teachers' College Press

David, J. (1989). Synthesis of research on school-based management. *Educational Leadership*, 48(8), 45-53

Davies, B. and Ellison, L. (2001). Organisational learning: building the future of a school. *The International Journal of Educational Management*, 15(2), 78-85

De Geus, A.P. (1988). Planning as learning. *Harvard Business Review*, March-April, 70-74

DeVaus, D.A. (2002). *Surveys in Social Research*. London: UCL Press

DeVellis, R.F. (1991). *Scale Development: Theory and Applications*. Newbury Park, CA: Sage

Diggins, P.B. (1997). Reflections on leadership characteristics necessary to develop and sustain learning school communities. *School Leadership and Management*, 17(3), 413-425

Dimmock, C. (1999). Principals and school restructuring: conceptualising challenges as dilemmas. *Journal of Educational Administration*, 35(7), 441-462

Dimmock, C. and Walker, A. (1998). Transforming Hong Kong schools: trends and emerging issues. *Journal of Educational Administration*, 36(5), 476-509

Dixon, N. (1994). *The Organisational Learning Cycle*. Maidenhead, UK: McGraw-Hill

Drake, T.L. and Roe, W.H. (1994). *The Principalship*. New York: Macmillan College Publishing

Drucker, P.K. (1989). *The New Realities*. New York: Heinemann

Dubrin, A.J. (1995). *Leadership, Research Findings, Practice and Skills*. Boston, MA: Houghton Mifflin

Duden, N. (1993). A move from effective to quality. *School Administrator*, 50(6), 18-21

Duffy, F.M. (1997). Knowledge work supervision: transforming school systems into high performing learning organisations. *The International Journal of Educational Management*, 11(1), 26-31

Dufour, R. (1997). The school as a learning organisation: recommendations for school improvement. *NASSP Bulletin*, 81(588), 88

Dufour, R. and Eaker, R. (1998). *Professional Learning Communities at Work: Best Practices for Enhancing Student Achievement*. Bloomington, IN: National Educational Service

Duke, D.L., Showers, B.K. and Imber, M. (1981). Studying shared decision making in schools. In Bacharach, S.B. (Ed.). *Organisational Behaviour in Schools and School Districts*. New York: Praeger

Dumaine, B. (1994). Mr. learning organisation. *Fortune*, 130(8), 95-101

Eagly, A.H. and Karau, S.J. (1991). Gender and the emergence of leaders: a meta-analysis. *Journal of Personality and Social Psychology*, 60(5), 685-710

Education and Manpower Bureau (1991). *The School Management Initiative: Setting the Framework for Quality Education in Hong Kong*. Hong Kong: Government Printer

Education and Manpower Bureau (2003). *Progress Report on the Education Reform*. Hong Kong: Government Printer

Education Commission (1997). *Education Commission Report No. 7: Quality School Education*. Hong Kong: Government Printer

Education Commission (2000). *Review of Education System: Reform Proposals Consultation Document*. Hong Kong: Government Printer

Elmore, R.F. (1995). Structural reform and educational practice. *Educational Research*, 24(9), 23-26

Elmore, R.F., Peterson, P.L. and MaCarthey, S.J. (1996). *Restructuring in the Classroom: Teaching, Learning and School Organisation*. San Francisco, CA: Jossey-Bass

Evans, R. (1996). *The Human Side of Change*. San Francisco, CA: Jossey-Bass

Ezzamel, M. and Willmot, H. (1998). Accounting for teamwork: a critical study of group-based systems of organisational control. *Administrative Science Quarterly*, 43, 358-396

Farkas, C.M. and Wetlaufer, S. (1996). The way chief executive officers lead. *Harvard Business Review on Leadership*. Boston, MA: Harvard Business School Publishing

Fast, D.H. (1998). *Creating Learning Organisations Through School Improvement*. Doctoral Dissertation, Wichita State University

Ferguson, M. (1982). *The Aquarian Conspiracy*. London: Granada

Fiol, C.M. and Lyles, M.A. (1985). Organisational learning. *Academy of Management Review*, 10, 803-813

Flood, R.L. and Romm, N.R. (1996). *Diversity Management: Triple Loop Learning*. Chichester, UK: Wiley

Frase, L. and Conley, S. (1994). *Creating Learning Places for Teachers, Too*. Thousand Oaks, CA: Corwin Press

Friedlander, F. (1983). Patterns of individual and organisational learning. In Shrivastava, S. (Ed.). *The Executive Mind*. San Francisco, CA: Jossey-Bass

Fullan, M. (2001). *The New Meaning of Educational Change*. New York: Teachers College Press

Fullan, M. (1992). *Successful School Improvement*. Buckingham, UK: Open University Press

Fullan, M. (1993). *Change Forces: Probing the Depths of Education Reform*. London: Falmer Press

Fullan, M. (1995). The evolution of change and the new work of the educational leader. In Wong, K.C. and Cheng, K.M. (Ed.). *Educational Leadership and Change: An International Perspective*. Hong Kong: Hong Kong University Press

Fullan, M. (1997). *The Challenge of School Change*. Arlington Heights, IL: IRI/Skylight Training and Publishing

Fullan, M. (2001). *The New Meaning of Educational Change*. New York: Teachers College Press

Fullan, M. and Hargreaves, A. (1992). *What's Worth Fighting for in Your School?* Buckingham, UK: Open University Press

Fullan, M. and Miles, M. (1992). Getting reform right: what works and what doesn't. *Phi Delta Kappan*, 73(10), 744-752

Fullan, M. and Stiegelbauer, S. (1991). *The New Meaning of Educational Change*. New York: Teachers' College Press

Fulmer, M. (1994). A model for changing the way organisations learn. *Planning Review*, 22(3), 20-24

Garatt, B. (1990). *Creating a Learning Organisation*. Cambridge, MA: Director Books

Garvin, D.A. (1993). Building a learning organisation. *Harvard Business Review*, July-August, 78-91

Gault, S.C., Wachner, L.J., Walsh, M.H. and Johnson, D.W. (1992). Leaders of corporate change. *Fortune*, 126, 104-109

Geijsel, F., Sleegers, P., Van Den Berg, R. and Kelchtermans, G. (2001). Conditions fostering the implementation of large-scale innovation programs in schools: teachers' perspectives. *Educational Administration Quarterly*, 37(1), 130-166

Glickman, C.D. (1993). *Renewing America's Schools: A Guide for School-based Action.* San Francisco, CA: Jossey-Bass Publishers

Glickman, C.D. (1998). *Revolutionising America's Schools*. San Francisco, CA: Jossey-Bass

Glickman, C.D., Gordon, S.P. and Ross-Gordon, J.M. (1995). *Supervision of Instruction: A Developmental Approach.* Boston, MA: Allyn and Bacon

Goh, S.C. (1998). Toward a learning organisation: the strategic building blocks. *SAM Advanced Management Journal*, 63(2), 15-20

Gordon, J. (1992). Performance technology. Blueprint for the learning organisation? *Training*, 29(5), 27-36

Gore, C. and Steven, V. (1998). Analysis of the effect of external change on the management of business schools within the higher education sector. *Total Quality Management*, 9(2), 249-258

Gozdz, K. (1993). Building community as leadership discipline. In Ray, M. and Rinzler, A. (Eds.). *The New Paradigm in Business*. New York: G.P. Putnam's Sons

Green, F. (2000). *The Head Teacher in the 21st Century: Being Successful School Leader*. Great Harlow, UK: Pearson Education

Gunter, H. (1996). Appraisal and the school as a learning organisation. *School Organisation*, 16(1), 89-101

Gunter, H. (2001). *Leaders and Leadership in Education.* London: Paul Chapman Publishing

Hallinger, P. (1999). Schools as learning organisations: framework and assumptions. *The Practicing Administrator*, 21(1), 41-43

Hallinger, P. and Heck, R.H. (1998). Exploring the principal's contribution to school effectiveness: 1980-1995. *School Effectiveness and School Improvement*, 9(2), 157-191

Hallinger, P. and Murphy, J. (1991). Developing leaders for tomorrow's schools. *Phi Delta Kappan*, March, 514-520

Handy, C. (1991). *The Age of Unreason.* London: Arrow

Hargreaves, A. (2003). *Teaching in a Knowledge Society: Education in the Age of Insecurity*. Buckingham: Open University Press

Hatter, J.J. and Bass, B.M. (1988). Supervisors' evaluation and subordinates' perception of transformational and transactional leadership. *Journal of Applied Psychology*, 73(4), 695-702

Hedberg, B. (1981). How organisations learn and unlearn. In Nystorm, C. and Starbuck, W.H. (Eds.). *Handbook of Organisational Design*. Oxford: Oxford University Press

Heifetz, R.A. and Laurie, D.L. (1997). The work of leadership. *Harvard Business Review on Leadership*. Boston, MA: Harvard Business School Publishing

Hermann, M.G. (1999). *Assessing Leadership Style: A Trait Analysis*. Hilliard, OH: Social Science Automation

Hersey, P. and Blanchard, K.H. (1988). *Management of Organisational Behaviour: Utilising Human Resources*. Englewood Cliffs, NJ: Prentice-Hall

Hoban, G.F. (2002). *Teacher Learning for Educational Change*. London: Open University Press

Hodgkinson, M. (2000). Managerial perceptions of barriers to becoming a learning organisation. *The Learning Organisation*, 7(3), 156-167

Honold, L. (1991). The power of learning at Johnsonville Foods. *Training*, 28(4), 55-58

Hopkins, D., Ainscow, M. and West, M. (1994). *School Improvement in An Era of Change*. London: Cassell

Hord, S.A. (1999). Assessing a school staff as a community of professional learners. *Issues About Change*, 7(1)

Howell, J.W. and Avolio, B.J. (1993). Transformational leadership, transactional leadership, locus of control and support of innovation: key predictors of consolidated-business-unit performance. *Journal of Applied Psychology*, 78(6), 891-902

Howell, J.P. and Frost, P.J. (1989). A laboratory study of charismatic leadership. *Organisational Behaviour and Human Decision Process*, 43, 243-269

Hoy, W.K. and Tarter, C.J. (1995). *Administrators Solving the Problems of Practice: Decision Making Concepts, Cases and Consequences*. Boston, MA: Allyn and Bacon

Huber, G. (1991). Organisational learning: the contributing processes and literature. *Organisation Science*, 2, 88-115

Hubermann, A.M. and Miles, M.B. (1984). *Innovation Up Close: How School Improvement Works*. New York: Plenum Press

Hughes, L.W. (1994). *The Principal as Leader*. New York: Macmillan College Publishing

Humphreys, J.H. and Einstein, W.O. (2003). Nothing new under the sun: transformational leadership from a historical perspective. *Management Decision*, 41(1), 85-95

Hunt, J.G. (1999). Transformational/charismatic leadership's transformation of the field: a historical essay. *Leadership Quarterly*, 10(2), 129-144

Huxham, C. and Vargen, S. (2000). Leadership in the shaping and implementation of collaboration agendas: how things happen in a (not quite) joined-up world. *Academy of Management Journal*, 43(6), 1159-1175

Huysman, M. (1999). Balancing biases: a critical review of the literature on organisational learning. In Easterby-Smith (Ed.). *Organisational Learning and the Learning Organisation: Developments in Theory and Practice*. Thousand Oak, CA: Sage

Iles, P.A. (1994). Developing learning environments: challenges for theory, research and practice. *Journal of European Industrial Training*, 18(3), 3-9

Isaacs, W.N. (1993). Taking flight: dialogue, collective thinking, and organisational learning. *Organisational Dynamics*, 22(3), 24-39

Isaacson, N. and Bamburg, J. (1992). Can schools become learning organisations? *Educational Leadership*, 50(3), 42-44

Jackson, B.G. (2000). A fantasy theme analysis of Peter Senge's learning organisation. *Journal of Applied Behavioural Science*, 36(2), 193-209

Janis, I.L. (1982). *Groupthink: Psychological Studies of Policy Decisions and Fiascos*. Boston, MA: Houghton Mifflin

Jenkins, H.O. (1995). School principals - entrepreneurial professionals. In Wong, K. and Cheng, K. (Eds.). *Educational Leadership and Change: An International Perspective*. Hong Kong: The University of Hong Kong

Johnston, C. (1998). *Leadership and the Learning Organisation in Self-Managing Schools*. Unpublished Doctoral Dissertation, University of Melbourne, Australia

Johnston, C. and Caldwell, B. (2001). Leadership and organisational learning in the quest for world class schools. *The International Journal of Educational Management*, 15(2), 94-103

Johnston, B.J. and Wartel, C.C. (1998). School culture, leadership style and programmatic vision: a critical analytic reflective narrative. *Educational Foundations*, 2, 55-66

Joyce, B. and Calhoun, E. (1995). School renewal: an inquiry, not a formula. *Educational Leadership*, 52(7), 51-55

Kadyschuk, R. (1997). Teacher Commitment: A Study of The Organizational Commitment, Professional Commitment, and Union Commitment of Teachers in Public Schools in Saskatchewan. Published Thesis, University of Saskatchewan

Kanter, R.M. (1992). Six certainties for CEOs. *Harvard Business Review*, 70, 7-8

Karpicke, H. and Murphy, M.E. (1996). Productive school culture: principals working from the inside. *Bulletin*, 1, 26-34

Karsten, S., Voncken, E. and Voorthuis, M. (2000). Dutch primary schools and the concept of the learning organisation. *The Learning Organisation: An International Journal*, 7(3), 145-156

Keefe, J. (1997). The school as a learning organisation: cover story. *NASSP Bulletin*, 81(589), 35-45

Kim, D.M. (1993). The link between individual and organisational learning. *Sloan Management Review*, Fall, 37-50

Kleine-Krache, P.A. (1993). The principal in a community of learning. *Journal of School Leadership*, 3(4), 391-399

Kline, P. and Saunders, B. (1998). *Ten Steps to a Learning Organisation.* Arlington, VA: Great Oceans Publishers

Knight, J. and Ehrich, L.C. (1998). A principled practice for New Times. In Knight, J. and Erich, L.C. (Eds.). *Leadership in Crisis? Restructuring Principled Practice: Essays on Contemporary Educational Leadership*. Flaxton: Post Press

Kofman, F. and Senge, P.M. (1993). Communities of commitment: the heart of learning organisations. *Organisational Dynamics*, 22, Autumn, 5-23

Kohn, M.L. (1989). Cross national research as an analytic strategy. In Kohn, M.L. (Ed.). *Cross National Research in Sociology*. Thousand Oaks, CA: Sage

Kouzes, J.M. and Posner, B.Z. (1995). *The Leadership Challenge: How to Keep Getting Extraordinary Things Done in Organisations*. San Francisco, CA: Jossey-Bass

Krefting, L. (1991). Rigor in qualitative research: The assessment of trustworthiness. In Milinki, A.K. (Ed.). *Cases in Qualitative Research: Research Reports for Discussion and Evaluation*. Los Angeles, CA: Pyrczak Publishing

Kruse, S.D. and Louis, K.S. (1993). *Developing Professional Community in New and Restructuring Urban Schools*. Madison, WI: Centre on Organisation and Restructuring of Schools

Kruse, S.D. and Louis, K.S. (1997). Teachers teaming in middle schools: dilemmas for a school-wide community. *Educational Administration Quarterly*, 33(3), 261-289

Lam, Y.L. and Pang, S.K. (2003). The relative effects of environmental, internal and contextual factors on organisational learning: the case of Hong Kong schools under reforms. *The Learning Organisation*, 10(2), 83-97

Lam, J., Wei, P., Pan, W. and Chan, M. (2002). In search of basic sources that propel organisational learning under recent Taiwanese school reforms. *The International Journal of Educational Management*, 16(5), 216-228

Lambert, L. (2003). *Leadership Capacity for Lasting School Improvement.* Alexandria, VA: Association for Supervision and Curriculum Development

Lee, V.E. and Smith, J.B. (1997). High school size: which works best and for whom? *Educational Evaluation and Policy Analysis*, 19(3), 205-227

Leithwood, K. (1992). The move toward transformational leadership. *Educational Leadership*, 49(5), 8-12

Leithwood, K. (1994). Leadership for school restructuring. *Educational Administration Quarterly*, 30(4), 498-518

Leithwood, K., Chapman, J., Corson, D., Hallinger, P. and Hart, A. (1996). *International Handbook of Educational Leadership and Administration.* Dordrecht, The Netherlands: Kluwer Academic Publishers

Leithwood, K. and Jantzi, D. (1991). Transformational leadership: how principals can help reform school cultures. *School Effectiveness and School Improvement*, 1(3), 249-281

Leithwood, K. and Jantzi, D. (1999). The relative effects of principal and teacher sources of leadership on student engagement with school. *Educational Administration Quarterly*, 35, 679-706

Leithwood, K., Jantzi, D. and Fernandez, A. (1994). Transformational leadership and teachers' commitment to change. In Murphy, J. and Louis, K.S. (Eds.). *Reshaping the Principalship: Insights From Transformational Reform Efforts.* Thousand Oaks, CA: Corwin

Leithwood, K., Jantzi, D. and Steinbach, R. (1998a). Leadership and other conditions which foster organisational learning in schools. In Leithwood, K. and Louis, K.S. (Eds.). *Organisational Learning in Schools.* Lisse, The Netherlands: Swets and Zeitlinger

Leithwood, K., Leonard, L. and Sharratt, L. (1998b). Conditions fostering organisational learning in schools. *Educational Administrative Quarterly*, 34(2), 243-276

Leithwood, K. and Louis, K.S. (1998). Organisational learning in schools: an introduction. In Leithwood, K. and Louis, K.S. (Eds.). *Organisational Learning in Schools*. Lisse, The Netherlands: Swets and Zeitlinger

Leithwood, K. and Steinbach, R. (1995). *Expert Problem Solving: Evident from Schools and District Leaders*. Albany, NY: State University of New York

Leonard, L. (1998). Site-based management and organisational learning: conceptualising their combined potential for meaningful reform. *Planning and Change*, 29(1), 24-46

Levin, H.M. (1991). *Building School Capacity for Effective Teacher Empowerment: Applications to Elementary Schools With At Risk Students*. New Brunswick, NJ: Consortium for Policy Research in Education

Licata, J.W. and Harper, G.W. (2001). Organisational health and robust school vision. *Educational Administration Quarterly*, 37(1), 5-26

Little, J. (1990). The persistence of privacy: autonomy and initiative in teachers' professional relations". *Teacher College Record*, 91, 509-536

Lo, J.W. (2004). Implementation of the learning organisation concept in school management: a literature review. *Studies in Education Policy and Educational Philosophy*, Notes 2004:1

Lo, J.W. (2005). The influence of leadership style on schools' development into learning organisations. *Social Sciences* (article pending publication)

Longworth, N. and Davis, K. (1996). *Lifelong Learning*. London: Kogan Page

Lord, R. and Hall, R. (1995). Multilevel information processing explanations of followers' leadership perceptions. *Leadership Quarterly*, 6, 265-287

Louis, K.S. (1994). Beyond managed change. *School Effectiveness and School Improvement*, 5(1), 2-24

Louis, K.S. and Kruse, S.D. (1998). Creating community in reform: images of organisational learning in inner-city schools. In Leithwood, K. and Louis, K.S. (Eds.). *Organisational Learning in Schools*. Lisse, The Netherlands: Swets and Zeitlinger

Louis, K.S., Kruse, S. and Raywid, M.A. (1996a). Putting teachers at the centre of reform. *NASSP Bulletin*, 80(580), 9-21

Louis, K.S., Kruse, S.D. and Marks, H. (1996b). School-wide professional community. In Newmann, F. (Ed.). *Authentic Achievement: Restructuring Schools for Intellectual Quality*. San Francisco, CA: Jossey-Bass

Louis, K.S., Marks, H. and Kruse, S.D. (1996c). Teachers' professional community in restructuring schools. *American Educational Research Journal*, 33(4), 757-798

Louis, K.S. and Miles, M.B. (1990). *Improving the Urban High School: What Works and Why*. New York: Teachers' College Press

MacBeath, J. and Myers, K. (1999). *Effective School Leaders: How to Evaluate and Improve Your Leadership Potential*. London: Financial Times

Mansbridge, J.J. (1973). Time, emotion and inequality: three problems of participatory groups. *Journal of Applied Behavioural Science*, 9, 351-368

Marks, H.M. and Louis, K.S. (1997). Does teacher empowerment affect the classroom? The implications of teacher empowerment for teachers' instructional practice and student academic performance. *Educational Evaluation and Policy Analysis*, 19(3), 245-275

Marks, H.M. and Louis, K.S. (1999). Teacher empowerment and the capacity for organisational learning. *Educational Administration Quarterly*, 35(5), 700-750

Marquardt, M. (1996). *Building the Learning Organisation*. London: McGraw Hill

Marquardt, M. (1999). *Action Learning in Action: Transforming Problems and People for World-class Organisational Learning*. Palo Alto, CA: Davies-Black Publishing

Marshall, C. (1995). Imagining leadership. *Educational Administration Quarterly*, 31(3), 484-492

Marsick, V.J. (1988). Learning in the workplace: the case for reflectivity and critical reflectivity. *Adult Education Quarterly*, 38(4), 187-198

May, S. (1994). Beyond "super secretary" courses. *Canadian Journal of University Continuing Education*, 20(2), 45-54

McDonald, B. (2002). A teaching note on Cook's distance - a guideline. *Research Letters in the Information and Mathematical Sciences*, 3, 127-128

McKee, J.G. (1991). Leadership styles of community college presidents and faculty job satisfaction. *Community Junior College*, 15, 33-47

Meltzoff, N. (1994). Relationship, the fourth *R*: the development of a classroom community. *The School Community Journal*, 4(2), 13-26

Merton, R.K., Fiske, M. and Kendall, P. (1990). *The Focused Interview: A Manual of Problems and Procedures*. New York: Free Press

Meyer, H. (2000). The new managerialism in education management: corporatisation or organisational learning? *Journal of Educational Administration*, 40(6), 534-551

Mezirow, J. (1991). *Transformative Dimensions of Adult Learning*. San Francisco, CA: Jossey-Bass

Miles, R.H. and Randolph, W.A. (1980). Influence of organisational learning styles on early development. In Kimberly, J.R. and Miles, R.H. (Eds.). *The Organisational Life Cycle: Issues in the Creation, Transformation and Decline of Organisations*. San Francisco, CA: Jossey-Bass

Mitchell, C. (1995). *Teachers Learning Together. Organisational Learning in an Elementary School*. Unpublished PhD Thesis, University of Saskatchewan, Saskatoon

Mitchell, C. (1999). Building learning communities in schools: the next generation or the impossible dream? *Interchange*, 30(3), 283-303

Mitchell, D.E. and Tucker, S. (1992). Leadership as a way of thinking. *Educational Leadership*, 49(5), 30-35

Mohr, N. and Dichter, A. (2001). Building a learning organisation. *Phi Delta Kappan*, 82(10), 744-747

Morgan, G. (1986). *Images of Organisation*. London: Sage

Morrison, K. (1998). *Management Theories for Educational Change*. London: Sage

Muczyk, J.P. and Reimann, B.C. (1987). The case for directive leadership. *Academy of Management Executive*, 1(4), 301-311

Mulford, B. (1998). Organisational learning and educational change. In Hargreaves, A., Lieberman, M., Fullan, M. and Hopkins, D. (Eds.). *International Handbook of Educational Change*. Norwell, MA: Kluwer Academic Publishers

Murphy, J. and Beck, L.G. (1995). *School-based Management As School Reform: Taking Stock*. Thousand Oaks, CA: Cowin Press

Murphy, J. and Louis, K.S. (1994). *Reshaping the Principalship: Insights From Transformational Reform Efforts*. Thousand Oaks, CA: Corwin

Myers, D.G., and Lamm, H. (1976). The group polarisation phenomenon. *Psychological Bulletin*, 38, 602-627

Neegaard, C. (1994). *Creating a Learning Organisation: A Comprehensive Framework*. Unpublished Thesis, Department of Production, Aalborg University, Denmark

Nevis, C., DiBella, A. and Gould, J. (1995). Understanding organisations as learning systems. *Sloan Management Review*, Winter, 73-85

Newmann, F.M. (1996). *Authentic Achievement: Restructuring Schools for Intellectual Quality*. San Francisco, CA: Jossey-Bass

Newmann, F.M., King, M.B. and Rigdon, M. (1997). Accountability and school performance: implications from restructuring schools. *Harvard Educational Review*, 67(1), 41-74

Newmann, F. and Wehlage, G. (1995). *Successful School Restructuring*. Madison, WI: University of Wisconsin-Madison

Ng, S.W. (1999). Home-school relations in Hong Kong. *School Effectiveness and School Improvement*, 10(4), 551-560

Nonaka, I. (1991). The knowledge creating company. *Harvard Business Review*, 69, 96-104

Oakley, E. and Krug, D. (1993). *Enlightened Leadership*. New York: Simon and Schuster

Odden, A. and Kelley, C. (1997). *Paying Teachers for What They Know and Do: New and Smarter Compensation Strategies to Improve Schools*. Thousand Oaks, CA: Corwin Press

O'Neil, J. (1995). On schools as learning organisations: a conversation with Peter Senge. *Educational Leadership*, 52, 20-23

O'Sullivan, F. (1997). Learning organisations - reengineering schools for life long learning. *School Leadership and Management*, 17(2), 217-230

Pascale, R. (1990). *Managing on the Edge: How the Smartest Companies Use Conflict to Stay Ahead*. New York: McGraw Hill

Paxson, M.C. (1995). Increasing survey response rates: practical instructions from the total-design method. *Cornell Hotel and Restaurant Administration Quarterly*, August, 66-73

Pedlar, M., Burgoyne, J. and Boydell, T. (1991). *The Learning Company: A Strategy for Sustainable Development*. London: McGraw Hill

Pelled, L.H., Eisenhardt, K.M. and Xin, L. (1999). Exploring the black box: an analysis of work, group diversity, conflict and performance. *Administrative Science Quarterly*, 44, 1-28

Pierce, J.L. and Newstrom, J.W. (1995). *Leaders and the Leadership Process: Readings, Assessments and Applications*. Chicago, IL: Austen Press

Podsakoff, P.M., MacKenzie, S.B., Moorman, R.H. and Fetter, R. (1990). Transformational leader behaviours and their effects on followers' trust in leader, satisfaction and organisational citizenship behaviours. *Leadership Quarterly*, 1(2), 107-142

Preedy, M., Glatter, R. and Wise, C. (Eds.). (2003). *Strategic Leadership and Educational Improvement*. London: Open University in association with Paul Chapman Publishing

Provenzo, E.F. (1989). School-based management and shared decision making in the Dade county public schools. In Rosow, J.M. and Zager, R. (Eds.). *Allies in Educational Reform*. San Francisco, CA: Jossey-Bass

Rait, E. (1995). Against the current: organisational learning in schools. In Bacharach, S.B. and Mundell, B. (Eds.). *Images of Schools: Structures and Roles in Organisational Behaviour*. Thousand Oaks, CA: Corwin Press

Ravichandran, T. and Rai, T. (2000). Quality management in systems development: an organisational system perspective. *MIS Quarterly*, 24(3), 381-415

Redding, J.C. and Catalanello, R.F. (1994). *Strategic Readiness: The Making of the Learning Organisation*. San Francisco, CA: Jossey-Bass

Reich, R. (1994). Leadership and the high performance organisation. *Journal for Quality and Participation*, 17, 6-11

Reynolds, D., Sammons, P., Stoll, L., Barber, M. and Hillman, J. (1996). School effectiveness and school improvement in the United Kingdom. *School Effectiveness and School Improvement*, 7(2), 133-158

Richardson, J. (1996). School culture: a key to improved student learning. In Richardson, J. (Ed.). *School Team Innovator: Practical Strategies for Promoting School Improvement*. Oxford, OH: National Staff Development Council

Robertson, P.J., Wholstetter, P. and Mohrman, S.A. (1995). Generating curriculum and instructional innovations through school-based management. *Educational Administration Quarterly*, 31(3), 375-404

Romme, A. and Van Witteloostuijn, A. (1999). Circular organising and triple-loop learning. *Journal of Organisational Change Management*, 12(5), 439-454

Ronsenholtz, S. (1989). *Teachers' Workplace: The Social Organisation of Schools*. New York: Longman

Royal, M.A. and Rossi, R.J. (1997). Schools as communities. *ERIC Digest*. Eugene, OR: ERIC Clearinghouse on Educational Management (ERIC Document Reproduction Service No. ED 405 641)

Salancik, G. and Meindl, J. (1984). Corporate attributions as strategic illusions of management control. *Administrative Science Quarterly*, 29, 238-254

Sarason, S. (1990). *The Predictable Failure of Education Reform*. San Francisco, CA: Jossey-Bass

Sarros, J.C. and Santora, J.C. (2001). The transformational-transactional leadership model. *Leadership and Organisation Development Journal*, 22(8), 383-393

Schaeffer, D.R. and Dillman, D.A. (1998). Development of standard email methodology: results on an experiment. *Public Opinion Quarterly*, 62(3), 378-397

Schein, E. (1992). *Organisational Culture and Leadership*. Oxford, UK: Oxford University Press

Schutt, R.K. (1999). *Investigating the Social World: The Process and Practice of Research*. Thousand Oaks, CA: Pine Forge

Scribner, J.P., Cockrell, K.S., Cockrell, D.H. and Valentine, J.W. (1999). Creating professional communities in schools through organisational learning: an evaluation of a school improvement process. *Educational Administration Quarterly*, 35(1), 130-160

Seidman, I. (1998). *Interviewing as Qualitative Research*. New York: Teachers College Press

Senge, P.M. (1990a). *The Fifth Discipline: the Art and Practice of the Learning Organisation*. New York: Doubleday

Senge, P.M. (1990b). The leader's new work: building learning organisations. *Sloan Management Review*, 32(1), 7-23

Senge, P.M. (1999a). The leadership of profound change: toward an ecology of leadership. In Senge, P., Kleiner, A., Roberts, C., Ross, R., Roth, G. and Smith, B. *The Dance of Change: The Challenges to Sustaining Momentum in Learning Organisations*. New York: Doubleday

Senge, P.M. (1999b). Leadership in the world of the living. In Senge, P., Kleiner, A., Roberts, C., Ross, R., Roth, G. and Smith, B. *The Dance of Change: The Challenges to Sustaining Momentum in Learning Organisations*. New York: Doubleday

Senge, P.M., Cambron-McCabe, N., Lucas, T., Smith, B., Dutton, J. and Kleiner, A. (2000). *Schools that Learn: A Fifth Discipline Fieldbook for Educators, Parents and Everyone Who Cares About Education.* New York: Doubleday

Sergiovanni, T. (1990). *Value-added Leadership: How to Get Extraordinary Performance in Schools.* Orlando, FL: Harcourt Brace Jovanovich

Sergiovanni, T. (1995). *The Principalship: A Reflective Practice Perspective.* Boston, MA: Allyn and Bacon

Sergiovanni, T. (1996). *Leadership for the Schoolhouse.* San Francisco, CA: Jossey-Bass

Sergiovanni, T. (2003). The lifeworld at the centre: values and actions in educational leadership. In Bennett, N., Crawford, M. and Cartwright, M. (Eds.). *Effective Educational Leadership.* London: Paul Chapman Publishing

Sergiovanni, T. and Starratt, R.J. (1993). *Supervision: A Redefinition.* New York: Morgan Hill

Seymour, R. and Arnott, S. (1994). Schools as organisations for adult management learning. *The International Journal of Educational Management*, 8(5), 24-28

Seymour, R. and West-Burnham, J. (1990). Learning styles and education management: part two. *The International Journal of Educational Management*, 4(4), 22-26

Shamir, B. (1995). Social distance and charisma: theoretical notes and an exploratory study. *Leadership Quarterly*, 6, 19-47

Sherwood, J.J. and Hoylman, F.M. (1993). The total quality paradox part II - how to make total quality work. *Journal for Quality and Participation*, 16, 82-91

Shields, C. and Newton, E. (1994). Empowered leadership. *Journal of School Leadership*, 4(2), 171-196

Shrivastava, P. (1983). A typology of organisational learning system. *Journal of Management Studies*, 20(1), 7-28

Silins, H. and Mulford, B. (2002). Schools as learning organisations: the case for system, teacher and student learning. *Journal of Educational Administration*, 40(5), 425-446

Silins, H., Zarins, S. and Mulford, B. (2002). What characteristics and processes define a school as a learning organisation? Is this a useful concept to apply to schools? *International Educational Journal*, 3(1), 24-32

Simonaitiene, B. (2001). *The Features' Expression of Learning Organisation Activity in Gymnasium.* Doctoral Dissertation, Kaunas University of Technology, Lithuania

Sivanathan, N. and Fekken, G.C. (2002). Emotional intelligence, moral reasoning and transformational leadership. *Leadership and Organisation Development Journal*, 23(4), 198-204

Smircich, L. and Morgan, G. (1982). Leadership: the management of meaning. *Journal of Applied Behavioural Science*, 18, 257-273

Smith, S.C. and Scott, J.J. (1990). *The Collaborative School: A Work Environment for Effective Instruction.* Eugene, OR: ERIC Clearing House on Educational Management

Smith, G.J. and Stodden, R.A. (1994). Restructuring vocational special needs education through interdisciplinary team effort. *Journal for Vocational Special Needs Education*, 16(3), 16-23

Smither, R.D. (1994). *The Psychology of Work and Human Performance.* New York: Harper Collins College Publishers

Smylie, M. (1995). Teacher learning in the workplace. In Guskey, T.R. and Huberman, M. (Eds.). *Professional Development in Education.* New York: Teacher College Press

Smylie, M.A., Lazarus, V. and Brownlee-Conyers, J. (1996). Instructional outcome of school-based participative decision making. *Educational Evaluation and Policy Analysis*, 18, 181-198

Southworth, G. (1998). Change and continuity in the work of primary school headteachers in England. *International Journal of Educational Research,* 29, 311-323

Starratt, R.J. (1995). *Leaders with Vision: The Quest for School Renewal.* Thousand Oaks, CA: Corwin Press

Stata, R. (1989). Organisational learning: the key to management innovation. *Sloan Management Review*, Spring, 63-74

Stenhouse, L. (1975). *An Introduction to Curriculum Research and Development.* London: Heinemann

Stevenson, R.B. (2001). Shared decision making and core school values: a case study of organisational learning. *The International Journal of Educational Management*, 15(2), 103-121

Stoll, L. and Fink, D. (1996). *Changing Our Schools. Linking School Effectiveness and School Improvement.* Buckingham, UK: Open University Press

Swieringe, J. and Wierdsma, A. (1994). *Becoming a Learning Organisation.* Cambridge, MA: Addison-Wesley

Tan, C.Y. (2000). High-performance human resource strategies in learning schools. *The Learning Organisation,* 7(1), 32-39

Tann, J. (1995). The learning organisation. In Warner, D. and Croswaithe, E. (Eds.). *Human Resource Management in Higher and Further Education.* London: The Society for Research into Higher Education

Tate, R. (1998). *An Introduction to Modelling Outcomes in the Behavioural and Social Sciences.* Minneapolis, MN: Burgess International Group

Thornett, T. and Viggiani, R. (1996). Quality in education: creating a learning society: the Pen Y Dre experience. *The TQM Magazine,* 8(4), 29-35

Tschannen-Moran, M., Uline, C., Hoy, A.W. and Mackley, T. (2000). Creating smarter schools through collaboration. *Journal of Educational Administration,* 38(3), 247-272

Tse, A.C.B., Tse, K.C., Yin, C.H., Ting, C.B., Yi, K.W., Yee, K.P. and Hong, W.C. (1995). Comparing two methods of sending out questionnaires: e-mail versus snail mail. *Journal of the Market Research Society,* 37(4), 441-446

Tyack, D.B. and Cuban, L. (1995). *Tinkering Towards Utopia.* Cambridge, MA: Harvard University Press

Tye, B. (2000). *Hard Truths: Uncovering the Deep Structure of Schooling.* New York: Teachers College Press

Usdan, M., McCloud, B., Podmostko, M. and Cuban, L. (Eds.). (2001). *Leadership for Student Learning: Restructuring School District Leadership.* Washington, DC: Institute for Educational Leadership

Varaki, B.S. (2003). Epistemological beliefs and leadership style among school principals. *International Education Journal,* 4(3), 224-231

Virany, B., Tushman, M.L. and Romanelli, E. (1992). Executive succession and organisation outcomes in turbulent environments: an organisational learning approach. *Organisational Science,* 3(1), 72-91

Wagner, T. (1998). Change as collaborative inquiry: a constructivist methodology for reinventing schools. *Phi Delta Kappan,* 79(7), 512-517

Wallace, R.C., Engel, D.E. and Mooney, J.E. (1997). *The Learning School: A Guide to Vision-based Leadership.* Thousand Oaks, CA: Sage

Watkins, K.E. and Marsick, V.J. (1993). *Sculpturing the Learning Organisation.* San Francisco, CA: Jossey-Bass

Wehlage, F., Smith, G. and Lipman, P. (1992). Restructuring urban high schools: the new future experience. *American Educational Research Journal*, 29(1), 51-93

Weisbord, M.R. (1987). *Productive Workplaces: Organising and Managing for Dignity, Meaning and Community.* San Francisco, CA: Jossey-Bass

Weldone, E. and Gargano, G.M. (1985). Cognitive loafing: the effects of accountability and shared responsibility on cognitive effort. *Personality and Social Psychology Bulletin*, 14, 159-171

West-Burnham, J. (1992). *Managing Quality in Schools.* Harlow, UK: Longman

West-Burnham, J. and O'Sullivan, F. (1998). *Leadership and Professional Development in Schools: How to Promote Techniques for Effective Professional Learning.* London: Financial Times Publishing

Westwood, R.I. and Chan, A. (1992). Headship and leadership. In Westwood, R.I. (Ed.). *Organisational Behaviour: Southeast Asian Perspectives.* Hong Kong: Longman

Wheatley, M.J. (1992). *Leadership and the New Science.* San Francisco, CA: Berrett-Koehle Publications

Whitaker, P. (1993). *Managing Change in Schools.* Buckingham, UK: Open University Press

White, J., McMillen, M.C. and Baker, A.C. (2001). Challenging traditional models: toward an inclusive model of group development. *Journal of Management Inquiry*, 10(1), 40-57

Williams, A.P.O. (2001). A belief-focused process model of organisational learning. *Journal of Management Studies*, 38(1), 67-85

Wohlstetter, P., Smyer, R. and Mohrman, S.A. (1994). New boundaries for school-based management: the high involvement model. *Educational Evaluation and Policy Analysis*, 16(3), 268-286

Wong, K.C. (1992). Achieving the effective school status through the SMI? *New Horizons*, 33, 51-55

Wong, K.C. (1993). School-based management, school effectiveness and the school management initiative: different? how different? In Tsui, B.M. and Ivor, J. (Eds.). *Teacher Education and Development.* Hong Kong: The University of Hong Kong

Yammarino, F.J. and Bass, B.M. (1990). Long-term forecasting of transformational leadership and its effects among naval officers: some preliminary findings. In Clark, K.E. and Clark, M.B. (Eds.). *Measures of Leadership*. West Orange, NJ: Leadership Library of America

Yammarino, F.J., Dubinsky, A.J. and Spangler, W.D. (1998). Transformational and contingent reward leadership: individual, dyad, and group level of analysis. *The Leadership Quarterly*, 9(1), 27-54

Yu, H. (2002). A shift in Hong Kong principals' leadership conceptions. *Asia Pacific Education Review*, 3(1), 37-47

Yu, H. and Yeung, S.K. (2003). The challenge of changing organisational culture in Hong Kong schools in the context of systemic reform. Paper presented at the *Annual Conference of International Congress for School Effectiveness and Improvement*, Sydney, Australia

Yeung, A.K., Ulrich, D.O., Nason, S.W. and Glinow, M.A. (1999). *Organisational Learning Capacity: Generating and Generalising Ideas With Impact*. New York: Oxford University Press

Yuen, P. and Cheng, Y. (2000). Leadership for teachers' action learning. *The International Journal of Educational Management*, 14(5), 198-209

Yukl, G.A. (1998). *Leadership in Organisations*. Englewood Cliffs, NJ: Prentice-Hall

Yukl, G.A. and Van Fleet, D.D. (1982). Cross-situational, multi-method research on military leader effectiveness. *Organisational Behaviour and Human Performance*, 30, 87-108

Zederayko, G.E. and Ward, K. (1999). Schools as learning organisations: how can the work of teachers be both teaching and learning? *National Association of Secondary School Principals*, 83(604), 35-45

Appendix 1: Survey Questionnaires

Please complete both the Learning School Assessment and the School Leadership Questionnaire below.

Learning School Assessment

This questionnaire describes the current status of your school in terms of how well it exhibits characteristics of a learning organisation. Twenty-nine descriptive statements are listed. Judge the extent to which each statement fits your school. Use the following rating scale and mark the appropriate boxes with a "Y".

not at all	to a slight extent	to some extent	to a moderate extent	to a great extent	to a very great extent	always
1	2	3	4	5	6	7

The current reality in my school is that:

		1	2	3	4	5	6	7
1.	People have a clear view of their personal goals and seek to understand the context in which they are working.							
2.	Critical examination of current practices and continuous learning for improvement are encouraged at all levels. Continuous professional development is expected and valued.							
3.	A variety of professional development strategies are adopted. Individuals are directed towards relevant training opportunities inside and outside the school.							
4.	Sufficient resources are allocated to support regular professional development. Each individual receives a specified number of hours of professional training annually.							
5.	Professional development is closely tied to real school issues.							
6.	People in general possess a high level of job satisfaction.							

		1	2	3	4	5	6	7
7.	People are willing to change old ways of doing things and open to new ideas.							
8.	People feel free to experiment and take risk without fear of failure. There is a belief that it is always possible to find a better way to do something.							
9.	Mistakes are considered part of the learning process, and are viewed as opportunities for growth.							
10.	People reflect on their own professional practice and discuss what is happening in the school.							
11.	Multiple viewpoints and productive debates are encouraged.							
12.	People have a common and clear understanding of the school vision/goals, and a shared sense of direction.							
13.	There is wide participation in establishing the school vision/goals.							
14.	People are committed to the school vision/goals and adapt their working patterns in order to achieve it/them.							
15.	There are regular reviews of the school vision/goals and priorities.							
16.	The curriculum is aligned with the school vision/goals.							
17.	School structures exist (e.g. team teaching facilities and arrangements, cross-departmental appointments, peer observations, etc.) which encourage collaboration among people.							
18.	Informal meetings and "lessons learned" sharing sessions are conducted among subgroups.							
19	Teams of staff receive training on how to work and learn together.							
20.	Ideas and materials are shared among individuals and across teams.							
21.	Skills and contributions of individuals are acknowledged and valued.							

		1	2	3	4	5	6	7
22.	Ongoing professional dialogues and inquiries are evident, especially among teachers.							
23.	People trust and respect one another, and communicate openly and candidly.							
24.	There is a rich climate characterised by collaboration and mutual support.							
25.	Decision making is shared and staff (particularly teachers) participate in significant school-level policy decisions.							
26.	Open and reciprocal channels of communication are established at all levels within the school, and between the school and the surrounding community.							
27.	Individuals are mutually responsible and act with the full knowledge and understanding of others in the school.							
28.	People are aware of the external educational context, and keep themselves abreast of external events that may impact on the school.							
29.	Assess to best current knowledge and professional practice is readily available.							

Please also complete the second questionnaire below.

School Leadership Questionnaire

This questionnaire describes the leadership style of your school principal as you perceive it. Thirty-six descriptive statements are listed. Judge how frequently each statement fits the principal you are describing. Use the following rating scale and mark the appropriate boxes with a "Y".

not at all	once in a while	sometimes	moderately often	fairly often	frequently, if not always	always
1	2	3	4	5	6	7

The school principal I am rating:

		1	2	3	4	5	6	7
1.	Instils pride in others for being associated with him/her.							
2.	Goes beyond self-interest for the good of all in the school.							
3.	Acts in ways that build others' respect for him/her.							
4.	Displays a sense of power and confidence.							
5.	Talks about his/her most important values and beliefs.							
6.	Specifies the importance of having a strong sense of purpose.							
7.	Considers the moral and ethical consequences of decisions.							
8.	Emphasises the importance of having a collective sense of mission that is shared by all in the school.							
9.	Talks optimistically about the future of the school.							
10.	Talks enthusiastically about what needs to be accomplished.							
11.	Articulates a compelling vision for the school.							
12.	Expresses confidence that goals will be achieved.							
13.	Re-examines critical assumptions to question whether they are appropriate for different situations.							
14.	Seeks differing perspectives when solving problems.							

		1	2	3	4	5	6	7
15.	Guides others to look at problems from many different angles.							
16.	Suggests new ways of looking at how to complete assignments.							
17.	Spends time teaching and coaching others.							
18.	Treats people in the school as individuals rather than just as members of a group.							
19.	Considers individuals as having different needs, abilities and aspirations.							
20.	Helps individuals in the school to develop their strengths.							
21.	Provides others with assistance in exchange for their efforts.							
22.	Discusses in specific terms who is/are responsible for achieving performance targets.							
23.	Makes clear what individuals can expect to receive when performance targets are achieved.							
24.	Expresses satisfaction when others meet expectations.							
25.	Focuses attention on irregularities, mistakes, exceptions and deviations from standards.							
26.	Concentrates his/her full attention on dealing with mistakes, complaints and failures.							
27.	Keeps track of all mistakes.							
28.	Directs others' attention towards failures in order to meet standards.							
29.	Fails to interfere until problems become serious.							
30.	Waits for things to go wrong before taking action.							
31.	Believes firmly in "fixing things only if they're broken".							
32.	Demonstrates that problems must be chronic before taking action.							
33.	Avoids getting involved when important issues arise.							
34.	Is absent when needed.							

		1	2	3	4	5	6	7
35.	Avoids making decisions.							
36.	Delays responding to urgent questions.							

Please also answer the following questions:

What type of school are you working in? * Primary / Secondary

How many staff are there in your school? _____

How long has your school been headed by the current principal? _____ years

How long has the school been established? _____ years

Are you willing to participate in an individual interview (lasting from 30 to 45 minutes) to further elaborate your views, if selected by the researcher?

* Yes / No If yes, please provide your email for contact: _____

Would you like a copy of the research report when it is completed (to be sent via email)?

* Yes / No If yes, please provide your email: _____

* Delete where inappropriate

Thank you for your participation. Please return the completed questionnaires by fax to 2641 8370 or email to janetlo@netvigator.com.

Appendix 2: Interview Questions

(1) In your opinion, how can a school principal promote learning and professional development in staff? Please illustrate with some examples from your school. [question related to personal mastery]

(2) In your opinion, how can a school principal help staff to be open to diverse perspectives and challenging ideas, and to accept new possibilities or different ways of thinking? Please illustrate with some examples from your school. [question related to mental model]

(3) In your opinion, how can a school principal promote a shared vision and create a desired future state? Please illustrate with some examples from your school. [question related to shared vision]

(4) In your opinion, how can a school principal promote group experiences in collective learning, inquiry and collaboration among staff? Please illustrate with some examples from your school. [question related to team learning]

(5) In your opinion, how can a school principal help staff recognise the connections, relationships and broader impact of their actions as individuals or groups? Please illustrate with some examples from your school. [question related to systems thinking]

Appendix 3: List of Variables and Their Measurement

Variable	Abbreviation	Measurement
Demographic variables		
School Type	LEVEL	Primary or secondary school
Staff Size	SIZE	Total number of staff in the school
School History	HIS	Years of operation since establishment
Period of Current Principalship	CP	Years during which a school is led by its current principal
Variables measuring school leadership		
Idealised Influence Attributed	IIA	Sum of scores for items 1 to 4 on the SLQ
Idealised Influence Behaviour	IIB	Sum of scores for items 5 to 8 on the SLQ
Inspirational Motivation	IM	Sum of scores for items 9 to 12 on the SLQ
Intellectual Stimulation	IS	Sum of scores for items 13 to 16 on the SLQ
Individualised Consideration	IC	Sum of scores for items 17 to 20 on the SLQ
Contingent Reward	CR	Sum of scores for items 21 to 24 on the SLQ
Management-by-Exception (Active)	MBEA	Sum of scores for items 25 to 28 on the SLQ
Management-by-Exception (Passive)	MBEP	Sum of scores for items 29 to 32 on the SLQ
Laissez-faire	LF	Sum of scores for items 33 to 36 on the SLQ
Transformational Leadership	TF	Sum of scores for IIA, IIB, IM, IS and IC
Transactional Leadership	TS	Sum of scores for CR, MBEA and MBEP
Laissez-faire Leadership	LF	Same as Laissez-faire
Variables measuring learning organisation characteristics		
Personal Mastery	PM	Sum of scores for items 1 to 6 on the LSA
Mental Model	MM	Sum of scores for items 7 to 11 on the LSA
Shared Vision	SV	Sum of scores for items 12 to 16 on the LSA
Team Learning	TL	Sum of scores for items 17 to 24 on the LSA
Systems Thinking	ST	Sum of scores for items 25 to 29 on the LSA
Overall Learning Organisation Score	LO	Sum of scores for PM, MM, SV, TL and ST

Appendix 4: Independent and Dependent Variables Associated with Each Research Question

220Research Question	Dependent Variable(s)	Independent Variable(s)	Research Method(s)
1a	Variables measuring school leadership	-	Survey
1b	TF, TS, LF	LEVEL, CP	
2a	Variables measuring learning organisation characteristics	-	
2b	Variables measuring learning organisation characteristics	LEVEL, SIZE, HIS, CP	
3	Variables measuring learning organisation characteristics	Variables measuring school leadership	
4	LO	TF, TS, LF, SIZE, HIS, CP,	
5	Variables measuring learning organisation characteristics	Variables measuring school leadership	Survey and interview

Appendix 5a: Email to School Principals

Invitation to Participate in Survey

A study to explore how the leadership styles adopted by school principals in Hong Kong relate to schools' capability to become learning organisations

Dear principal,

Participation from your teachers in a survey is sincerely invited as part of the captioned research project which aims to explore how the leadership styles of school principals relate to schools' capability to become learning organisations. Findings of the research will be useful in providing insights for schools in Hong Kong to improve their learning capacity through more effective leadership.

After the survey, a small proportion of the respondents (those who have indicated willingness to be interviewed on their completed questionnaires) may be invited for an individual interview which lasts from 30 to 45 minutes. The interview will be conducted in Cantonese, audio-taped and information collected will be transcribed into English.

All the information collected will be kept **confidential**. Only aggregated findings will appear in the final report. Teachers' participation is purely **voluntary** and they are under no obligation to provide any information against their will. They are also free to withdraw from participation at any time if they wish. No payment will be rewarded but a copy of the final report can be provided for participants (those who have indicated desire to obtain a copy on their completed questionnaires) when it is completed.

An information sheet containing more details is attached for your consideration. Your support will be much appreciated. Please encourage participation from your teachers by forwarding the attached invitation letter, information sheet and the two questionnaires **Learning School Assessment** and **School Leadership Questionnaire** to them. The data collected may be used in my research study as partial fulfilment of the requirements for the degree of Doctor of Business Administration at the University of South Australia.

For enquiries or comments, please do not hesitate to contact me at 9211 2572. Thanks very much for your help.

Janet Wai-Yin LO
DBA Student, intake 9 (Hong Kong)
International Graduate School of Management
University of South Australia

Appendix 5b: Letter to Teachers

Invitation to Participate in Survey

A study to explore how the leadership styles adopted by school principals in Hong Kong relate to schools' capability to become learning organisations

Dear teacher,

Your participation in a survey is sincerely invited as part of the captioned research project which aims to explore how the leadership styles of school principals relate to schools' capability to become learning organisations. Findings of the research will be useful in providing insights for schools in Hong Kong to improve their learning capacity through more effective leadership.

After the survey, a small proportion of the respondents (those who have indicated willingness to be interviewed on their completed questionnaires) may be invited for an individual interview which lasts from 30 to 45 minutes. The interview will be conducted in Cantonese, audio-taped and information collected will be transcribed into English.

All the information collected will be kept **confidential**. Only aggregated findings will appear in the final report. Your participation is purely **voluntary** and you are under no obligation to provide any information against your will. You are also free to withdraw from participation at any time if you wish. No payment will be rewarded but a copy of the final report can be provided for participants (those who have indicated desire to obtain a copy on their completed questionnaires) when it is completed.

Your support will be much appreciated. An information sheet containing more details is attached for your consideration. The data collected may be used in my research study as partial fulfilment of the requirements for the degree of Doctor of Business Administration at the University of South Australia. If you are interested to participate, please complete the attached questionnaires **Learning School Assessment** and **School Leadership Questionnaire**, and return them to me via fax (2641 8370) or email (janetlo@netvigator.com).

For enquiries or comments, please do not hesitate to contact me at 9211 2572. Thanks very much for your help.

Janet Wai-Yin LO
DBA Student, intake 9 (Hong Kong)
International Graduate School of Management
University of South Australia

Appendix 6: Information Sheet

University of South Australia

International Graduate School of Management

Information Sheet: A study to explore how the leadership styles adopted by school principals in Hong Kong relate to schools' capability to become learning organisations

by Janet Wai-Yin LO, B.Sc., M.Ed.

Tel: 9211 2572

Your participation in a survey is sincerely invited as part of the captioned research project which aims at answering the following questions:

(1) To what extent do schools in Hong Kong display characteristics of the learning organisation?

(2) What prevalent leadership styles are adopted by school principals in Hong Kong?

(3) What is the relationship between the leadership styles of school principals and the extent to which schools display characteristics of the learning organisation?

(4) What attributes of the school principals and their leadership behaviours foster the practice of learning organisation principles in schools?

Findings of the research will be useful in providing insights for schools in Hong Kong to improve their learning capacity through more effective leadership. The study can contribute to new knowledge through identifying the leadership style and behaviours most likely to turn schools into learning organisations. It can also raise the awareness of school principals and teachers that change can be regarded as an opportunity to learn and work more collaboratively together.

Participation involves completing two questionnaires which are the **Learning School Assessment** and the **School Leadership Questionnaire**, and returning them to me via fax (2641 8370) or email (janetlo@netvigator.com). After the survey, a small proportion of the respondents (those who have indicated willingness to be interviewed on their completed questionnaires) may be invited for an individual interview which lasts from 30 to 45 minutes. The interview will be conducted in Cantonese, audio-taped and information collected will be transcribed into English.

All the information collected will be kept **confidential**. Every care will be taken to remove responses from any identifying material as early as possible. Likewise individuals' responses and all records containing personal information will be kept confidential and not be identified in the reporting of the research. Only aggregated findings will appear in the final report. However, I cannot guarantee the confidentiality or anonymity of materials transferred by email or the internet. All information collected as part of the study including survey responses, tapes and their transcripts will be retained and securely kept for seven years in my private dwelling to ensure confidentiality.

Your participation is purely **voluntary** and you are under no obligation to provide any information against your will. You are also free to withdraw from participation at any time if you wish without affecting your position. No payment will be rewarded but a copy of the final report can be provided for participants (those who have indicated desire to obtain a copy on their completed questionnaires) when it is completed.

Your support will be much appreciated. The data collected may be used in my research study as partial fulfilment of the requirements for the degree of Doctor of Business Administration at the University of South Australia. For enquiries or comments, please do not hesitate to contact me at 9211 2572.

If you have any ethical concerns about the conduct of this research, please contact:

Ms. Becci Love, Program Administrator (Doctoral)
International Graduate School of Management
Division of Business and Enterprise
University of South Australia
Tel: +61 8 8302 0475
Fax: +61 8 8302 0709
Email: becci.love@unisa.edu.au
Room WL-5 37 City West Campus
www.unisanet.unisa.edu.au/bue_doctoral/
CRICOS Provider No. 00121B

Appendix 7a: Consent Form - Participation in Interview

Project Title: The Influence of Leadership Style on Schools as Learning Organisations in Hong Kong

Researcher's Name: Janet Wai-Yin LO

Supervisor's Name: Dr. LIM Yew Ban

- I have received information about this research project.
- I understand the purpose of the research project and my involvement in it.
- I understand that I will be audiotaped during the interview.
- I understand that I may withdraw from the interview at any stage.
- I understand that while information gained during the study may be published, I will not be identified and my personal responses will remain confidential.

Name of Participant: _____

Signed: _____

Date: _____

I have provided information about the research to the participant and believe that he/she understands what is involved.

Researcher's Signature: _____

Date: _____

Appendix 7b: Consent Form - Retainment of Audiotaped Materials

Project Title: The Influence of Leadership Style on Schools as Learning Organisations in Hong Kong

Researcher's Name: Janet Wai-Yin LO

Supervisor's Name: Dr. LIM Yew Ban

- I have read the information, and the nature and the purpose of the research project has been explained to me. I understand and agree to take part.
- I understand that I may not directly benefit from taking part in the project.
- I understand that I can withdraw from the study at any stage and that this will not affect my status now or in the future.
- I confirm that I am over 18 years of age.
- I understand that I will be audiotaped during the study.
- I understand that the tape and its transcripts will be retained by the researcher and stored in a locked safe at her residence for a period of seven years. The researcher and her supervisors will maintain exclusive access to the tapes for research purpose.

Name of Participant: _____

Signed: _____

Date: _____

I have explained the study to the participant and consider that he/she understands what is involved.

Researcher's Signature: _____

Date: _____