LEADERSHIP STYLE, ORGANISATIONAL LEARNING AND THE USE OF ICT IN SECONDARY SCHOOLS IN THE KOTA KINABALU DIVISION, SABAH

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<table>
<thead>
<tr>
<th><strong>Borang Pengesahan Status Tesis</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ijdlul:</strong> Leadership Style, Organisational Learning and the Use of ICT in Secondary Schools in the Kota Kinabalu Division, Sabah.</td>
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<tr>
<td><strong>Sesi Pengajian:</strong> 2007 - 2011</td>
</tr>
</tbody>
</table>

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ABSTRACT

LEADERSHIP STYLE, ORGANISATIONAL LEARNING AND THE USE OF ICT IN SECONDARY SCHOOLS IN THE KOTA KINABALU DIVISION, SABAH

This study examines Leadership style, Organisational Learning and the use of ICT in the teaching learning process in secondary schools in the Kota Kinabalu Division, Sabah. Seven research questions and 26 hypotheses were formulated for examination. Three instruments in the form of questionnaires were developed to measure the three variables in the study. The questionnaires were distributed to 693 teachers from all the 37 schools in the Kota Kinabalu Division. Six hundred and fifty nine respondents or 95.1% returned the questionnaires. The data collected was analysed using the SPSS 17 package. The findings show that the teachers perceived their school principals display strong leadership (m=3.84, SD=.59), strong Transactional Leadership style (m=3.94, SD=.63), strong Transformational Leadership style (m=3.95, SD=.49), and strong ICT Leadership style (m=3.51, SD=.79). Organisational Learning was also strong (m=3.94, SD=.49). ICT use in teaching learning was at moderate level (m=2.99, SD=.95). The findings also show that there was a weak relationship between Leadership style and ICT use (r=.299, p<.01), a moderate relationship between Organisational Learning and ICT use (r=.330, p<.01) and a strong relationship between Leadership style and Organisational Learning (r=.643, p<.01). The relationship between Organisational Learning and ICT use was stronger than the relationship between Leadership style and Organisational Learning. Leadership and Organisational Learning scores contributed to 12.5% variance of ICT use. (r=.354, p<.01). Based on the findings, recommendations were made for school principals and education officers.
ABSTRAK

Kajian ini mengkaji stail Kepimpinan, Pembelajaran Organisasi dan penggunaan TMK dalam pengajaran pembelajaran di sekolah-sekolah menengah di Gabungan Kota Kinabalu. Tujuh soalan kajian dan 26 hipotesis direka untuk dikaji. Tiga instrumen soal selidik dibina untuk mengukur ketiga-tiga pemboleh ubah kajian. Semua soal selidik diedarkan kepada 693 orang guru dari semua 37 buah sekolah menengah di Gabungan Kota Kinabalu. Enam ratus dan lima puluh sembilan atau 95.1% responden mengembalikan soal selidik itu. Data yang diperoleh dianalisis menggunakan SPSS 17. Dapatan kajian menunjukkan bahawa guru-guru mendapati pengetua mereka mempamerkan Kepimpinan yang kuat (m=3.84, SD=.59), stail Kepimpinan Transaksi yang kuat (m=3.94, SD=.63), stail Kepimpinan Transformasi yang kuat (m=3.95, SD=.49), dan stail Kepimpinan ICT yang kuat (m=3.51, SD=.79). Pembelajaran Organisasi juga kuat (m=3.94, SD=.49). Penggunaan TMK dalam pengajaran pembelajaran adalah pada tahap sederhana (m=2.99, SD=.95). Dapatan kajian juga menunjukkan hubungan yang lemah di antara stail Kepimpinan dan penggunaan TMK (r=.299, p<.01), hubungan yang sederhana di antara Pembelajaran Organisasi dan penggunaan TMK (r=.330, p<.01) dan hubungan yang kuat di antara stail Kepimpinan dan Pembelajaran Organisasi (r=.643, p<.01). Hubungan antara Pembelajaran Organisasi dan penggunaan TMK adalah lebih kuat daripada hubungan antara stail Kepimpinan dan penggunaan TMK. Skor Kepimpinan dan Pembelajaran Organisasi menyumbang kepada 12.5% varians dalam skor penggunaan TMK dalam pengajaran pembelajaran (r=.354, p<.01). Berdasarkan dapatan kajian, cadangan-cadangan dikemukakan untuk tindakan para pengetua dan para pengawai pendidikan.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>TITLE</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>DECLARATION</td>
<td>ii</td>
</tr>
<tr>
<td>CERTIFICATION</td>
<td>iii</td>
</tr>
<tr>
<td>ACKNOWLEDGEMENT</td>
<td>iv</td>
</tr>
<tr>
<td>ABSTRACT</td>
<td>v</td>
</tr>
<tr>
<td>ABSTRAK</td>
<td>vi</td>
</tr>
<tr>
<td>TABLE OF CONTENTS</td>
<td>vii</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>x</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>xii</td>
</tr>
<tr>
<td>LIST OF ABBREVIATIONS</td>
<td>xiii</td>
</tr>
</tbody>
</table>

## CHAPTER 1: INTRODUCTION

1.1 Introduction                      | 1    |
1.2 Background of the research        | 2    |
1.2.1 Secondary schools in Malaysia   | 2    |
1.2.2 Leadership in secondary schools | 4    |
1.2.3 Organisational learning in secondary schools | 6    |
1.2.4 ICT use in secondary schools    | 7    |
1.3 Statement of the problem          | 11   |
1.4 Objectives of the research        | 14   |
1.5 Research questions                | 15   |
1.6 Conceptual framework              | 15   |
1.7 Research hypotheses               | 16   |
1.8 Significance of the research      | 17   |
1.9 Limitations of the research       | 18   |
1.10 Operational definitions          | 19   |
1.11 Overview of the thesis           | 21   |
1.12 Summary                          | 22   |

## CHAPTER 2: LITERATURE REVIEW

2.1 Introduction                      | 23   |
2.2 Leadership                        | 23   |
2.2.1 Definitions and concepts        | 23   |
2.2.2 A brief overview of early approaches to leadership | 28   |
2.2.3 Transactional Leadership style  | 32   |
2.2.4 Transformational Leadership style | 34   |
2.2.5 ICT Leadership style            | 39   |
2.3 Organisational Learning           | 42   |
2.3.1 Definitions and concepts        | 42   |
2.3.2 Organisational learning theories | 43   |
2.3.3 Characteristics of learning organisations | 46   |
2.3.4 Organisational learning in schools | 50   |
2.4 ICT use in teaching learning      | 51   |
2.4.1 Definitions and concepts        | 51   |
2.4.2 Phases of ICT integration       | 52   |
2.4.3 Managing the change to ICT use in teaching learning | 56   |
2.5 Related studies
2.5.1 Leadership in secondary schools 58
2.5.2 Organisational learning in secondary schools 60
2.5.3 The use of ICT in teaching learning 61
2.5.4 Leadership and ICT use 63
2.5.5 Leadership and Organisational Learning 64
2.5.6 Leadership, Organisational Learning and ICT use 66

2.6 Summary 71

CHAPTER 3: METHODOLOGY
3.1 Introduction 73
3.2 Research design 73
3.3 Instrumentation 75
3.4 Developing the instrument 81
3.4.1 The field test 81
3.4.2 Validity of the instrument 82
3.4.3 Pilot studies 83
3.4.4 Factor analysis 86
3.4.5 Amended instrument 88
3.5 Amended framework 92
3.6 Amended hypotheses 92
3.7 Population 92
3.8 Sampling 93
3.9 Data collection 94
3.10 Data analysis 96
3.11 Measuring the variables and subvariables 98
3.12 Ethical issues 100
3.13 Summary 100

CHAPTER 4: FINDINGS
4.1 Introduction 101
4.2 Profile of respondents and schools 101
4.3 Findings to the research questions 107
4.3.1 To what extent do secondary school principals display Transformational, Transactional and ICT Leadership styles? 107
4.3.2 What is the level of Organisational Learning in secondary schools? 109
4.3.3 What is the level of ICT use in the teaching learning process? 110
4.3.4 What is the relationship between Leadership style and ICT use? 113
4.3.5 What is the relationship between Organisational Learning and ICT use? 115
4.3.6 What is the relationship between Leadership style and Organisational Learning? 115
4.3.7 What contribution do both Leadership and Organisational Learning make to the prediction of ICT use? 118
4.4 Summary 120
# CHAPTER 5: DISCUSSION

5.1 Introduction 122
5.2 Discussion of findings 122
   5.2.1 School principal leadership style 122
   5.2.2 Organisational Learning in secondary schools 125
   5.2.3 ICT use in teaching learning in the teaching learning process 126
   5.2.4 Correlation between Leadership style and ICT use 132
   5.2.5 Correlation between Organisational Learning and ICT use 134
   5.2.6 Correlation between Leadership style and Organisational Learning 136
   5.2.7 Leadership, Organisational Learning and ICT use 138
5.3 Implications and recommendations 139
   5.3.1 Recommendations for school principals 139
   5.3.2 Recommendations for education officers 145
   5.3.3 Recommendations for further study 149
5.4 Conclusion 150

References 153

Appendices
A Questionnaires 170
B Panel of experts 180
C List of schools 181
D Factor analysis output 182
E Data display 188
F Permission to carry out the research from the Ministry of Education Malaysia 192
G Permission to carry out the research from the State Education Department Sabah 193
H Letters to District Education Officers seeking permission to carry out the research 194
I Letters to school principals seeking permission and cooperation in carrying out the research 197
J Instructions to school coordinators on the procedures in administering the questionnaires to teachers 198
K Certification of checking the Malay Language component of questionnaire by Dewan Bahasa and Pustaka 199
L Papers presented and publications 200
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 1.1</td>
<td>List of obstacles highlighted by respondents across countries</td>
<td>12</td>
</tr>
<tr>
<td>Table 2.1</td>
<td>Cross-cultural comparisons of characteristics of admired leaders</td>
<td>24</td>
</tr>
<tr>
<td>Table 2.2</td>
<td>Differences between a leader and a manager</td>
<td>25</td>
</tr>
<tr>
<td>Table 2.3</td>
<td>Differences between a Transactional and a Transformational Leader</td>
<td>37</td>
</tr>
<tr>
<td>Table 3.1</td>
<td>Operationalisation of the Leadership variable</td>
<td>76</td>
</tr>
<tr>
<td>Table 3.2</td>
<td>Operationalisation of the Organisational Learning variable</td>
<td>79</td>
</tr>
<tr>
<td>Table 3.3</td>
<td>Operationalisation of the ICT use variable</td>
<td>80</td>
</tr>
<tr>
<td>Table 3.4</td>
<td>Cronbach's Alpha of the Leadership / Organisational Learning / ICT use variable</td>
<td>83</td>
</tr>
<tr>
<td>Table 3.5</td>
<td>Cronbach's Alpha of the Leadership variable and subvariables</td>
<td>84</td>
</tr>
<tr>
<td>Table 3.6</td>
<td>Amended Leadership variable</td>
<td>84</td>
</tr>
<tr>
<td>Table 3.7</td>
<td>Cronbach's Alpha of the Organisational Learning variable and subvariables</td>
<td>84</td>
</tr>
<tr>
<td>Table 3.8</td>
<td>Amended Organisational Learning variable</td>
<td>85</td>
</tr>
<tr>
<td>Table 3.9</td>
<td>Cronbach's Alpha for the amended Organisational Learning variable and subvariables</td>
<td>85</td>
</tr>
<tr>
<td>Table 3.10</td>
<td>Cronbach's Alpha of the ICT use variable</td>
<td>86</td>
</tr>
<tr>
<td>Table 3.11</td>
<td>Cronbach's Alpha for the 1st and 2nd Pilot Tests</td>
<td>86</td>
</tr>
<tr>
<td>Table 3.12</td>
<td>Amended Leadership instrument</td>
<td>89</td>
</tr>
<tr>
<td>Table 3.13</td>
<td>Amended Organisational Learning instrument</td>
<td>91</td>
</tr>
<tr>
<td>Table 3.14</td>
<td>Reliability coefficients of amended Leadership and Organisational Learning instrument</td>
<td>91</td>
</tr>
<tr>
<td>Table 3.15</td>
<td>Normality values of the amended instrument</td>
<td>92</td>
</tr>
<tr>
<td>Table 3.16</td>
<td>Data analysis</td>
<td>97</td>
</tr>
<tr>
<td>Table 3.17</td>
<td>Categories of Leadership</td>
<td>98</td>
</tr>
<tr>
<td>Table 3.18</td>
<td>Categories of Organisational Learning and ICT use</td>
<td>99</td>
</tr>
<tr>
<td>Table 3.19</td>
<td>Mean level of Leadership, Organisational Learning and ICT use</td>
<td>99</td>
</tr>
<tr>
<td>Table 3.20</td>
<td>Strength of correlation</td>
<td>100</td>
</tr>
<tr>
<td>Table 4.1</td>
<td>Percentage of male and female respondents</td>
<td>101</td>
</tr>
<tr>
<td>Table 4.2</td>
<td>Respondents' positions in schools</td>
<td>102</td>
</tr>
<tr>
<td>Table 4.3</td>
<td>Percentage of teachers using computers outside schools</td>
<td>102</td>
</tr>
<tr>
<td>Table 4.4</td>
<td>Average number of ICT courses attended by each teacher 2006-2009</td>
<td>102</td>
</tr>
<tr>
<td>Table 4.5</td>
<td>Percentage of teachers attending 0 courses to more than 12 ICT courses</td>
<td>103</td>
</tr>
<tr>
<td>Table 4.6</td>
<td>Respondents' ICT skills</td>
<td>103</td>
</tr>
<tr>
<td>Table 4.7</td>
<td>Respondents' beliefs about ICT</td>
<td>104</td>
</tr>
<tr>
<td>Table 4.8</td>
<td>Respondents' level of comfort with using ICT</td>
<td>104</td>
</tr>
<tr>
<td>Table 4.9</td>
<td>Average number of students and teachers in each school</td>
<td>105</td>
</tr>
<tr>
<td>Table 4.10</td>
<td>Percentage of schools with teachers having laptops</td>
<td>105</td>
</tr>
<tr>
<td>Table 4.11</td>
<td>Percentage of schools with computer laboratories</td>
<td>106</td>
</tr>
<tr>
<td>Table 4.12</td>
<td>Percentage of schools with computers and projectors and Internet in the classrooms</td>
<td>106</td>
</tr>
<tr>
<td>Figure</td>
<td>Description</td>
<td>Page</td>
</tr>
<tr>
<td>------------</td>
<td>--------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Figure 1.1</td>
<td>Conceptual framework</td>
<td>15</td>
</tr>
<tr>
<td>Figure 2.1</td>
<td>The Managerial Grid</td>
<td>29</td>
</tr>
<tr>
<td>Figure 5.1</td>
<td>Model of Continuing Professional Development</td>
<td>144</td>
</tr>
</tbody>
</table>
**LIST OF ABBREVIATIONS**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRSS:</td>
<td>Fast Response Survey System</td>
</tr>
<tr>
<td>ICT:</td>
<td>Information and Communications Technologies</td>
</tr>
<tr>
<td>ICTL:</td>
<td>Information and Communications Technology Literacy</td>
</tr>
<tr>
<td>KPM:</td>
<td>Kementerian Pelajaran Malaysia (Ministry of Education Malaysia)</td>
</tr>
<tr>
<td>LB:</td>
<td>Leadership Behaviour</td>
</tr>
<tr>
<td>MP:</td>
<td>Mesyuarat Professional (Professional Meeting)</td>
</tr>
<tr>
<td>MOEM:</td>
<td>Ministry of Education Malaysia</td>
</tr>
<tr>
<td>MOES:</td>
<td>Ministry of Education Singapore</td>
</tr>
<tr>
<td>MP:</td>
<td>Master Plan</td>
</tr>
<tr>
<td>OECD:</td>
<td>Organisation for Economic Cooperation and Development</td>
</tr>
<tr>
<td>OL:</td>
<td>Organisational Learning</td>
</tr>
<tr>
<td>PPA:</td>
<td>Peraturan-Peraturan Awam</td>
</tr>
<tr>
<td>PPD:</td>
<td>Pejabat Pendidikan Daerah (District Education Office)</td>
</tr>
<tr>
<td>PPK:</td>
<td>Pusat Perkembangan Kurikulum (Curriculum Development Centre)</td>
</tr>
<tr>
<td>PKPSM:</td>
<td>Persidangan Kebangsaan Pengetua-Pengetua Sekolah Menengah (National Conference of Secondary School Principals)</td>
</tr>
<tr>
<td>SPP:</td>
<td>Surat Pekeliling Perkhidmatan (Service Circular)</td>
</tr>
<tr>
<td>SPI:</td>
<td>Surat Pekeliling Ikhtisas (Professional Circular)</td>
</tr>
<tr>
<td>TMK:</td>
<td>Teknologi Maklumat dan Komunikasi (ICT)</td>
</tr>
<tr>
<td>UNDP:</td>
<td>United Nations Developmental Programme</td>
</tr>
<tr>
<td>UNESCO:</td>
<td>United Nations Educational, Scientific and Cultural Organisation</td>
</tr>
</tbody>
</table>
CHAPTER 1

INTRODUCTION

1.1 Introduction

‘Educational progress and development is the foundation a nation’s civilisation is built upon’ (Ahamad, 2005:170). This statement by Ahamad Sipon, the then Director General of Education, Malaysia reflects the importance of education in Malaysia. The Malaysian education system has come a long way since the country gained independence in 1957. A year before independence, the government launched the national education system introducing the national curriculum. Nine-year universal education was introduced in 1964. In 1988, the Ministry of Education Malaysia (MOEM) formulated the Malaysian National Education Philosophy. This Philosophy states that education in Malaysia is a continuous effort towards developing individuals’ potential in a holistic and integrated manner (KPM, 2006a). Education in Malaysia is to produce intellectually, emotionally, spiritually and physically balanced citizens based on a belief in God. The MOEM expanded universal education to eleven years in 1998 and mandated compulsory primary education in 2002. In 2004, the MOEM launched the ‘Schools to Careers’ project to introduce vocational subjects into day schools (MOEM, 2005).

The important role of education in the nation’s development is underlined in the second and third thrusts of Vision 2020. The thrusts are aimed at building the nation’s knowledge and innovative capacity, inculcating first class mentality, and addressing the socio-economic imbalance. Towards this end, the MOEM introduced various schemes such as the textbook loan scheme, educational television, scholarships, fully residential schools, and tuition vouchers for poor students. The Malaysian Education Blueprint 2006-2010 put forward six major objectives of education (KPM, 2006a). The first was to develop individuals’ potential in line with the national education philosophy. The second was to improve students’ creativity, innovativeness, and knowledge culture. The third was to instil science and technology culture and lifelong learning. The fourth was to prepare a more effective and world-class education system. The fifth was to make Malaysia a centre of academic excellence. The sixth was to uplift the status of Malaysian education system at the international level. Six focuses were mapped out to
achieve these major objectives: building the Malaysian race; developing the human
capital; empowering national schools; bridging the education gap; uplifting the status of
the teaching profession and accelerating academic institution excellence (KPM, 2006a)

The importance on education placed by the Malaysian government is also
reflected by the biggest portion of the national budget allotted to the Education Ministry
annually. The education ministry is also one of the most important ministries in
Malaysia. All the prime ministers, except the first, have held the Education Minister
portfolio one time or the other.

1.2 Background of the study

1.2.1 Secondary schools in Malaysia
With such strong emphasis on education, secondary schools in Malaysia, as in other
sectors of the education ministry, are growing rapidly. The number of secondary
schools grew from 1,327 accommodating 1.37 million students in the year 1990 to
2,248 schools accommodating 2.34 million students in the year 2010. About 61% of
the schools are in the urban areas whilst 31.9 % are in the rural areas. The number of
teachers rose from 72,455 to 175,267 in the year 2010 (MOEM, 2010).

Secondary schools in Malaysia come in all shapes and sizes. They differ in size,
student and teacher population, infrastructure, location, ethnic make-up, accessibility
and local culture. Some schools are huge multimillion complexes comprising many
blocks of classrooms, laboratories, workshops, computer laboratories, big libraries,
audio visual and other special rooms, and with very impressive high tech facilities.
Then, there are schools, which are very small and congested, with very basic facilities
and without computer laboratories, halls, and multimedia rooms. There are secondary
schools in the middle of very busy towns. There are secondary schools at the edge of
jungles, on remote palm oil estates and on remote islands. Secondary schools differ in
roles and functions too. Generally, secondary schools are divided into three categories:
academic schools, technical schools and religious schools (Akta Pendidikan, 1996). The
academic schools focus on academic subjects whilst the technical schools focus on
technical subjects and religious schools on religious subjects, besides having the same
core subjects. The academic schools are further divided into national schools, mission
schools, and national-type Chinese and Tamil schools. The national schools are also
divided into day and fully residential schools. National schools, mission schools, national-type schools, and religious schools take in students who have undergone six years of primary education. Technical schools take in students who have completed six years of primary and three years of lower secondary education. Fully residential schools are academic schools too, but they focus on science subjects and cater for students who have excelled in the public examinations. All students in these different types of secondary schools follow a central curriculum (Akta Pendidikan 1996). They sit for the same central assessment and public examination. Students in all schools have to follow a series of compulsory core subjects, in addition to their special or elective subjects.

Secondary education consists of five (Form 1 to Form 5) to seven (Form 1 to Form 6) years of schooling. Students come into secondary schools after attending six years of primary education (Akta Pendidikan, 1996). The first three years of education in secondary schools is known as lower secondary education. At the end of the third year, the students sit for the Lower Secondary Assessment and later proceed to another two years of upper secondary education, generally in the same school. A small number may proceed to fully residential schools or technical schools. At the end of upper secondary education, the students sit for the Malaysia Certificate of Education, the local equivalent of ‘O-levels’. From here, secondary school students will proceed to either post secondary education (Form 6) in the same or another secondary school, or to matriculation colleges, universities, or move into the workforce. Not all secondary schools have Form 6. Students from non-Form 6 schools will have to move schools if they want to proceed to Form 6. Acceptance into Form 6 is not automatic and depends on the students’ Malaysia Certificate of Education results. Form 6 consists of two years of schooling. At the end of Form 6, students sit for the Malaysia Higher School Certificate, the equivalent of ‘A-levels’. After sitting for the Malaysia Higher School Certificate, students either proceed to tertiary education or enter the workforce. All the three public examinations are very important. Schools, parents, the state education departments, and the education ministry place huge emphasis on these public examinations. The results of these public examinations are heavily scrutinised by many parties. State education departments rank their schools according to schools’ performance at public examinations. The media gives extensive coverage. Indeed, the Ministry and the public regard public examination results as the benchmark of school effectiveness (SPI, 2010).
Besides studying academic subjects, students in secondary schools take part in three co-curricular activities: academic societies, sports and games, uniformed bodies and clubs (SPI, 1989). The schoolteachers, themselves, are advisors and sports trainers of these societies and clubs. They conduct these activities out of the academic timetable. This means that students go to school to study academic subjects in the morning and in the afternoon or weekends, they immerse themselves in clubs, sports, and games. These co-curricular activities are not just fun activities but can be stressful too, as schools have to compete at district, division, state, and national levels in the various co-curricular competitions.

1.2.2 Leadership in secondary schools

'Peep into an effective school. You will see a strong leader. Look behind a strong leader. You would not find a failing school'. These often heard statements underscore the importance of leadership in schools. The term 'leadership', has many definitions and concepts. Many associate leadership with values, beliefs, actions, and behaviours of a leader that influence the actions of others in the organisation (Rauch and Behling, 1984; Jacobs and Jacques, 1990; Yukl, 1994). In Malaysian schools, the official leader is the school principal appointed by the Ministry of Education Malaysia (MOEM) to head as well as to lead the school (Heck and Hallinger, 2005). The school principal is responsible for everything that goes within the four walls of the school. The Ministry and the State Education Department guide and govern the schools through administrative and professional circulars. The MOEM appoints school principals from the education fraternity. The appointments are based largely on seniority in service. Beginning 2005, candidates for the principals' post would have to pass the public service competency test before being eligible. Candidates for the principal post normally would have at least ten years experience in the education service. Thus, officers appointed to the principal’s post can be as young as 36 years of age and as old as almost fifty. Even though all of them are appointed from the same education service, they come with different experiences and background. Some might have some managing experiences as senior assistants in their previous schools. Others might have experiences training teachers in teacher training institutes, or have experiences training in-service teachers as officers in the state, division, or district education office. Yet, others might have supervisory and advisory experiences as school inspectors at district or state level. However, there are also those without any experience other than the ordinary teaching experience. As individuals behave according to their beliefs, values...
and experiences, one would expect the different school leaders to manage and lead their schools differently. This difference in leadership behaviours is exacerbated by the different organisational context and organisational culture in which they are placed. School principals in Malaysia can be placed anywhere and not necessarily in their hometown, though usually in their home state. Indeed, there are principals who are placed so far away from their hometown that they have to take a plane to work! A number commute daily or weekly over 80 km between their schools and homes. Principals who grew up in towns or cities might suddenly find themselves at the edge of a jungle, on an island or in the middle of a huge oil palm estate. Many of the rural areas especially in Sabah and Sarawak are still not well connected, so some school principals would have to plough through treacherous roads using their own four-wheel drive. For even more remote areas, the MOEM provides the schools with speedboats.

Secondary school principals have many roles. Assisted by three or four senior assistants, secondary school principals have to carry out all the roles specified by the education ministry, the civil service, the treasury, the state, division, and the district office. In addition, school principals have to carry out unwritten roles peculiar to their context. In general, school principals manage seven main areas, namely, the curriculum, the teachers, the supporting staff, the students, the building, finance, and the community including parents and education officers (PKPSM, 2010) and chair 18 school committees (Alpha Sigma, 2007). They also have to manage disciplinary problems of teachers and students (PPA, 1993; SPI, 1998a; PKPSM 2010) as well as to attend to complaints from the public (SPI, 1998b). Briefly, school principals have to see that their schools are neat, beautiful, public examination results are good, and their schools win inter-school competitions. They also have to see that students’ discipline problems are kept in check, students’ safety looked after, records kept, classes have teachers, and teachers seen working hard (SPI, 1995; SPI, 1999b; SPI, 1999c; SPI, 2000b). Furthermore, school principals have to balance their school accounts, pay the staff on time, maintain buildings and fixtures, and ensure parents are happy (SPI, 1998c; SPI, 1999a; SPI, 1999c; SPI, 2000a). All school principals have to carry out the same core functions as well as other functions necessary for the smooth running of the school in their particular circumstances. It does not matter whether the school is in the town or at the edge of the jungle. It does not matter if the school does not have the kind of facilities found in other schools. Neither does it matter if the school is understaffed. The school principal has to find ways follow the 135 work procedures
(PKPSM, 2010) and to carry out all the responsibilities that come along with the post. The areas of responsibility are not neatly laid out. Very often, principals have to deal with several areas at the same time. This is especially true for schools with insufficient resources and poor infrastructure; underprivileged and lowly motivated students; under-performing staff, and demanding parents. Very often too, the areas of responsibility conflict with one other as the principal juggles with different priorities. In today's society, secondary school principalship is further challenged by the new demands brought about by new technological advances, new cultures and sub-cultures, new knowledge and new mind-sets. In addition, the Ministry of Education Malaysia, as in many other countries, in an attempt to keep abreast with the different changes happening around the world, continually introduces changes: new subjects, new curricula, new approaches, new standards, and new forms of assessments, new techniques in teaching and new learning materials (Siti Hawa, 1986; Azizah, 1987; Khatijah, 1989).

1.2.3 Organisational learning in secondary schools

As the Ministry of Education Malaysia is continually implementing new changes in schools, continuing professional development is provided to teachers to help them implement the desired change. Continuing professional development for teachers are conducted by the Ministry of Education, the State Education Department, District Education Office and other agencies such as the Teachers Training Institutes and Institut Aminuddin Baki. Teachers who attend such training workshops are expected to implement changes in their teaching learning upon their return to their respective schools as well as conduct in-house training to other teachers.

At the school level, teachers are required to collaborate, work together, and learn from each other (Pava, 1983). Teachers are divided into subject panels based on the subjects they are teaching (SPI, 1986). As members of a subject panel, teachers are to meet regularly to discuss and solve problems relating to teaching learning, prepare yearly plans together, prepare or purchase teaching aids to improve the teaching learning process, analyse students' results for appropriate follow-up actions as well as implement programs to upgrade their own skills and knowledge. In a study of the effectiveness of subject panels in the Language and Social Department in eight schools in the Pontian District of Johore, Malaysia, Shek (2010) found that the teachers perceived the level of cooperation and the level of teamwork to be high.
Workshops and courses are also conducted at school level to improve teachers' skills, knowledge and experience as one of the core duties of the school principal is to develop his or her teachers (Alpha Sigma, 2007; PKPSM, 2010). Schools are also required to set up a Staff Development committee chaired by the school principal and all the Heads of Department are members of the central committee (PPK, 2001; Alpha Sigma, 2007; PKPSM, 2010). The role of the Staff Development Committee is to plan and implement programs to upgrade teachers' skills and knowledge. The programs include workshops, seminars, educational visits, and lectures. Facilitators and speakers for such workshops, seminars, and lectures can come from within the school or invited from other institutions. All teachers have to attend at least seven days of professional development (SPP, 2005). The seven days professional development includes presenting book reviews, attending workshops, reading professional books and professional discussions. All these professional development programs are aimed at enabling teachers to improve their teaching learning as well as to meet new challenges that arise from changes introduced by the Malaysia Ministry of Education (PPK, 2001). However, despite all the training given, teachers are still finding it difficult to meet the new challenges and implement the desired changes in the classroom (Siti Hawa, 1986; Azizah, 1987; Khatijah, 1989).

1.2.4 ICT use in secondary schools

a. The rationale for ICT in education

One of the new challenges is the implementation of ICT in education. The United Nations Development Programme (UNDP) defines ICT as ‘a set of diverse technological tools and resources used to communicate, and to create, disseminate, store and manage information’ (Tinio, 2002:4). Thus, ICT in education is defined here as the use of computer technological tools and resources to communicate, create, disseminate, store, and manage teaching learning. Due to its enormous benefits, education experts welcomed the advent of ICT. Many see it as an innovation that would revolutionise education. One of the most important benefits of ICT is that teachers and students can access the internet and its unlimited store of information in places where there is connectivity anywhere and anytime. According to UNESCO (2005), ICT can improve efficiency and increase access to knowledge and expertise. Teachers and students can choose when they want to learn, what they want to learn or relearn, how they want to learn as well as learn at their own pace. This means that anyone who wants to learn
can reach their own potential without waiting for others or hindering others, even in the comforts of their own bedrooms. Second, ICT enables access to vast amount of resources, even very remote ones. There is a wealth of materials on almost any subject in a variety media and accessible anytime, anywhere by an unlimited number of people in the internet (Fakhrul, 2002). Teachers and students need not be dependent on printed textbooks or library books. This is especially important for those who do not have easy access to the normal printed materials. Being accessible to materials around the world is like being able to bring the outside world into the classroom. Third, compared to printed resources, resources in the internet are very much more up-to-date and current. New information and new knowledge are created and disseminated through the internet by the seconds. Printed textbooks can never keep up with this pace. Even if they can, schools with their limited manpower, time, skills, and financial resources would not likely be able to keep up with the latest collection of books or other printed materials in the market. Fourth, using ICT in education has transformed learning in the classroom into exciting events and journeys for teachers and students (UNESCO, 2007). With videos and a multitude of multimedia computer software that combines sound, colour, moving images, the quality of education can be improved greatly by engaging the students' multi-senses. Fifth, the vast variety of resources and ICT tools available as well as their flexibility of use, enable lessons to be delivered in many different ways (Tinio, 2002). This helps to sustain students' interest as well as meeting the students' different needs and learning styles. Three-dimensional graphics can make explicit abstract knowledge. Simulation and visualisation technologies help students to learn complex systems in ways that are more concrete. Interactive mode of learning resources can be used to get students more engaged in the construction of the content. Students can be given tasks that enable them to learn by doing projects related to real-life situations (UNESCO, 2007). Here, students explore knowledge, compare and contrast, analyse and synthesise, and create rather than just learning passively. Sixth, the computer enables easy storage, easy creation and modification as well as easy building-up of resources. Finally yet importantly, the internet enables students and teachers to hold discussions as well as share resources with others within the school and around the world (Tung and Kapp, 2006).

Many research studies confirmed the benefits discussed above. Research by Mann et al. (1999) indicated that ICT could be very effective in the following areas:

1. accessing information from the internet;
ii. reading and language, vocabulary, listening, speaking and reading comprehension;
iii. mathematics, especially on diagnosing and remediating, and solving real problems;
iv. science, to simulate and solve real problems;
v. social studies, to simulate events;
vi. music, to teach musical theory and composition; and,
vii. art, to view virtually great artworks and to learn art composition and design.

b. The implementation of ICT in Education in Malaysia
Malaysia’s experiments with ICT in education began in the 80s (Gan, 2000). In 1986, the Ministry of Education Malaysia (MOEM) piloted a computer literacy project in 20 secondary schools. Form 4 students in these schools learnt basic computer knowledge. In 1989, the Computer in Education Report recommended widespread use of computers to deliver educational programmes. To meet this recommendation, the Atom-1 PC was designed and produced to provide cost effective computers to schools. In 1992, the MOEM piloted a Computer in Education programme in 60 rural schools. The MOEM gave each pilot school 20 Atom-1’s networked computer together with a server. Form 1 and Form 2 students in these schools learnt basic computing concepts. In 1994, the MOEM piloted the Computer-Assisted Learning project in 15 primary schools to help raise the pupils’ achievement level in Mathematics and English. In 1996, the electronic libraries project was piloted in 14 schools to enable them access the Internet and use multimedia applications. In the second half of 1990s, ICT in education was given a new urgency as the Malaysian government began preparing the Malaysian society for globalisation and the information and communication revolution (MOEM, 2005). The then Prime Minister, Tun Dr Mahathir Mohammad, in his speech, ‘The Way Forward’ exhorted Malaysia to be a fully developed country by 2020. The sixth challenge of Vision 2020 underlined the importance of ICT. This challenge is to create a scientific and progressive society that not only uses technology but also contributes to the scientific civilisations and future technologies. ICT was seen as a tool to enable Malaysians to acquire the necessary knowledge, skills and experience to push Malaysia forward and the Smart school project came into being in 1996 (KPM, 2006a). Under this project, the MOEM equipped 83 secondary schools and four primary schools in the country with computers and high tech facilities. The facilities were to enable computer technology and information knowledge be used in the running of the school as well as in the teaching learning process. The project ran from 1999 to 2002 at a cost of 400 million ringgit (KPM, 2006b). The MOEM provided the Smart school principals
REFERENCES


Akta Pendidikan 1996 Kerajaan Malaysia.


presented at the 18th Educational Technology Convention. Terengganu, 16-19 September.


