THE RELATIONSHIPS BETWEEN INSTRUCTIONAL LEADERSHIP BEHAVIOR, SCHOOL CLIMATE AND TEACHER EFFICACY IN SECONDARY SCHOOLS IN KEDAH

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UNIVERSITI UTARA MALAYSIA
2014

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Abstrak

Kepimpinan pengetua mempengaruhi keyakinan guru mengenai kebolehan mereka melaksanakan pengajaran di dalam bilik darjah. Namun begitu, kajian lepas mendapati tingkah laku kepimpinan pengajaran yang mempengaruhi iklim sekolah dan efikasi guru kurang diberi perhatian terutamanya dalam kontek pembelajaran dan pengajaran sekolah di Malaysia. Kajian ini bertujuan untuk mengenal pasti pengaruh tingkah laku kepimpinan pengajaran terhadap iklim sekolah dan efikasi guru. Secara khusus, kajian ini bertujuan untuk meneliti apakah faktor tingkah laku kepimpinan pengajaran merupakan peramal kepada iklim sekolah dan efikasi guru, serta menentukan sama ada iklim sekolah berperanan selaku perantara bagi tingkah laku kepimpinan pengajaran dan efikasi guru. Kajian ini menggunakan kaedah kuantitatif yang melibatkan 340 orang guru sekolah menengah harian di negeri Kedah. Alat ukur yang digunakan terdiri daripada *Instructional Leadership Behavior Instrument* yang dibina sendiri oleh penyelidik, *School Level Environment Questionnaire* yang dibina oleh Johnson, Stevens, dan Zvoch pada 2007 serta *Teacher Self Efficacy Scale* yang dibina oleh Tschannen-Moran dan Hoy pada 2001. Data dianalisis dengan menggunakan peratus, korelasi, regresi berganda stepwise dan hierarki. Hasil kajian menunjukkan faktor tingkah laku kepimpinan pengajaran iaitu memberi maklum balas, memberi pujian, menggalakkan dan menyokong pelbagai pendekatan pembelajaran dan pengajaran, memberi penekanan kepada latihan pembelajaran dan pengajaran, menyokong usaha kolaboratif, dan memulakan kerja pasukan adalah peramal kepada iklim sekolah. Di samping itu, memberi maklum balas, memberi cadangan, menggalakkan dan menyokong pelbagai pendekatan pembelajaran dan pengajaran, membuat keputusan berdasarkan data kajian tindakan, dan menyokong usaha kolaboratif merupakan peramal kepada efikasi guru. Hasil regresi hierarki menunjukkan iklim sekolah bukan merupakan perantara bagi tingkah laku kepimpinan pengajaran dan efikasi guru. Kajian ini memberi sumbangan terhadap bidang kepimpinan pengajaran dengan menekankan kepentingan faktor tingkah laku kepimpinan pengajaran, iklim sekolah dan efikasi guru. Dapatan kajian boleh digunakan untuk membentuk polisi berkaitan dengan peningkatan kualiti pengajaran.

Kata kunci: Tingkah laku kepimpinan pengajaran, Iklim sekolah, Efikasi guru, Sekolah menengah, Maklum balas

Abstract

Leadership of school principals influences teachers' belief in their ability to execute classroom instructions. Nevertheless, previous reports showed that instructional leadership behaviors that influence school climate and teacher efficacy were not given its due attention in the context of Malaysian classroom instructions. This study aimed to identify the influence of instructional leadership behaviors on school climate and teacher efficacy. Specifically, it intended to examine which instructional leadership behaviors factors are the predictors of school climate and teacher efficacy, as well as to determine whether school climate is the mediator between instructional leadership behaviors and teacher efficacy. The study used quantitative method, involving 340 teachers from regular secondary schools in the state of Kedah. The instruments used in this study consist of Instructional Leadership Behavior Instrument developed by the researcher, School Level Environment Questionnaire developed by Johnson, Stevens, and Zvoch in 2007 as well as Teacher Self Efficacy Scale developed by Tschannen-Moran and Hoy in 2001. Data analysis involved percentage, correlation, stepwise and hierarchical multiple regression. Results of the study revealed that instructional leadership behaviors factors namely, giving feedback, giving praise, encouraging and supporting diverse teaching and learning approach, emphasizing the study of teaching and learning, supporting collaboration effort, and initiating teamwork were predictors of school climate. Besides, giving feedback, making suggestions, encouraging and supporting diverse teaching and learning approach, doing action research to inform decision making, and supporting collaboration effort were predictors of teacher efficacy. The results of hierarchical regression suggested that school climate was not a mediator for instructional leadership behaviors and teacher efficacy. This study contributed to instructional leadership field that emphasizes on the importance of factors of instructional leadership behaviors, school climate and teacher efficacy. The findings can be used to develop policies related to enhancing quality of classroom instructions.

Keywords: Instructional leadership behaviour, School climate, Teacher efficacy, Secondary School, Feedback

Acknowledgement

Praises to Him all glory is due!

The inspiration for starting a journey to complete my PhD degree came when I received a new appointment as a senior lecturer at Institut Aminuddin Baki. The last four years have been a lonely journey but I am grateful for the many people around me who have consistently encouraged me to continue what I have started.

First and foremost, I would like to thank my husband, Timothy Wooi, who stands by me in all that I do to fulfil my dreams and aspirations. In the similar note, I also extend words of thanks to my three lovely children, Michelle, Eileen and Joshua. Indeed all of you are my source of inspiration. You give me strength whenever I am tired and weary.

I must also thank my two dedicated and knowledgeable supervisors, Dr. Ishak Sin and Associate Professor Dr. Arsaythamby Veloo, who have spent many hours to guide and help me to see my topic from a more academic prospective as well as reading the many write-ups that I sent in. Their expertise has greatly enhanced my knowledge in the field of educational leadership and management. Words of appreciation also go to Dr. Hajah Nor Asikin binti Saleh who acted as the subject expert of my instructional leadership behaviour questionnaire. And, to all my friends and colleagues at Institut Aminuddin Baki, please know that I appreciate your friendship and sharing of knowledge which has contributed to the completion of this research indirectly.

Finally, the completion of the research is not the end of what I have started. Though some new insights into what I was investigating have been uncovered and the experience has been life-alternating, I look forward to pursue more exciting experience in uncovering what school leaders could do to make schools more exciting for the students. Wish me well, folks!

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List of Abbreviations

OECD - Organization for Economic Co-operation and Development

PIMRS - Principal Instructional Management Rating Scale

OHI – Organizational Health Inventory

OCDQ – Organizational Climate Description Questionnaire

SLEQ - School Level Environment Questionnaire

TSES - Teacher Self-Efficacy Scale

OSTES - Ohio State Teacher Efficacy Scale

CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

Educationists and the public in general are concerned over what contributes to the success and effectiveness of a school. As a matter of fact, the success of school is influenced by myriad factors; some are within the school control while others are beyond the school interference (Coleman et al., 1966; Edmonds, 1979). Educational researchers seeking an answer for this matter have found various factors within school control that contribute to school success. Among others, leadership in school has been identified as an important factor that influences student academic achievement (Alig-Mielcarek, 2003; Andrews & Soders, 1987; Hallinger, 2009; Sanzo, Sherman, & Clayton, 2011). These researchers, however, agreed that the influence of leadership on student academic achievement was indirect.

The search then is to find how school leadership could contribute to student academic achievement. Effective school and school improvement research identified leadership, school climate and teacher quality as school factors that can make a difference on student achievement (Gu, Sammons, & Mehta, 2008; Hoy, Tarter, & Hoy, 2006; Kementerian Pelajaran Malaysia, 2012; Marks & Printy, 2003; Purkey & Smith, 1983). Others mentioned certain style of leadership, i.e. instructional leadership exercised by school principal to have influence on student achievement (Alig-Mielcarek, 2003; Hallinger, Bickman, & Davis, 1996; Opdenakker & Damme, 2007). In view of this, the Kedah State Education Department has identified enhancing instructional leadership capability among the school leaders as one of the

action plans for the attainment of student academic excellence (Jabatan Pelajaran Negeri Kedah Darul Aman, 2013). The Kedah State Education Department hopes that instructional leadership exercised by school leaders would cause an improvement in student achievement as the state strives to be at the top five in the national ranking by 2015. Student academic achievement is the main deciding factor for the realization of the Kedah Top Five aspiration. How does instructional leadership influence student academic achievement then?

Instructional leadership concerns the practices of school leaders that would effect on student achievement. There are quite a number of instructional leadership models in the literature (e.g. Blasé & Blasé, 2000; Hallinger & Murphy, 1985; Hussein Mahmood, 1997; Quah, 2011). These models proposed various categories of instructional leadership behaviors for improving student learning which include developing school missions, managing student learning, promoting positive academic climate, encouraging teacher development, engaging community support just to name a few. Some empirical studies found that the influence of instructional leadership on student achievement is mediated by school climate (Alig-Mielcarek, 2003; Edmonds, 1979: Hallinger, 2009; Leithwood, Harris, & Hopkin, 2008) but others mentioned teacher efficacy as the mediator (Berman, McLaughlin, Bass, Pauly, & Zellman, 1977; Gibson & Dembo, 1984; Ryan, 2007; Ross, 1992; Tschannen-Moran, Hoy, & Hoy, 1998). For example, teacher efficacy was found to influence the quality of classroom instruction (Leithwood et al., 2008), student achievement, attitude and effective growth in their study (Berman et al., 1977; Ross, 1992), persistence in teaching of teachers (Tschannen-Moran et al., 1998), amount of

teaching and learning in the classroom (Ryan, 2007), and teacher instructional behavior (Gibson & Dembo, 1984). The findings suggested that teacher efficacy is a powerful predictor for improved student achievement. Efforts done to elevate teacher efficacy would subsequently cause an increase in student achievement. In sum, these empirical studies suggested that instructional leadership behavior, school climate and teacher efficacy are school variables that influence student achievement.

Nevertheless, the task of adapting the findings of studies on the influence of instructional leadership from other context to another is uncalled for as context has been found to affect the impact of leadership (Bossert, Dwyer, Rowan, & Lee, 1982; Dimmock & Walker, 2000; House, 1996). Bossert et al., (1982) cautioned on the use of unitary construct of principal leadership in his comments "No single style of management seems appropriate for all schools...Principals must find the style and structure most suited to their local situations…Certain principal behaviors have different effects in different organizational settings" (p 40). The influence of context on principal effect has thus suggested that there is a need to conduct separate study for different context. Apart from that, it also raised the importance of identifying different construct of instructional leadership and to examine the pathway how this instructional leadership construct influences school variables which subsequently lead to improved student achievement. In other words, there is a need to identify contextual based instructional leadership construct as well as to examine the pathway of how various factors in the instructional leadership construct influence student achievement. This study reported the findings of a study involving secondary school

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teachers in the state of Kedah to determine the relationships between instructional leadership behavior, school climate and teacher efficacy.

1.2 Statement of the Problem

Empirical studies have suggested that instructional leadership, school climate and teacher efficacy determine student achievement. Nevertheless, an international study involving public secondary schools in Malaysia had a worrisome finding in which the leadership practice, school environment and teacher efficacy were found to be at the level where there is still room for improvement (OECD, 2009). Compared to their foreign counterparts, the study found school leaders in Malaysia did not engage in behaviors that promote student learning. The principals were reported to practice more administrative leadership than instructional leadership. Generally, they focused more on managing accountability to shareholders and ensuring the school is run according to procedures instead of managing school goals, taking actions to improve teachers' instruction and supervising teachers' instruction and learning outcomes. To a certain extent, the findings can be assumed to represent the typical behaviors of all principals in public schools in the country including those who serve in the state of Kedah as all public schools in Malaysia are centrally administered.

In the aspect of school climate, the study found schools to exhibit climate that hinders instruction. Teachers were reported to show a lack in pedagogy preparation and students misbehaved at a level that disturbs teaching and learning in the classroom. As for teacher efficacy, it reported that the level of teacher efficacy was at a not encouraging level as compared to teachers from other countries including

Norway, Italy and Australia. Just like principals' behavior, the Organization for Economic Co-operation and Development's (OECD) finding about school climate and teacher efficacy can be assumed to reflect the schools in the state of Kedah. The findings of the OECD caused a major concern because these three school factors influenced student academic achievement. It appeared that there is a need to examine how instructional leadership behavior could improve teacher pedagogy preparation and managing student misbehavior as well as teacher efficacy so that student achievement can be improved.

The review of educational leadership literature for possible answers to improve secondary schools in the state of Kedah through instructional leadership, school climate and teacher efficacy further enhanced the need for a study. There seemed to be a gap in the literature with regard to the findings of the studies as the findings of previous studies were not consistent. For example, some researchers found that instructional leadership behavior showed significant relationship with teacher efficacy (Blasé & Blasé, 2000; Charf, 2009; Horton, 2013) but others found otherwise (Fancera, 2009). These findings suggested that there is a need to conduct a separate study to validate the relationship between instructional leadership and teacher efficacy

With regard to previous studies that examine instructional leadership and school climate, principals were perceived to be able to shape the climate of the school due to the authority, power and position they have in making decision on policy in their schools (Hoy, Tarter, & Kottkamp, 1991; Kelley, Thornton, & Daugherty, 2005).

Many other researchers have also commented that there was a relationship between leadership and school climate. For example, principals who practice instructional leadership at high level created a school climate that promotes student learning (Alig-Mielcarek, 2003). Besides her, Hallinger et al. (1996) mentioned that the degree of instructional leadership behavior practiced by the principals determined the level of learning climate. Another researcher, Ylimaki (2007) found instructional leadership to influence the learning environment of schools as the behavior of principals determined instructional practices of teachers in the classrooms. Yet, Grizzard (2007) mentioned that there is no relationship between instructional leadership and school climate. As such, these findings also suggested that there is a need to re-examine the relationship between instructional leadership and school climate. In short, the inconsistency in previous research findings as well as a dearth of information in the literature on the relationships between the three predictors of student achievement: instructional leadership, school climate and teacher efficacy had justified the need to examine the relationship between these variables in the current study.

Hallinger et al. (1996) mentioned that much of the literature on the impact of leadership on student achievement utilized bivariate models. As illustrated in the earlier paragraphs, most of recent studies involved only two of the three variables. For example, there were studies that examined the relationships between instructional leadership and teacher efficacy (Blasé & Blasé, 2000; Charf, 2009; Horton, 2013), between instructional leadership and school climate (Alig-Mielcarek, 2003; Frederick, 2007; Lord, 2001; Wan Roslina Wan Ismail, 2011), and between

school climate and teacher efficacy (Brown, 2009; Chong, Klassen, Huan, Wong, & Kates, 2010; Lee et al., 1991). There seems to be a lack of research that examine instructional leadership, school climate and teacher efficacy in a single study.

Sukarmin (2010) included the three variables in his study which was conducted in primary schools in Surakarta, Indonesia. He found school climate to be a perfect mediator for the relationship between instructional leadership and teacher efficacy. The study concluded that there was no relationship between instructional leadership and teacher efficacy when climate was removed from the model. Despite the findings, there is still a need to conduct a separate study as experts had advised against the use of findings from other context for making decision in a different context (Bossert et al., 1982; Dimmock & Walker, 2000).

In the aspect of instructional leadership models, although there are quite a number of models developed by researchers which are supported by theories and have been validated through empirical studies (Andrews & Soder, 1987; Hallinger & Murphy, 1985; Hussein Mahmood, 1997; Quah, 2011), the researcher opined that instructional leadership model should give more weight to developing teacher instructional competency because it influences students' learning. The existing instructional leadership models delineate the various job functions of principals to enhance student achievement. For example, the most widely used model of Hallinger and Murphy (1985) proposed eleven job functions which include framing school goals, communicating school goals, supervising and evaluating instruction, coordinating the curriculum, monitoring student progress, protecting instructional

time, maintaining high visibility, developing and enforcing academic standards, providing incentives for teachers, promoting professional growth and providing incentives for learning. These job functions did not relate much to teacher factor. It stressed more on the behavior of principals getting teachers to contribute to school goals but downplayed the development of teachers. In other words, teacher factor was not given its due attention in this model and other instructional leadership models as well, but previous research claimed that developing teachers as individuals and professionals should be ranked high because teachers' instructional quality determined student learning in the classroom (Barber & Mourshed, 2007; Kementerian Pelajaran Malaysia, 2012; Leithwood et al., 2008; Mourshed, Chijioke, & Barber, 2010).

Apart from that, the findings of Sukarmin (2010) suggested that the widely used Principal Instructional Management Rating Scale (PIMRS) may not be a suitable measure for the independent variable if the dependent variable is school climate. The researcher mentioned there were similarity in the dimensions of PIMRS and school climate measures, citing institutional integrity, teamwork and academic emphasis. As such the PIMRS may not be suitable for use in the study that examines the relationship between instructional leadership and school climate. The findings of Sukarmin as well as the justification given earlier had necessitated the development of a separate instructional leadership measurement that revolves around the behavior of principals improving teachers as individuals and professionals.

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The purposes of the present study were to develop an instructional leadership measurement based on instructional leadership construct that revolves around the behavior of principals developing teacher instructional practice and to use it to investigate the pattern of relationships between instructional leadership behavior, school climate, and teacher efficacy in secondary schools in the state of Kedah.

1.3 Objectives of the Study

The present study investigated the relationships between instructional leadership behavior, school climate, and teacher efficacy in secondary schools. Specifically, this study has the following objectives:

1. To develop an instrument for measuring instructional leadership behavior.

2. To determine whether factors in talking with teacher to encourage reflection and promoting teacher professional growth are predictors of school climate.

3. To determine whether factors in talking with teacher to encourage reflection and promoting teacher professional growth are predictors of teacher efficacy.

4. To determine whether factors in instructional leadership behavior are predictors of school climate and teacher efficacy in secondary schools.

5. To determine whether factors in school climate are predictors of teacher efficacy.

6. To examine the mediating effect of school climate on the relationship between instructional leadership and teacher efficacy.

1.4 Research Questions

Based on the above-mentioned objectives, the relevant research questions for the study are as follows:

1. What are the factors in the instructional leadership behavior measure?

2. Which factors in talking with teacher to encourage reflection and promoting teacher professional growth are the predictors of school climate?

3. Which factors in talking with teacher to encourage reflection and promoting teacher professional growth are the predictors of teacher efficacy?

4. Which factors in instructional leadership behavior are the predictors of school climate and teacher efficacy?

5. Which factors in school climate are the predictors of teacher efficacy?

6. Does school climate mediate the relationship between instructional leadership and teacher efficacy?

1.5 Research Hypotheses

Using the above-mentioned research questions as a guide, hypotheses that demonstrated the postulated relationships between the variables of the study were listed. The theoretical and empirical rationales for the hypothesized relations between the relevant variables are illustrated below. Detailed account on these variables and how they relate to each other can be found in Chapter Two.

Research Question 2: Which factors in talking with teacher to encourage reflection and promoting teacher professional growth are the predictors of school climate?

Empirical studies have found that the instructional leadership behavior of principals affect school climate (Alig-Mielcarek, 2003; Barker, 2007; Frederick, 2007; Kelley et al., 2005; Lord, 2001; Wan Roslina Wan Ismail, 2011). Barker (2007) mentioned that there is a relationship between the following behaviors of principals: defining a clear shared vision, developing a cohesive team in school, involving teachers in decision making, and developing teacher instruction ability and school climate. The study concluded that the more principals engaged in the instructional leadership behavior, the more positive school climate becomes: characterized by better relationship between student and teacher as well as well-behaved students. Wan Roslina Wan Ismail (2011) suggested that instructional leadership behaviors: managing instruction and curriculum, observing and giving feedback, developing positive learning climate, and evaluating instructional program correlated with school climate which was made up of resource support, academic emphasis, leadership influence and morale. Another researcher, Frederick (2007) found that there is relationship between leadership behaviors such as providing supplies, managing student discipline, involving teachers in the process of making decision about school policy, gathering teachers' input about needs for school and treating teachers as professional, and school climate measured in terms of student support, collaboration, empowerment, innovation, and resource adequacy. More findings of the empirical studies that examined these variables were illustrated in Chapter Two. Based on these research findings, it was proposed that:

H_A1: Factors in talking with teacher to encourage reflection, namely making suggestions, giving feedback, giving praise and using inquiry and soliciting advice/opinion, are predictors of school climate.

H_A2: Factors in promoting teacher professional growth, namely emphasizing the study of teaching and learning, supporting collaboration effort, developing coaching relationship among teachers, encouraging and supporting diverse teaching and learning approach, initiating teamwork, and doing action research to inform decision making, are predictors of school climate.

Research Question 3: Which factors in talking with teacher to encourage reflection and promoting teacher professional growth are the predictors of teacher efficacy?

Vari (2011) mentioned that instructional leadership behaviors, including providing time for teacher to collaborate, encouraging change, giving feedback to teachers after walkthroughs and classroom observation caused an improvement in teacher efficacy in the areas of confidence with instruction, student discipline, coping with change and motivating students. Similarly, Scurry (2010) related leadership behaviors such as giving non-threatening feedback, valuing continuous improvement, building collaboration and collegiality to teacher efficacy in the areas of student engagement, instructional strategies and classroom management. While Hipp (1996) suggested that leadership behaviors such as appreciating teacher hard work, managing student discipline, encouraging teamwork and collaboration, promoting innovation and

continual improvement, and encouraging respectful relationships enhanced teacher efficacy. More findings of the empirical studies that examined these variables were illustrated in Chapter Two. Thus, it was proposed that:

H_A3: Factors in talking with teacher to encourage reflection, namely making suggestions, giving feedback, giving praise and using inquiry and soliciting advice/opinion, are predictors of teacher efficacy.

H_A4: Factors in promoting teacher professional growth, namely emphasizing the study of teaching and learning, supporting collaboration effort, developing coaching relationship among teachers, encouraging and supporting diverse teaching and learning approach, initiating teamwork, and doing action research to inform decision making are predictors of teacher efficacy.

Research Question 4: Which factors in instructional leadership behavior are the predictors of school climate and teacher efficacy?

Studies examining the influence of instructional leadership on school climate found affirmative results. The behaviors of principal talking with teachers and promoting teacher professional growth affected perception of school climate. Alig-Mielcarek (2003) suggested that instructional leadership behaviors such as informing teachers on school goals, providing feedback on teaching and learning process and promoting professional growth influences school climate. These behaviors were found to cause

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increased academic climate in schools. In the study, academic climate was measured in terms of resource support, academic emphasis and principal influence. Similarly, Butler (2012) found that the following principal behaviors: expressing satisfaction when expectation is met and monitoring staff performance were predictors of school climate. Leithwood et al. (2008) mentioned that the behaviors of principal including building vision and setting direction, understanding and developing people, and managing teaching and learning program affected teachers' perception of school climate.

Apart from that, many researchers also related instructional leadership behavior to teacher efficacy. Blasé and Blasé (2000) mentioned that the behaviors of principal talking with teachers and promoting teacher professional growth influence teacher efficacy. Such leadership behaviors caused improved teacher efficacy. Besides them, Horton (2013) discovered that the behaviors of principal defining school mission and communicating the mission to teachers were the predictors of teacher efficacy. Vari (2011) found that instructional leadership behaviors, including promoting professional development, managing school by walking around, and using clinical supervisory model for classroom supervision influenced teacher efficacy. More findings of the empirical studies that examined these variables were illustrated in Chapter Two. Hence, based on the review of empirical findings, it was proposed that:

H$_A$5: Factors in instructional leadership behavior, namely talking with teachers and promoting teacher professional growth, are predictors of school climate.

H$_A$6: Factors in instructional leadership behavior, namely talking with teacher to encourage reflection and promoting teacher professional growth, are predictors of teacher efficacy.

Research Question 5: Which factors in school climate are the predictors of teacher efficacy?

Vari (2011) mentioned that collaboration on instruction among teachers influenced teacher efficacy. Similarly, Lee et al. (1991) argued that staff collegiality and student behaviors influenced teacher efficacy. These researchers found that school environment was strongly related to efficacy in which schools with many cases of disorderly student behavior had less number of efficacious teachers and schools with stronger sense of community had more efficacious teachers. In another study, Hipp (1996) proposed that school climate characterized by stable student discipline and collaboration among teachers on instructional matter enhanced teacher efficacy. More findings of the empirical studies that examined these variables were illustrated in Chapter Two. It was therefore proposed that:

H$_A$7: Factors in school climate, namely collaboration, student relations and school resources, are predictors of teacher efficacy.

Research Question 6: Does school climate mediate the relationship between instructional leadership and teacher efficacy?

Sukarmin (2010) mentioned that instructional leadership behavior influenced school climate which in turn influenced teacher efficacy. School climate was found to be a perfect mediator for the relationship. Statistical analysis results showed that the influence of instructional leadership behavior on teacher efficacy disappeared when school climate was removed from the equation. Besides, the evidence of empirical studies as mentioned earlier about the relationship between instructional leadership behavior and school climate (Alig-Mielcarek, 2003; Butler, 2012; Leithwood et al., 2008), school climate and teacher efficacy (Hipp, 1996; Lee et al., 1991; Vari, 2012), and instructional leadership behavior and teacher efficacy (Blasé & Blasé, 2000; Horton, 2013; Scurry, 2010) supported a mediating effect study (Hallinger et al., 1996; Leithwood et al., 2008). Thus, the relationship between the variables in the study was proposed as:

  $H_A 8$: School climate mediates the relationship between instructional leadership and teacher efficacy.

1.6 Research Framework

Instructional leadership behavior, school climate, and teacher efficacy were the three variables of this study. Using the hypotheses just described in the previous section, instructional leadership behavior, school climate and teacher efficacy came together

to form a framework for this study. This proposed framework postulated instructional leadership behavior as the independent variable and its relationships with school climate and teacher efficacy were as shown in Figure 1.1. School climate was postulated as the mediator for the relationship between instructional leadership and teacher efficacy. The hypothesized framework was proposed based on theoretical support as well as the findings of empirical studies. This section would give a brief description of the related theories and empirical findings. Detailed account can be found in Chapter Two.

The theoretical underpinnings of this framework involved the Path-Goal Theory of Leadership (House, 1971; Hoy & Miskel, 1991) and Social Cognitive Theory (Bandura, 1986). The Path-Goal Theory of Leadership explained how the behavior of leaders influences their subordinates' (House, 1971). The theory's proposition is that subordinates' work effectiveness increased when their leaders engage in behaviors that complement the task environment and subordinates' abilities and compensate for their deficiencies (Hoy & Miskel, 1991; 2005). In relation to this, if leadership behavior causes subordinates' to perceive the work environment as conducive, they would be more motivated to do the task, become more satisfied and able to perform better. At the same time, Social Cognitive Theory postulated that the performance of subordinates is a function of triad bidirectional interactions between efficacy belief, and environment factor (Bandura, 1986; 1993). In other words, the environment in which an individual was in influenced an individual efficacy belief and this belief subsequently determined the behavior of the individual. Thus, school climate is postulated to influence teacher efficacy.

The underpinnings of Path-Goal Theory of Leadership and Social Cognitive Theory could justify the framework of the current study. In relation to this, the theories would be used to explain the connectivity among the three variables: instructional leadership behavior, school climate and teacher efficacy. The Path-Goal Theory elaborated how instructional leadership behavior influences school climate and consequently teacher behavior, while the triad reciprocal relationship among personal, environment and behavior of Social Cognitive Theory explained how teachers' thinking and belief that influence behavior can be altered and developed. The Path-Goal Theory of Leadership and Social Cognitive Theory are explained in detail in Section 2.2.

Each variable of the framework is multidimensional with independent factors. The literature mentioned various categories of leadership behavior (Andrews & Soder, 1987; Blasé, 1987; Blasé & Blasé, 2000; Hallinger & Murphy, 1985; Hussein Mahmood, 1997; Quah, 2011). Generally, the factors of instructional leadership behavior of the framework reflected the categories of leadership behavior proposed by these aforementioned researchers. Apart from that, the multidimensionality of the independent variable was supported by statistical analysis. Factor analysis of data collected from the pilot study obtained ten independent factors of instructional leadership behavior. From the review of literature on instructional leadership models, the factors were named accordingly as 1) giving feedback, 2) giving praise, 3) making suggestions, 4) using inquiry and soliciting advice and opinion, 5) doing research to inform decision making, 6) encouraging and supporting diverse teaching

and learning approach, 7) supporting collaboration effort, 8) emphasizing the study of teaching and learning, 9) developing coaching relationships among teachers, and 10) initiating teamwork (Andrews & Soder, 1987; Blasé,1987; Blasé& Blasé, 2000; Hallinger & Murphy, 1985). These ten factors were grouped under two dimensions: 1) talking with teacher to encourage reflection, and 2) promoting teacher professional growth (Blasé & Blasé, 2000).

Review of literature found support for instructional leadership behavior to be the independent variable of the study. Instructional leadership was examined as the independent variables in many empirical studies (e.g. Alig-Mielcarek, 2003; Grizzard, 2007; Quinn, 2002). These studies examined the impact of instructional leadership on various school variables. For example, Quinn (2002) investigated the impact of instructional leadership on instructional practices and student engagement. On top of that, instructional leadership behavior showed statistical significant relationship with school climate (Alig-Mielcarek, 2003; Barker, 2007; Frederick, 2007; Lord, 2001; Wan Roslina Wan Ismail, 2011) and teacher efficacy (Blasé & Blasé, 2000; Charf, 2009; Scurry, 2010).

The findings of the above-mentioned studies suggested that school climate could be regarded as the mediator. On top of these empirical studies, some other researchers found school climate to have relationship with teacher efficacy (Brown, 2009; Chong et al., 2010). School climate in the areas of resource, student relation, and collaboration among teachers was found to show significant relationship with teacher efficacy (Hipp, 1996; Lee et al., 1991; Vari, 2011). Taken together, these research

findings inferred that teacher efficacy could be influenced by school climate and instructional leadership behavior. For such types of relationship among variables, Baron and Kenny (1986) suggested the feasibility of examining a direct and indirect relationship study. In other words, instructional leadership behavior influence on teacher efficacy is either direct or indirect through school climate. On top of that, the framework was also supported by the finding of Sukarmin (2010) who mentioned that school climate was a perfect mediator for the relationship between instructional leadership behavior and teacher efficacy.

School climate was postulated as a construct consisting of three independent factors: 1) Student Relations, 2) Collaboration, and 3) School Resource. This construct was adapted from school climate model of Johnson, Stevens, and Zvoch (2007). The school climate construct of the current study was supported by factor analysis of the pilot study data. On top of that, the construct is consistent with view that a work environment measure must include three general dimensions for human environments, namely relationships, personal development, and system maintenance and system change (Rentoul & Fraser, 1983). The factors in the school climate construct matched into each of the dimensions. Apart from that, these three factors also reflected the construct of widely used school climate construct such as Organizational Health Inventory (Hoy et al., 1991; Sukarmin, 2010; Wan Roslina Wan Ismail), and Organizational Climate Description Questionnaire (Grizzard, 2007; Hearn, 2010; Lord, 2001).

Teacher efficacy was the dependent variable of the study. The construct of teacher efficacy in the study was adopted from Tschannen-Moran and Hoy's model (2001) that took into consideration the kinds and amount of task that make up a teacher work life. The construct identified three independent dimensions – efficacy in student engagement, efficacy in instructional strategies, and efficacy in classroom management. Teacher efficacy of the current study was measured using the aggregated score of the three dimensions, which was consistent with other empirical studies (Hearn, 2010; Scurry, 2010; Zaidatol Akmaliah et al., 2008). All these studies examined teacher efficacy as the independent variable.

The framework has enabled the examination of how instructional leadership behavior of principal could improve teacher efficacy through school climate. Teachers' influence on student learning was undisputed as the quality of teacher determined student learning (Glanz, Shulman, &Sullivan, 2007; Kementerian Pelajaran Malaysia, 2012; Leithwood et al., 2008; Robinson & Timperley, 2007). The Blasé model of instructional leadership behavior which advocates teachers' learning and professional growth was more relevant to the current school practice (Fullan, 2002; Hoerr, 2008; Kementerian Pelajaran Malaysia, 2012; Lambert, 2002). It was developed based on a qualitative study that involved over 800 teachers in primary, middle and high schools. Apart from that, it reflected teachers' perspective of what they need and find helpful from their principals (Blasé & Blasé, 2000; 2004; Southorth, 2002).

Instructional Leadership Behavior

Talking with Teacher to Encourage Reflection

Giving Feedback

Giving Praise

Making Suggestions

Using Inquiry and Soliciting Advice and Opinion

Promoting Teacher Professional Growth

Doing Action Research to Inform Decision Making

Encouraging and Supporting Diverse Teaching and Learning Approach

Supporting Collaboration Effort

Emphasizing the Study of Teaching and Learning

Developing Coaching Relationship among Teachers

Initiating Teamwork

School Climate

Collaboration

Student Relations

School Resources

Teacher Efficacy

Teacher Efficacy

Figure 1.1: Framework of the Relationships between Instructional Leadership Behavior, School Climate and Teacher Efficacy

1.7 Significance of the Study

The study has provided some insights into what school factors contributed to improved student academic achievement. The findings found that instructional leadership behaviors were significant predictors of teacher efficacy and school climate was not a mediator for the relationship. In other words, the study suggested principals' instructional leadership behaviors had a direct influence on teacher efficacy. Previous studies found that teacher efficacy was related to student learning (Berman et al., 1977; Gibson & Dembo, 1984; Leithwood et al., 2008; Ryan, 2007). Therefore, improved teacher efficacy could lead to improved student academic achievement. Specifically, the current study suggested that school leaders could improve student academic achievement by engaging in the following instructional leadership behaviors: giving feedback, making suggestions, doing action research to inform decision making, encouraging and supporting diverse teaching and learning approach, and supporting collaboration effort. Such information would be useful for educational policy makers and practitioners in the state of Kedah who were searching for ways and means to improve their students' academic performance in order to materialize the Kedah Top Five aspiration.

Apart from that, the study has contributed a new instrument for measuring instructional leadership behavior. The construct of the new instrument which describes instructional leadership behavior in developing teachers as individuals and professionals is an addition to the body of knowledge in the field of instructional leadership. The existing instructional leadership instrument such as Principal Instructional Management Rating Scale (PIMRS) (Hallinger & Murphy, 1985)

focused on the behavior of principals developing a positive climate that enhanced student learning. The PIMRS has been used by many researchers in their respective contexts (such as Alig-Mielcarek, 2003; Lahui-Ako, 2001; Sukarmin, 2010). Nevertheless, the PIMRS used by these researchers did not contain similar dimensions thus suggesting the instability of the instrument. Therefore, this study offered an alternative instrument for consideration for instructional leadership studies.

The study provided empirical support for the existence of two independent dimensions in instructional leadership behavior construct (Blasé & Blasé, 2000). Factor analysis results suggested there were ten independent factors with item loading greater than .5. The factors in the instructional leadership behaviors identified in the current study were also mentioned by other researchers who examined effective schools and principals. For example, giving feedback, which is one of the factors in talking with teacher to promote reflection, was mentioned in other studies (Alig-Mielcarek, 2003; Andrews & Soder, 1987; Firestone & Pennell, 1993; Lahui-Ako, 2001). Therefore, this study supported that instructional leadership behavior is made up of ten independent factors which were categorized under two independent dimensions namely talking with teacher to promote reflection and promoting teacher professional growth. The former dimension had four while the latter six factors respectively.

The study informed that school climate was not a mediator for the relationship between instructional leadership behavior and teacher efficacy. Instructional leadership behavior had a direct impact on teacher efficacy. This finding had practical significance to the education stakeholders and providers. For the Kedah State Education Department, this empirical evidence could be used to make policies for the public secondary school principals in the state. For example, it could be used as a guide to decide on the suitable candidacy for principals. The findings that talking with teacher to promote reflection was a more significant predictor of teacher efficacy suggested that principals with good communication skills might be a better principal candidacy. Apart from that, the findings could be used by Institut Aminuddin Baki to design, offer and conduct instructional leadership training courses which are more relevant to the principals. The principals from the state of Kedah are the clients of Institut Aminuddin Baki, especially Institut Aminuddin Baki Northern Branch which is entrusted to provide leadership training for school leaders in the Northern Peninsular of Malaysia.

1.8 Limitations of the Study

Like all other studies, this study inherited several limitations. The first limitation concerned the research sample. This study involved only teachers from regular public secondary schools in which the principals hold service grade of DG52. It did not include teachers teaching in schools with principals holding grades higher or lower than DG52. It also did not include other types of school in the state such as fully residential schools, private schools, technical schools and high performing schools. The reason of limiting the samples from such schools was to obtain data

from homogenous sample. As such, generalization of the findings for other schools in the state of Kedah must be exercised with caution.

The second limitation concerned the measurements of the study. The instructional leadership behavior questionnaire was developed based on findings of the qualitative study conducted by Blasé and Blasé (2000). As the qualitative study was not conducted in Malaysia, questionnaire developed from the study might have excluded some important constructs which are pertinent to the local context. However, the researcher was still interested to adapt the findings of the study as the study involved over 800 teachers and thus offered rich information about effective instructional leadership behavior. Next, the questionnaire for teacher efficacy measure, namely the Teacher Self-Efficacy Scale (TSES) was completed by teachers. The teachers rated their own on efficacy for instructional strategies, classroom management and student engagement respectively. Self-rated data had been associated with increased common method variance. For example, Kelley et al. (2005) reported that there was no correlation between principals' rating of self behavior and teachers' perception of their superiors' behavior. Nevertheless, teacher efficacy construct involved teachers' belief on their ability to execute the assigned tasks which could not be rated by others. Thus, the efficacy of teachers was based on what the teachers believe they are.

The third limitation concerned the research design and method. The study employed cross-sectional design for data collections which involved data being collected at a specific point in time. It raised the issue of representativeness of such data on actual

situation due to population characteristics which may change constantly over time. Nevertheless, as the variables of interest in the current study were unlikely to change a lot within a year or so, cross-sectional design was still considered appropriate. The second issue is regarding the method of data collection. This study used only quantitative data in its analyses. Such method of data collection did not consider people's views which may be different from the stipulated theories. Therefore, in a way it may cause a lack of in depth insights on what have been examined in the study.

1.9 Operational Definitions

1.9.1 Instructional leadership behavior

Practices of school principal intended to affect student learning which consists of two dimensions: talking with teachers to encourage reflection and promoting teacher professional growth (Blasé & Blasé, 2000).

1.9.2 Talking with teachers to encourage reflection

Behaviors of principal utilizing his/her professional knowledge and skill on pedagogy, student learning and human interaction while conferencing with teachers which include giving feedback, giving praise, making suggestions, and using inquiry and soliciting advice and opinion (Blasé & Blasé, 2000).

1.9.3 Giving feedback

Behavior of principal giving feedback to teachers about their instruction practices based on observed classroom behavior characterized by appropriateness, improving classroom instruction, concern, interest, praise and problem solving (Blasé & Blasé, 2000).

1.9.4 Giving praise

Behavior of principal praising teachers on their teaching performance in private and public after classroom observation (Blasé & Blasé, 2000).

1.9.5 Making suggestions

Behavior of principal giving suggestions on teaching practices to teachers that consider teacher input, include their experience, contain relevant examples and give option for teachers to choose (Blasé & Blasé, 2000).

1.9.6 Using inquiry and soliciting advice and opinion

Behavior of principal asking teachers questions about activities of classroom instruction and expected output (Blasé & Blasé, 2000).

1.9.7 Promoting teacher professional growth

Behaviors of principal developing teachers professionally, which is made up of six different factors: Doing action research to inform decision making, Encouraging and supporting diverse teaching and learning approach, Supporting collaboration effort, Emphasizing the study of teaching and learning, Developing coaching relationship among teachers, and Initiating teamwork (Blasé & Blasé, 2000).

1.9.8 Doing action research to inform decision making

Behavior of principal doing action research to gather information on teachers' background and their needs for decision on the next courses of action including staff development program (Blasé & Blasé, 2000).

1.9.9 Encouraging and supporting diverse teaching and learning approach

Behavior of principal encourages teachers to use varied instructional approaches in classroom teaching by providing them with the necessary resources. In doing so, the principal considers the principles of adult growth and development (Blasé & Blasé, 2000).

1.9.10 Supporting collaboration effort

Behavior of principal encourages teachers to meet and discuss matters pertaining to instruction on regular basis. Teachers are encouraged to work with colleagues within the school as well as with teachers from other schools (Blasé & Blasé, 2000).

1.9.11 Emphasizing the study of teaching and learning

Behavior of principal providing opportunities for teachers to learn new classroom instructional strategies that are based on their needs and lead to the attainment of instructional goals (Blasé & Blasé, 2000).

1.9.12 Developing coaching relationship among teachers

Behavior of principal developing teachers through exemplary teachers and sharing of teaching strategies within and outside school (Blasé & Blasé, 2000).

1.9.13 Initiating teamwork

Behavior of principal preparing structure for teachers to work as a team (Blasé & Blasé, 2000).

1.9.14 School climate

A measure of teacher work environment which comprises of three dimensions: student support, collaboration, and school resource measured using the adapted School Level Environment Questionnaire (Johnson et al., 2007).

1.9.15 Student relations

Students' behavior at school including their motivation to study and rapport with teachers and other staffs (Johnson et al., 2007).

1.9.16 Collaboration

Collegiality among teachers characterized by teachers consulting each other about students' needs and instructional matters (Johnson et al., 2007).

1.9.17 School resources

The availability of facilities, equipment and resources needed for teaching and learning (Johnson et al., 2007).

1.9.18 Teacher efficacy

The teacher's beliefs in his or her capability in the areas of instructional strategies, classroom management and student engagement, measured using the adapted Teacher Self-Efficacy Scale (Tschannen-Moran & Hoy, 2001).

1.9.19 Secondary schools

Schools attended by students who have completed five to seven years of primary education (Akta Pendidikan 1996, 2009).

1.10 Summary

Leadership plays an important part in the success or failure of an organization. In a school, the principal's role in determining school climate cannot be undermined. In the current study, the focus was on the influence of instructional leadership behaviors practiced by principals on school climate and teacher efficacy. Previous studies found that instructional leadership behavior had influence on school climate (Alig-Mielcarek, 2003; Hallinger et al., 1996; Sukarmin, 2010). School climate was related to various aspects of school, including teacher efficacy (Chong et al., 2010; Hoy & Woolfolk, 1993; Lee et al., 1991; Sukarmin, 2010). Based on the findings of these empirical studies, instructional leadership behavior was assumed to influence

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school climate which in turn affected teacher efficacy. Meanwhile, the relationship between instructional leadership behavior and teacher efficacy might be a direct one. This study was set to investigate how the relationships among these three variables are like.

The current study used teacher efficacy as the proxy for student achievement (Alig-Mielcarek, 2003; Andrews & Soder, 1987; Hallinger, 2009; Lee et al., 1991). The findings of the study would provide some insights into how school principals could do their parts to improve student learning which was critical for the realization of the Kedah Top Five aspiration. For that, this study examined the influence of instructional leadership behaviors which encompass the behaviors of principals developing teachers as individual and professional through talking to teachers to encourage reflection and promoting teacher professional growth on school climate and teacher efficacy. As there was yet such an instrument developed for the local context, this study would develop a new instrument for that purpose.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter reviews the theoretical and empirical studies in the literature related to instructional leadership, school climate and teacher efficacy. The first part discusses the theoretical foundations that are used to establish the framework of current study. The second part reviews leadership and the relevant leadership theories before moving on to detailing some instructional leadership behaviors and measures of instructional leadership. This is followed by description of school climate concept, review of school climate measure and its dimensionality. The next part deals with the conceptualization of teacher efficacy and its related issues. Review of previous studies that examine the relationships between instructional leadership, school climate and teacher efficacy is also included.

2.2 Theoretical Foundation

Theoretically, the relationships between instructional leadership behavior, school climate and teacher efficacy can be explained from the theories and models of interactive processes perspective. Leadership behaviors, which constitute various overt actions of a leader, influence the work environment and the people working in it. There were many theories which were developed to illustrate these associations, including path-goal theory of leadership (Georgepoulos, Mahoney, & Jones, 1957; House, 1971; Hoy & Miskel, 1991, 2005; Yukl, 1998), instructional leadership theory (Andrews & Soder, 1987; Blasé & Blasé, 2000; Bossert et al., 1982; Hallinger

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& Murphy, 1985; Horton, 2013), and social cognitive theory (Bandura, 1986; Tschannen-Moran et al., 1998). In the following sections, the underpinning theories for the framework of the current study are elaborated.

2.2.1 The Path-Goal Theory of Leadership

The Path-Goal Theory advocates that leader's behaviors influence subordinates' satisfaction, performance and motivation. The theory was advanced by House (1971) from the path-goal hypothesis generated by Georgepoulos et al. (1957) that attempted to examine factors determining subordinates' productivity, and from the expectancy theory of motivation (Graen, 1969). House (1971) synthesized leader behaviors into five categories as 1) initiating structure, 2) consideration, 3) authoritarianism, 4) hierarchical influence, and 5) closeness of supervision and examined the effects of these behaviors on subordinate performance, satisfaction and motivation. Findings of three different studies supported the proposition of the path-goal theory (House, 1971).

In educational organization setting, Hoy and Miskel (1991; 2005) mentioned different lists of leadership behavior. Leader's behaviors were grouped as directive, achievement oriented, supportive and participation (Hoy & Miskel, 1991), and expanded further to path-goal clarifying, achievement oriented, work facilitation, supportive, interaction facilitation, group decision process, representation, networking, value based and shared (Hoy & Miskel, 2005). Regardless of its categorical names, these leader's behaviors were assumed to impact the work environment in which subordinates work in. The theory proposed that leadership

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behaviors influence subordinates' through these ways: 1) it determines the forms of reward, 2) it clarifies the path to goal attainment, 3) it provides the support needed, 4) it determines the amount of subordinates' involvement in decision making, and 5) it reduces the barriers to goal achievement (Bass, 1990; House, 1971). If these leadership behaviors complemented the task environment and subordinates' abilities and compensated for any deficiencies, it caused improvement in subordinate satisfaction, performance and effectiveness (House, 1996; Hoy & Miskel, 2005, Jago, 1982).

Yukl (1998) proposed the inclusion of intervening variables in leadership studies as it could explain why the effects of leadership behavior on outcomes varied across situations. The relationship between leader's behavior and the corresponding subordinate performance, motivation and satisfaction is mediated by subordinate perception of work environment as illustrated in Figure 2.1 (Hoy & Miskel, 2005; Yukl, 1998). In relation to this, the effect of the intervening variable can be explained using the expectancy theory of motivation (Bandura, 1986; Graen, 1969; Rotter, 1966; Tschannen-Moran & Hoy, 2001). Leadership behavior influences work environment. This perception of the environment experienced by teachers is commonly regarded as school climate (Bossert et al., 1982; Brown, 2009; Lee et al., 1991). If teachers perceived that the work environment supports their effort in ways that would lead to successful completion of task and result in desirable outcomes, they would be more motivated. In this regard, level of motivation corresponds with satisfaction and work effectiveness.

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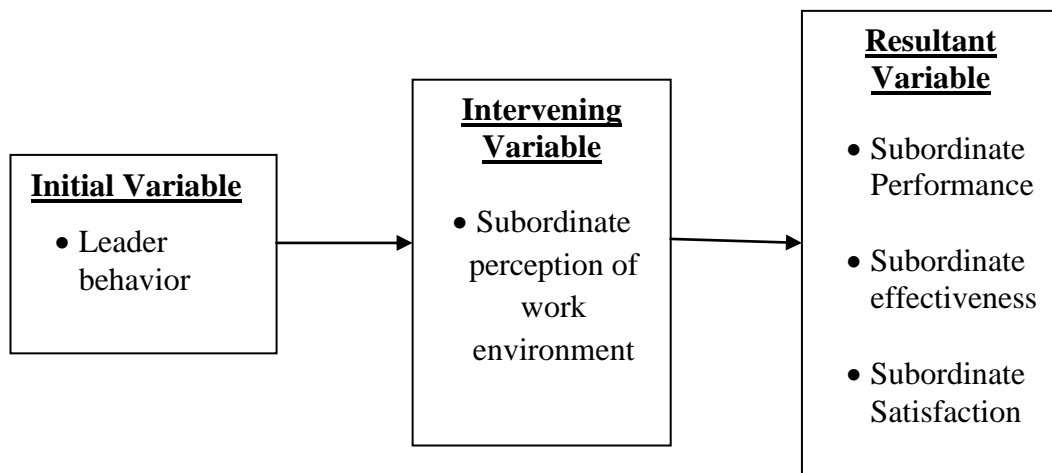
Figure 2.1: Causal Relationships in Path-Goal Theory

The path-goal theory of leadership has been used as the underpinning theory for the framework of empirical studies (Alig-Mielcarek, 2003; House, 1996; Leithwood et al., 2008). Using the framework, Alig-Mielcarek (2003) investigated the influence of instructional leadership on school climate and student achievement. The findings found that the instructional leadership behaviors such as encouraging professional development, setting goals, and managing teaching and learning influenced school climate which in turn impacted student achievement. Other studies found correlation between teacher efficacy and student achievement (Berman et al., 1977; Chong et al., 2010; Ross, 1992; Ryan, 2007). In relation to this, it is possible that Alig-Mielcarek's findings about the influence of school climate on student achievement would cause similar influence on teacher efficacy in tandem.

Similarly, House (1971) commented that principals' influence on subordinate was contingent on environmental factors. For example, the behaviors of principals initiating structure such as structuring work schedule, providing information about expected results, clarifying task, and roles for subordinate caused subordinate satisfaction and performance when subordinates were inexperienced and tasks were unstructured. Such leader behaviors clarified the path to the goals and thus produced satisfaction and increased the performance of inexperienced subordinates. On a group of experienced subordinates doing stereo-typed task in a dangerous environment, initiating structure might not improve the performance further but it definitely would cause a drop in satisfaction and motivation. As such, the leader had to consider other more appropriate behavior, such as consideration.

In relation to this, school principals can work out ways to modify teacher's performance, motivation and satisfaction. It is possible because principal behaviors could alter the environmental characteristics in terms of work relation among teachers, resource allocation and student discipline in schools (Bossert et al., 1982; Hoy & Miskel, 2005; Purkey & Smith, 1983). To cite an example, when principals provided support in terms of resources and supportive environment for teachers, the efforts would lead to increased teachers' performance because the support improved the work environment for the teachers. In a nutshell, the Path Goal Theory of Leadership advocates that principal behaviors have an influence on the environment in which the teachers work and this in turn affects their job performance.

2.2.2 Instructional Leadership Theory

The instructional leadership theory explains how the behavior of principals works to influence student achievement. The concept of instructional leadership has its origin in the effective school literature (Bossert et al., 1982; Edmonds, 1979; Purkey & Smith, 1983). Instructional leadership construct in the earlier studies (1970s) described what constitutes a principal in an effective school. This concept was advanced further by researchers to examine what principals do to improve student learning through managing curriculum, staff and resources as the influence of leadership on student achievement was indirect (Alig-Mielcarek, 2003; Hallinger et al., 1996; Leithwood et al., 2008).

Hallinger and Murphy (1985) categorized instructional management behavior of principals under three groups of job function: defining school mission, managing instructional program and promoting a positive school climate. Empirical studies that utilized this instructional leadership framework found the influence of instructional leadership on school climate (Lord, 2001; Sukarmin, 2010) and teacher efficacy (Horton, 2013). Although these studies did not examine the influence of instructional leadership on student achievement, other empirical studies mentioned that school climate and teacher efficacy caused improved student achievement (Alig-Mielcarek, 2013; Hallinger et al., 1996; Ross, 1992; Ryan, 2007).

Other researchers developed different lists of instructional leadership behavior. Andrews and Soder (1987) proposed that instructional leadership encompasses the role of principals as resource provider, instructional resource, communicator and visible presence while Blasé and Blasé (2000) mentioned talking with teacher to

encourage reflection and promoting teacher professional growth. Despite the difference in categorical names, detailed examination found that these instructional leadership constructs center on the behavior of principals in the areas of curriculum, staff development, and supervision intended to bring forth better student learning. The behavior in Andrew and Soder's list was found to correlate with student achievement (Andrew & Soder, 1987) and teacher instructional practice and student engagement (Quinn, 2002). Blasé and Blasé (2000) mentioned that instructional leadership behavior influenced teacher efficacy, motivation and self esteem.

2.2.3 Social Cognitive Theory

Social Cognitive Theory recognizes the function of cognition in the acquisition and retention of novel behaviors (Bandura, 1982; 1986; 1997; Tschannen-Moran et al., 1998; Tschannen-Moran & Hoy, 2001). The theory advocates that people make judgment about their capabilities cognitively using the four sources of efficacy: mastery experience, vicarious experience, verbal persuasion and psychological states. This judgment which is called efficacy belief mediates the relationship between knowledge and action. This efficacy belief explains the different outcomes of a teacher's performance (Berman et al., 1977; Dembo & Gibson, 1985; Tschannen-Moran et al., 1998; Tschannen-Moran & McMaster, 2009). Generally, higher efficacy belief causes more task accomplishments.

Human behavior is a product of triadic reciprocal relationships among cognitive, social and behavioral skills as illustrated in Figure 2.2. Social Cognitive Theory posits bidirectional influence in which efficacy belief is generated from the

interaction with environment and enactive behavior (Bandura, 1986; 1997; Dembo & Gibson, 1985; Hipp, 1996; Nir & Kranot, 2006). Thus, teacher efficacy influences and is influenced by school environment and teaching behavior. In relation to this, Hipp (1996) found that the behaviors of principal influenced teacher efficacy while Chong et al. (2010) mentioned that there was a relationship between school climate and teacher efficacy. Both principal leadership and school climate are school environment factors that were found to influence teacher efficacy.

Personal

Environment ←——————————→ Behavior
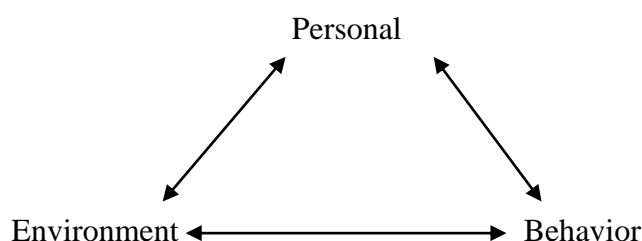
Figure 2.2: Triadic Reciprocal Nature of Personal, Environment and Behavioural Factors

To sum up, the theories discussed earlier can be used to explain how instructional leadership behaviors engaged by school principals influence school climate and teacher efficacy. The behaviors of principals have impact on school work environment and teachers. Specifically, the Path Goal Theory of Leadership and Instructional Leadership Theory could delineate the influence of instructional leadership behavior on school climate while the Social Cognitive Theory could explain the influence of school climate on teacher efficacy.

2.3 Leadership

The following section reviews various aspects related to instructional leadership which include leadership theories, instructional leadership concept, instructional leadership measurement, instructional leadership behavior construct and justification for the framework of the current study.

2.3.1 Leadership Theories

Studies in the field of leadership have produced several related theories. This section reviews three related leadership theories, which are trait theories, behavioral theories and contingency theories.

2.3.1.1 Trait Theories

Trait theories propose that leaders are individuals who possess certain qualities that differentiate them from non-leaders. Bass (1990) commented that earlier studies of leadership focused on traits of leaders. The trait classification of the earlier studies which were purely on leader attributes experienced many objections and subsequently, researchers doing studies employing trait approach later on focus on examining the relationship between leader traits and leadership effectiveness (Hoy & Miskel, 2005).

The studies on traits leadership conducted after 1948 classified leadership traits as either task oriented or interpersonal related (Bass, 1990; Pierce & Newstorm, 2006). To cite some examples, Kirkpatrick and Locke (1991) discovered that possessing certain traits are important factor in leadership but leaders who possess the requisite

traits must take actions such as formulating a vision, role modeling and setting goals to be successful. They mentioned drive, the desire to lead, honesty / integrity, self-confidence, cognitive ability and knowledge of business as core traits for effective leadership. Conversely, Hoy and Miskel (2005) mentioned a strong drive for responsibility and task completion, and readiness to absorb interpersonal stress as important characteristics of leaders. These researchers opined that having certain traits increase the possibility that the individual will exercise leadership action and thus increases the probability of success. From this, it can be inferred that possession of leadership traits such as good communication skills and knowledge on curriculum are important for an individual to be successful as school leader.

2.3.1.2 Behavioral Theories

Behavioral theories suggest that leaders can work to develop subordinates' behavior as required (Davis & Luthans, 1979). Leaders do not cause the behavior of subordinate directly. Instead the behavior merely functions as a cue to spark off behavioral response from subordinates. Leader's impact on subordinate behavior involved a chain of events which include antecedent stimuli, cognitive processes, behaviors and consequences. Each of this behavioral contingency can be analyzed separately.

There are quite a number of empirical studies in the field of instructional leadership that utilize behavioral approach to examine job activities of a school leader. The studies have identified a few categories of typical job activity of a school principal (Alig-Mielcarek, 2003; Andrews & Soder, 1987; Blasé & Blasé, 2000; Edmonds,

1979; Hallinger & Murphy, 1985; Lahui-Ako, 2001; Southworth, 2002). When the job activities were examined together with other organizational factors such as student achievement and satisfaction, the studies derived findings on leadership effectiveness (Andrews & Soder, 1987; Bower & Seashore, 1966; Fancera, 2009; Fleishman & Harris, 1962; Sukarmin, 2010). Nevertheless, other studies examined how leadership affect school climate (Alig-Mielcarek, 2003; Butler, 2012; Grizzard, 2007), and teacher efficacy (Blasé & Blasé, 2000; Horton, 2013; Ryan, 2007).

Yukl (1998) suggested the use of questionnaires to gather data in behavioral research. There are quite a number of leadership behavior questionnaires which were developed from the categories of job function of a leader. The questionnaires, including Leadership Behavior Description Questionnaire (LBDQ) (Bass, 1990; Cheng, 1985), Principal Instructional Management Rating Scale (PIMRS) (Hallinger & Murphy, 1985; Horton, 2013; Sukarmin, 2010), Leader Behavior Analysis II (LBAII) (Kelley et al., 2005), and Multifactor Leadership Questionnaire (MLQ) (Nir & Kranot, 2006; Zaidatol Akmaliah et al., 2008) have been used in various studies.

These questionnaires encompass the measure of various leadership behaviors attempt to solicit information about the behavior of leaders in executing a tasks. For example, the LBDQ describes the extent to which a leader is likely to define and structure his/her role and roles of subordinates in the search to achieve organizational goals as well as the extent to which the leader is likely to have a job relationships characterized by mutual trust, respect for subordinates' ideas and regard for their feelings (Bass, 1990). The LBDQ classifies a leader as either focusing on initiating

structure or consideration. Meanwhile, PIMRS measures the tasks of the principal in managing a school (Fancera, 2009; Hallinger & Murphy, 1985; Quah, 2011). These questionnaires have been used in various studies and obtained important insights on the ways school principals caused behavioral change among the teachers in the areas of satisfaction, self efficacy and commitment.

2.3.1.3 Contingency Theory

Contingency theory suggests that leader's impact is contingent on situational factors such as nature of task, nature of environment and characteristics of followers (Bass, 1990; Hersey & Blanchard, 1969). The same styles of leadership behavior were not optimal in all situations (Dimmock & Walker, 2000; House, 1996). Situational leadership researchers argued that any one of a number of leadership style is effective, so long as it matches the situation facing the group (Fielder, 1967; House, 1971; Hoy & Miskel, 1991; Yukl, 1998).

The claim of contingency theory was evidenced in empirical studies conducted in schools (Chong et al., 2010; Hallinger, 2003; Hallinger, 2009; Hallinger et al., 1996). According to Hallinger (2009), leadership model that makes a difference in student learning ought to include dimensions that are education specific and related to the context in which it is practiced. Therefore, it can be inferred that instructional leadership model ideally should be developed from data gathered from schools, especially response from teachers and students.

Hallinger (2003) suggested a leadership model comprising instructional leadership and transformational leadership dimensions to exemplify the influence of context on leadership effectiveness. From the comparison made on the two models, the researcher suggested that instructional leadership which emphasizes on top down approach to be more effective than transformational leadership in high risk schools. Therefore, if the mission is to turn around a school, the principals should employ this leadership style as it would be more effective in such context. Nevertheless, after the school has improved, transformational leadership that promotes staff ownership and professional growth was needed to ensure sustained improvement (DuFour & Marzano, 2009; Lambert, 2002).

2.3.2 Instructional Leadership Concept

Just as leadership, instructional leadership is an elusive concept. Instructional leadership has received much interest from researchers which causes its definitions to be as numerous as the number of researchers engaged in the studies on this subject (Andrews & Soder, 1987; Blasé, 1987; Blasé & Blasé, 2000; Hallinger & Murphy, 1985; Hoy & Miskel, 2005). Bass (1990) commented that the definition of leadership varies according to the methodological and purpose of the study. Some examples of instructional leadership definitions are as follows: 1) instructional leadership establishes school context that shapes teacher behavior and student learning (Lahui-Ako, 2001), 2) instructional leadership involves administrative work handling a wide range of issues concerning school with diverse individuals including the government, community, and parents (Hoy & Miskel, 2005), and 3) instructional leadership is about leading teachers' professional learning (Southworth, 2002). Despite the

considerable variations, all definitions of instructional leadership involved what school leaders do that lead to the same outcomes which is student learning.

2.3.3 Instructional Leadership Models

Review of the literature on instructional leadership found quite a number of conceptual models being used by various researchers in their studies. These models outlined the behaviors and process of principals in managing the school. This section reviews the prevailing conceptual models developed by Hallinger and Murphy, (1985), Andrews and Soder (1987), Blasé (1987), and Blasé and Blasé (2000).

2.3.3.1 Hallinger and Murphy's Model

Hallinger and Murphy (1985) proposed a framework of instructional management behavior of school principals. The framework consists of three dimensions: defining school mission, managing instructional program and promoting a positive school climate which were further divided into 11 sub-dimensions (Table 2.1). The number of sub-dimensions in each of the dimensions is two, three and six respectively.

The model identifies defining school mission as the first dimension. The principal's roles in this dimension include setting school goals and communicating the goals to all teachers, parents and students in the school. In setting school goals, the principal determines what the school would focus their attention and resources on during a given year. After school goals have been defined, it becomes the duty of the principal to communicate those goals persistently to the entire school community through formal and informal communication so that everyone in the school understood the goals well. Defining school mission was also seen in the instructional

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leadership construct used by other researchers (Lahui-Ako, 2001; Quah, 2011; Sukarmin, 2011).

Table 2.1: Instructional Management Framework (Hallinger & Murphy, 1985)

Dimensions	Job functions
(I) Defining School Mission	(i) Framing Clear School Goals (ii) Communicating Clear School Goals
(II) Managing Instructional Program	(i) Supervising and Evaluating Instruction (ii) Coordinating Curriculum (iii)Monitoring Student Progress
(III) Promoting a Positive School Climate	(i) Protecting Instructional Time (ii) Promoting Professional Development (iii)Maintaining High Visibility (iv)Providing Incentives for Teachers (v) Enforcing Academic Standards (vi)Providing Incentives for Students

The second dimension of the model is managing school instruction program. There are three different factors in this dimension, namely supervising and evaluating instruction, coordinating the curriculum, and monitoring student progress. Generally, the job functions revolve around principal working with teachers in various aspects of curriculum and instruction. Other researchers mentioned different list of factors for similar job function. For example, Quah (2011) listed managing curriculum and instruction, monitoring student progress and supervising teaching and learning while Lahui-Ako (2011) mentioned managing curriculum and instruction, and observing and providing feedback.

A comparison of the constructs used by the three different researchers revealed that the factors resembled each other (Table 2.2). The first factor named coordinating the curriculum concerns the principal's role in managing the implementation of curriculum. The principal works to ensure that there is high degree of curriculum coordination within the school. In order to achieve this objective, the principal plans activities that facilitate interaction among the teachers within and across grades on instructional and curricular issues. Examples of principal's duty in this aspect: "Ensure that the school's academic goals are translated into common curricular objectives" (Hallinger & Murphy, 1985, p 241); "Involve teachers in planning and implementing the semester curriculum" (Quah, 2011, p 1792) and "Ensure that the classroom objectives of teachers are consistent with the stated goals of the school" (Lahui-Ako, 2001, p 244). With regard to the construct proposed by Quah (2011) and Lahui-Ako (2001), despite having the same factor name, detailed examination of the construct showed dissimilarity existed between them. Quah (2011) focused on the behaviors of principal managing curriculum through teacher involvement while Lahui-Ako (2001) looked at what principals did to align classroom instruction goals to the general school goals. In a way, Lahui-Ako's (2001) construct was closer to Hallinger and Murphy's (1985).

The second factor, monitoring student progress requires the principal to play a key role in monitoring student progress. For this job function, the principal's role is to provide teachers with student results timely, discuss the results with teachers at various levels, and use the results as the basis for the next courses of actions (Hallinger & Murphy, 1985). Similarly, Quah (2011) mentioned monitoring student

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progress as one of the key job functions of a principal. Nevertheless, the job functions involve a wider scope of duties. Besides monitoring student performance, it involves principal doing the needful including providing resources, and engaging teachers and parents to monitor student results. Lahui-Ako (2001) also regarded monitoring student progress as an important duty of principal but the construct is placed in the factor named promoting a positive learning climate.

The third factor, supervise and evaluate instruction, involves the roles of principals discharging duties to ensure school goals are translated into classroom practice. The behaviors in this factor involves principal doing classroom supervision to ensure student learning. Example of behavior includes "Ensure that the classroom priorities of teachers are consistent with the goals and direction of the school" (Hallinger & Murphy, 1985, p 241). Quah (2011) called it supervising teaching and learning while Lahui-Ako (2001) named it observing and providing feedback. Despite the difference in factor name, all three researchers seemed to agree on the role of principal in giving feedback to teachers after classroom observation in order to help them improving classroom instruction.

Table 2.2: Comparison of Factors in Managing Instructional Program

Hallinger & Murphy (1985)	Quah (2011)	Lahui-Ako (2001)
Coordinating the curriculum	Managing curriculum and instruction	Managing curriculum and instruction
Monitoring student progress	Monitoring student progress	Promoting a positive learning climate
Supervising and evaluating instruction	supervising teaching and learning	Observing and providing feedback

Hallinger and Murphy (1985) listed six factors under the third dimension named promoting a positive school climate. The relevant factors attempt to capture principal behaviors in the areas of: 1) protecting instructional time, 2) promoting professional development, 3) maintaining high visibility, 4) providing incentives for teachers, 5) enforcing academic standards, and 6) providing incentives for students. The behaviors of principal in this dimension reflect the promotion of a positive learning climate. The first job function in this dimension, protecting instructional time, requires principals to implement policies that limit interruptions of classroom contact hour. The second job function, promoting professional development, includes behaviors such as informing teachers of training opportunities, leading in-service training and helping teachers integrate skills learned during staff development to classroom implementation. Besides, the researchers also link the visibility of principal in school to students' and teachers' positive attitude and behavior. Another important job function is for principals to set up structure that rewards teachers who performed well. On top of that, clearly defined, high academic standards were found to be important factor that leads to improved student learning. Finally, principals can create a climate that values academic excellence by frequently rewarding and recognizing student academic achievement.

The factors in the dimension of promoting a positive climate were adapted by other researchers. Lahui-Ako (2001) called the factor promoting a positive learning climate. The construct was similar to the six factors in Hallinger and Murphy's model (1985). On the other hand, Quah (2011) named it fostering the teaching and learning climate. It included only the behaviors of principal providing incentives for

teachers and providing incentives for students. Besides these two researchers, other studies on effective schools also regarded fostering a positive school climate as a key role of school principal that led to success in schools (Edmonds, 1979; Maeyer, Rymenans, Petegem, Bergh, & Rijlaarsdam, 2007; Purkey & Smith, 1983).

The Hallinger and Murphy (1985) instructional leadership model was used to develop a questionnaire named Principal Instructional Management Rating Scale (PIMRS). Items in the questionnaire described job functions of principals in the areas of defining school missions, managing instructional programs and promoting a positive school climate. The questionnaire was first administered to principals, school staffs and district office supervisors from ten elementary schools in one single district. From the synthesis of information collected from the questionnaire and organizational documents including principal's clinical observation reports, and minutes and agenda of school meetings, a questionnaire consisting of 71 items was produced.

Items in the PIMRS asks respondents to rate their principal job behavior on a five-point scale ranging from 1 (almost never) to 5 (almost always). Besides, it also allows a sixth response – "?" which refers to item descriptions that do not apply. Scoring is calculated to obtain subscale means. Mean score nearer to 5 indicates higher frequency of performing the practice by the principal and vice versa. An example of item in the instrument is "To what extent does your principal develop goals that seek improvement over current levels of academic performance?". The PIMRS reported high content validity and reliability values.

From this seminal research, the PIMRS has been used widely in many other empirical studies. The list in the Hallinger and Murphy (1985) instructional leadership model underwent refinement and the six factors in promoting a positive school climate had been collapsed to five factors (Hallinger, 2003). The relevant factors became 1) protecting instructional time, 2) promoting professional development, 3) maintaining high visibility, 4) providing incentives for teachers, and 5) providing incentives for students. While the earlier version of PIMRS had 71 items, the framework with ten factors consist of 50 items. Both versions of the instructional leadership model were used by researchers in their studies: instructional leadership model with 11 factors (Alig-Mielcarek, 2003; Lahui-Ako, 2001; Sukarmin, 2010) and instructional leadership model with 10 factors (Fancera, 2009; Horton, 2013; Quah, 2011).

Hallinger (2009) claimed that the PIMRS has been used in over 125 studies conducted in 14 countries. For example, it has been used by Sukarmin (2010) to examine the relationships between instructional leadership behavior, school climate and teacher efficacy. Similarly, other researchers adapted the instructional leadership model to examine the influence of instructional leadership on teacher efficacy (Fancera, 2009; Horton, 2013).

2.3.3.2 Andrews and Soder's Model

Andrews and Soder (1987) proposed an instructional leadership model that consists of four dimensions: 1) resource provider, 2) instructional resource, 3) communicator, and 4) visible presence. The model was derived from the findings of a study involving all instructional staff in 67 elementary schools and 20 secondary schools.

The model depicts that effective principals play their roles in the following aspects: 1) As a resource provider - the principal orchestrates the manpower, materials and opportunities within the school as well as those in the district and community to achieve school goals and vision, 2) As instructional resource - principal encourages learning in the classrooms by setting high but achievable expectations, engaged actively in teacher development and improved classroom environment for enhancing student learning, 3) For the role as a communicator, the principal models commitment to school goals. He/she is also responsible for setting clear performance standards for instruction and teacher behavior, articulating the goals, and providing the means to integrate instructional planning and achievement of those goals, and 4) For visible presence, the principal is expected to be seen at school, walk about the school, visit classrooms to supervise instruction, attend meetings held in school, and hold spontaneous conversations with staff and students.

A comparison of the Andrews and Soder (1987) model with other instructional leadership models found that dimensions of the model were consistent with other instructional leadership models. The first factor, principal as a resource provider was agreed by other researchers (Edmonds, 1979; Murphy, Elliott, Goldring, & Porter,

2007; Quinn, 2002). Robinson and Timperley (2007) also agreed on the role of principal as resource provider but cautioned that the provision of resource should be aligned to the instructional goals of schools for it to be effective. The second factor, the role of principal as instructional resource, was consistent with the ideas of Jones (2009), Lahui-Ako (2001), and Quah (2011). Principal's role as a communicator was termed communicating clear school goals in other models (Hallinger, 2003; Hallinger & Murphy, 1985). Finally, visible presence was regarded as accessibility (Blasé, 1987), and as maintaining high visibility (Hallinger, 2003; Hallinger & Murphy, 1985).

The four dimensions of the Andrews and Soder's Model formed part of the Staff Assessment Questionnaire (Andrews & Soder, 1987; Quinn, 2002). When the questionnaire was administered on elementary schools to examine the relationship between principal leadership and student gain in Reading and Mathematics, it concluded that instructional leadership is a significant organizational factor that influences student academic improvement in urban setting. Gain scores of students in strong-leader schools were significantly greater than their counterparts in average- and weak-leader schools (Andrews & Soder, 1987).

Quinn (2002) adapted the questionnaire for a study that examined the impact of instructional leadership on teacher instructional practice and student engagement involving 24 schools. The study reported reliability of the questionnaire as .73. Examples of item include "My principal is an important instructional resource in our school" and "My principal provides frequent feedback regarding my classroom

performance" (p 465). The study concluded that as a whole, instructional leadership correlated strongly with teacher instructional practice and student engagement. Nevertheless, at dimension level, only three from the four dimensions showed significant relationship with the dependent variables. Visible presence of principals did not have impact on instructional practice and student engagement

2.3.3.3 Blasé' Model

Blasé developed a framework of effective school leadership from the perspectives of teachers from a 2½-year case study (Blasé, 1987). Data were collected through formal and informal interviews, questionnaire and observation involving teachers in an urban, biracial high school in the United States of America. The data, analyzed using grounded theory approach found two categories of behavior: 1) nine themes of task-related behaviors, and 2) five themes of consideration-related behaviors (Table 2.3). Table 2.3 also outlined the impacts of leadership behavior on teachers. Each behavior in the effective school leadership framework is described below.

Blasé (1987) mentioned accessibility as an important principal task-related factor. Accessibility refers to the availability and visibility of principals in the schools. Teachers viewed principals engaging the following behaviors as effective: often seen in school, made them available for teachers and students, spent a significant amount of time in school, and prepared to handle teacher and student-related problems. The behaviors mentioned were similar to Hallinger and Murphy's (1985) maintaining high visibility and Andrews and Soder's (1987) visible presence.

The second effective principal behavior is consistent in the decisions made regarding student discipline and did not give in to political pressure at the expense of sound educational practices. Consistency refers to the congruence of principals' behavior and decisions with the norms, rules, programs and policies. The consistency in principals' act enhanced teachers' ability to control students, reduced disciplinary problem, and improved teaching and learning in the classroom.

Next, teachers expected principals to be knowledgeable and experts in the field of education. They had high regards for knowledgeable principals and mentioned both formal knowledge of curriculum and informal knowledge of teacher and student needs as important factors in effective administration. Among the knowledgeable criteria mentioned were intelligent, worldly, and experienced. Knowledgeable principals used their knowledge to solve school-related problem. Examples of behavior of effective principal included "giving helpful advice, attending activities in all aspects of the school" (p 599). The ability of principal to give good professional advice to teachers was also mentioned by other researchers, including Andrews and Soder (1987), and Blasé and Blasé (2000). Southworth (2002) mentioned that "instructional leadership requires individuals to have high levels of knowledge and understanding of curricula, pedagogy, student, and adult learning" (p 87).

Principals were expected to set clear and reasonable expectations by creating achievable policies, rules, goals and standards and communicate them clearly to teachers. Teachers favored principals who demonstrated clear expectations and stayed to the agreed standards. Besides, they also mentioned the ability to

communicate the expectation clearly in written and verbal forms as important. This factor is also found in other instructional leadership models as: 1) vision for learning (Murphy et al., 2007), and 2) communicator (Andrews & Soder, 1987).

Decisiveness refers to principals' willingness and boldness in making timely decisions. It gave teachers a clear sense of direction. Examples of behavior to be avoided by principal included "some of them won't make decision, they avoided decisions, principals change their minds" Decisiveness was positively related to clear expectation, problem-solving orientation, consistency and personal traits of authenticity, compassion, security, and working long hours.

Effective principals set goals and directed the path towards the achievement of those goals. The behaviors in this category include describing global and comprehensive goals on student behavior, curriculum and extra-curriculum. The construct describes what principal do to set goal and direction of school. Characteristics of effective principals in this theme include: 1) emphasize on improvement, 2) involve faculty in goal-setting, and 3) seek teachers' input on the implementation of policies and plans related to the goals. Lambert (2002) mentioned that inclusiveness of principal, teachers, students and parents in making decision on school matters was crucial for sustained improvement. In other instructional leadership frameworks, terms like sharing leadership, fostering ownership were used (Crum, Sherman, & Myran, 2009; Sanzo et al., 2011).

Next, effective principals followed through the programs they initiated. In doing so, they continually supervised and provided teachers with essential resources to maintain and enhance teachers' work. Follow-through reduced uncertainty in the teachers; instead it promoted clarification towards the achievement of the real goals. This instructional leader task was also mentioned by Andrews and Soder (1987), Blasé and Blasé, (2000), and Quinn (2002).

Effective principals were those who could manage their time well. Characteristics of principals in this area include: 1) They did not over commit themselves with works in the school, 2) Despite being always busy, they were accessible to teachers and students regarding school matters at various times and locations in the school, 3) They had prudent time management in all aspects of school management including faculty meeting. Effective time management was evident in their behaviors such as prepared and followed agendas of meeting, facilitated discussion during meeting, and 'respected' teachers' time.

In problem solving, teachers mentioned that effective principals were able to interpret and conceptualize problems as it was faced by teachers. They showed rational responses to problem, strived to reduce conflicts and promoted harmony in the process of problem solving. Effective problem solving skills by principals caused in reduction in stress level and conflicts among teachers. Consequently, the school environment became more conducive for accomplishing pre-determined goals and fostering cohesiveness among teachers.

Table 2.3: Principal Leadership and Its Impacts on Teachers (Blase, 1987)

Types of behavior	Principal Factors	Impacts on Teachers
Task-related	Accessibility	Increase in involvement, feelings of confidence and control, decrease in student discipline problem
	Consistency	Increase in ability to control students, decrease in student misbehavior
	Knowledge/ expertise	Feel more satisfied and respected; increase in sense of professionalism and being understood
	Clear and reasonable expectations	Feel less frustrated, angered and uncertain
	Decisiveness	Feel less uncertain, less confused
	Goals/ direction	Increase in expectation for student achievement, increase in collaboration
	Follow-through	Less frustrated, angered and uncertain, increase in success in program development
	Ability to manage time	Increase in productive faculty meeting interaction
	Problem-solving orientation	Increase in ability to solve problem, increase in parental support and understanding
Consideration-related	Support/ confrontation of conflict	Improvement in teacher efficacy, professional growth, self-esteem, Increase in student respect, group cohesion
	Participation/ consultation	Better in professionalism, self-esteem, more committed to the school
	Fairness/ equitability	Increase in professionalism, self-esteem, satisfaction, cooperation
	Recognition: praise and reward	Increase in self-esteem, confidence, pride, class instruction, interaction
	Willingness to delegate authority	Increase in self-esteem, sense of professionalism and teacher efficacy

The review now moves on to consideration-related behavior of effective principals. Teachers perceived their principals as effective if their principals stood behind their actions whenever conflicts and confrontations occurred between teachers and students or parents. In the incidents when principals disagreed with actions of teachers, the disagreements were approached constructively. This type of support from principals caused a decrease in classroom misbehavior, an increase in interactions among teachers, students and parents, and teacher development. Teachers appreciated principals who invited them to be part of the team in decision making regarding curriculum, the content area, and the problems faced by teachers and students. The acts were linked to trust and respect for teachers, teachers' sense of professionalism, the development of collegiality and increased involvement in school work. Involvement in decision making was also viewed important by other instructional leadership researchers (Blasé & Blasé, 2000, 2004; Crum, Sherman, & Myran, 2009; Nettles & Herrington, 2007).

Apart from that, teachers valued fairness and equitability from the principal. Effective principals allocated resources fairly, recognized the right and expertise of each teacher, and managed rewards, punishments and interpersonal conflicts professionally. Fairness by the principals was related to developing positive personal and professional identities of teachers, increased trust among staff, better morale, and increased cooperation and production. Effective principals recognized the hard work of their teachers. They praised and gave credits to the teachers accordingly. For teachers, recognition from the principal was related to teacher self esteem, professional development, group cohesion, and teacher involvement inside and

outside the classroom. Recognizing the hard work of teachers was mentioned in other instructional leadership frameworks as giving praise (Blasé & Blasé, 2000), and providing incentive for teachers (Hallinger & Murphy, 1985).

Effective principals were willing to empower teachers and supported the empowerment by providing the necessary resources. They acknowledged that the delegation of power was crucial as their knowledge and time on school matters were limited. Empowerment from principals had the effect of timely decision making and more efficient work processes. Other researchers regarded such behavior as sharing leadership (Sanzo et al., 2011), shared leadership (Lambert, 2002; Marks & Printy, 2003; Ylimaki, 2007), and distributed leadership (Leithwood et al., 2008).

2.3.3.4 Blasé and Blasé' Model

Blasé and Blasé (2000) postulated an instructional leadership model from a cross sectional study involving more than 800 teachers teaching in elementary, middle and high schools. The qualitative study asked respondents to give responses to an open-ended questionnaire that required them to describe principal behaviors that promote teaching and learning in schools. From the findings, the researchers suggested that there were two interrelated effective instructional leadership behavior: 1) talking with teachers to promote reflections, and 2) promoting professional growth. The two dimensions were further divided into five and six strategies respectively (Table 2.4).

Talking with teachers to promote reflection refers to the behavior of principal engaged in conversations with teachers that encourage them to reflect on their

professional practices. The talking encompassed five strategies, which are "making suggestions, giving feedback, modeling, using inquiry and soliciting advice and opinions, and giving praise" (p 133). Detailed illustration for each of the five strategies is given next.

First and foremost, teachers treasured suggestions from principals which were purposeful, appropriate and non-threatening. Such types of suggestion improved their classroom instruction. Principal behaviors mentioned by teachers included "listening, sharing their experiences, using examples and demonstrations, giving teachers choice" (p 133). In other instructional leadership studies, making suggestions was also mentioned as the behavior of effective principals (Glickman, Gordon, & Ross-Gordon, 2007; Lahui-Ako, 2001; Sanzo et al., 2011).

Apart from that, effective principals acted as "critical friend" for the teachers. Teachers received feedback which focused on "observed classroom behaviors, was specific, expressed caring and interest, provided praise, established a problem-solving orientation, responded to concern about students" (p133). Giving feedback is a major task of instructional leader as it has been viewed important by many other researchers (Alig-Mielcarek, 2003; Hallinger & Murphy, 1985; Lahui-Ako, 2001; Quah, 2011; Wan Roslina Wan Ismail, 2011).

The third strategy, praise by principals that focused on specific and concrete teaching behaviors fostered reflective thinking in teachers and this led to changed behaviors. Expressions such as "You are a credit to the teaching profession. The principal asked

if he could send other teachers to observe my classroom" (p 134) were positive remarks that made teachers feel important. Praise has the impact on motivating teachers to search for new ideas, make use of their free time to think of ways to improve teaching and use their strengths to help students in learning. Giving praise made instructional leaders successful in school (Barker, 2007; Blasé, 1987; Southworth, 2002).

Apart from that, effective principals were found to use modeling strategies to model appropriate teaching techniques during classroom observations and conferencing. On top of that, they also modeled positive interaction with students. Effective principals were eager to demonstrate appropriate teaching techniques and this behavior motivated their teachers as well as causing them to reflect on their own teaching technique. Principals were looked up upon by their teachers as a model for appropriate teaching methods and positive interaction with students (Edmonds, 1979; Southworth, 2002; Leithwood et al., 2008).

The researchers also found teachers to prefer principals who employ making enquiry and solicit advice/opinions when having conference with teachers on instructional matters. They often asked questions to find out more from the teachers and considered teachers' views about what happened in the classroom. Example of interview response excerpt:

> The principal, in observing what is taking place in my classroom,
> will ask me questions about why I am doing what I am doing, or
> what my intended outcomes are. This encourages me to be reflective

about what I do. She rarely has a suggestion, but her questions cause

me to evaluate what I do (p 134)

In other instructional leadership models, it was mentioned that effective principals sought teachers' advice/opinions on instructional matters (Blasé, 1987; Crum, Sherman, & Myran, 2009; Fullan, 2002; Hoerr, 2008; Nettles & Herrington, 2007).

Table 2.4: Effective Instructional Leadership (Blasé & Blasé, 2000)

Themes	Strategies
Talking with teachers to promote reflection	1. Making suggestions 2. Giving feedback 3. Modeling 4. Using inquiry and soliciting advice and opinion 5. Giving praise
Promoting professional growth	1. Emphasizing the study of teaching and learning 2. Supporting collaboration efforts and educators 3. Developing coaching relationships among educators 4. Encouraging and supporting redesign of programs 5. Applying the principles of adult learning, growth and development to all phases of staff development 6. Implementing action research to inform instructional decision making

Blasé and Blasé (2000) listed six strategies under the dimension of promoting professional growth as "1) emphasizing the study of teaching and learning, 2) supporting collaboration efforts among educators, 3) developing coaching relationships among educators, 4) encouraging and supporting redesign of programs, 5) applying the principles of adult learning, growth, and development to all phases of

staff development, and 6) implementing action research to inform instructional decision making" (p 135). Each of these factors is detailed next.

Emphasizing the study of teaching and learning was related to the behaviors of principals providing opportunities for staff development, giving teachers the discretion in attending training, and supporting innovation. Teachers were not forced to attend any in-services training but they were given freedom to attend sessions that they think could learn new thing. Principals impressed their teachers through their attendance in the knowledge sharing session. Effective leaders planned schedules to meet their teachers and used the opportunities to review evidence of student learning (DuFour & Marzano, 2009). Other researchers proposed school leaders to establish learning communities in schools to encourage continuous improvement in instructional practices (Fullan, 2002; Lambert, 2002; Robinson & Timperley, 2007).

The second strategy was supporting collaboration among educators. Effective principals were found to advocate teamwork, allocate time for collaborative work and promote peer observation to improve instruction. They recognized that collaboration among teachers was important for successful teaching and learning. Among others, the activities initiated by principals included encourage teachers to meet on regular basis, allocated time for collaboration and actively encouraged teachers to meet often to discuss various issues concerning their professional growth and student learning. Collaboration was encouraged not only for teachers within the school but also with those outside the schools. Collaboration was also mentioned in

many instructional leadership framework (such as Crum et al., 2009; DuFour & Marzano, 2009; Ylimaki, 2007).

Effective principals encouraged teachers to become peer coaches. Teachers were asked to observe each others' teaching sessions to gain new ideas for improving classroom instruction. In doing so, teachers played the role both as a model and a learner. Teachers felt encouraged when someone was sent to observe their teaching as seen the following excerpt "He sent teachers to observe my classes. This made me feel good about myself and my teaching and inspired me to look for ways to stay on top of current topics" (Blasé & Blasé, 2000, p 136). Peer coaching among teachers contributed to the transfer of training in the following five ways: 1) practice the newly learned teaching strategies more frequently and develop greater skill in the actual move, 2) use the newly learned strategies more appropriately, 3) exhibit greater long term retention of the knowledge and skill of the newly learned strategies, 4) more likely to teach using the newly learned strategies, and 5) have a better understanding with regard to the purposes and uses of the newly learned strategies (Blasé & Blasé, 2004). Encouraging coaching relationship among teachers was also regarded important by other researchers (Fullan, 2002; Scurry, 2010; Southworth, 2002).

Effective principals encouraged and supported redesign of instruction programs. They also encouraged their teachers to use diverse approaches to teaching and learning. Teachers were allowed freedom to decide on strategies of teaching and

groupings. Principals provided essential resources to materialize program redesign as seen in:

> Our school has a form that teachers can fill out listing the resources
> they need. The form goes to our teacher council. The teacher has a
> representative present a rational for the need. Most often the request
> is approved and the material is bought immediately (Blasé & Blasé,
> 2000, p 136)

As other studies showed, encouraging and supporting redesign of instruction programs led to better way of doing things (Blasé, 1987; Lambert, 2002), and improved student achievement (Kythreotis et al., 2010).

Apart from that, effective instructional leadership applied the principle of adult learning, growth, and development to staff development. The principals created working environment that promotes collaboration, inquiry, lifelong learning, experimentation and reflection according to teachers' ability and stage of life. Teacher professional development based on principles of adult learning when carried out on voluntarily basis resulted in improved self image, increased professional learning, enhanced peer interaction, increased responsibility, and improved morale (Blasé & Blasé, 2004). Teachers were encouraged to collaborate with each other within the same school.

Collaboration practices establish the idea that teachers are the knowledge source. My own confidence levels have increased as I have been developing in an environment in which practice and application are encouraged and assistance is provided through both colleagues and supervisors (Blasé & Blasé, 2000, p 136)

Finally, effective principals promoted the use of action research in their schools to decide on the next course of action. They carried out research to find answer to the problems faced so that proper corrective measures can be taken. For example, principals use survey to find out teachers' needs in staff development program. Teachers were encouraged to do likewise, using class and school-based data to determine the effects of activities that take place in the classroom. The use of data as a guide in making decisions and practice facilitated sustainable school improvement (Lambert, 2002). The decision to take certain actions was deemed to be more objective and specific in solving a particular problem; not based on intuition or hearsay. The use of data to inform decision making was also regarded as important by Crum et al. (2009), and Hallinger and Murphy (1985).

Compare to other instructional leadership models, principal behaviors in the Blasé and Blasé (2000) model encompassed detailed aspects of leadership behaviors in relation to teacher development (Table 2.5). The model had 11 factors of principal behavior in the areas of talking to teacher to and promoting professional growth that had the impact of improving classroom teaching (Blasé & Blasé, 2000). In other instructional leadership models, promoting professional growth was only one of the

factors in the models that outlined the wider scope of instructional leadership duties (Hallinger & Murphy, 1985; Quah, 2011; Sanzo et al., 2011; Southworth, 2002). Blasé and Blasé (2000) mentioned that instructional leadership behaviors in their model influenced teacher positively, including improved teacher efficacy.

2.3.4 The Framework of Instructional Leadership Behavior for the Current Study

The review of four different instructional leadership models (Andrews & Soder, 1987; Blasé, 1987; Blasé & Blasé, 2000; Hallinger & Murphy, 1985) found that principals who are perceived as effective instructional leaders by their teachers drew on the same repertoire of behavior. Despite the differences in its name, detailed examination of constructs suggested similarity among them. To cite an example, the instructional behavior of giving feedback was worded as "My principal provides frequent feedback regarding my class performance" (Quinn, 2002, p 465). In the instructional leadership construct proposed by Hallinger and Murphy (1985), giving feedback was gauged by "Principal point out specific strengths in teacher instructional practices in post-observation conferences" (p 241). At the same time, Blasé and Blasé (2000) mentioned it as "Principal provides feedback based on observed classroom behavior (p 133). After reviewing these frameworks, the researcher decided to adopt and adapt the instructional leadership framework that consists of talking with teacher to promote reflection and promoting teacher professional growth (Blasé & Blasé, 2000). In the framework, talking with teacher to promote reflection is further divided into four factors and promoting teacher professional growth into six factors.

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Table 2.5: Domains of Instructional Leadership

Hallinger & Murphy (1985)	Andrews & Soder (1987)	Blase (1987)	Blase & Blase (2000)
• Framing clear school goals	• Resource provider	• Accessibility	• Making suggestions
• Communicating clear school goals	• Instructional resource	• Consistency	• Giving feedback
• Supervising and evaluating instruction	• Communicator	• Knowledge/ expertise	• Modelling
• Coordinating curriculum	• Visible presence	• Clear and reasonable expectations	• Using inquiry and soliciting advice and opinion
• Monitoring student progress		• Decisiveness	• Giving praise
• Protecting instructional time		• Goals/direction	• Emphasizing the study of teaching and learning
		• Follow-through	
• Promoting professional development		• Ability to manage time	• Supporting collaboration efforts and educators
• Maintaining high visibility		• Problem-solving orientation	• Developing coaching relationships among educators
• Providing incentives for teachers		• Support/ confrontation of conflict	• Encouraging and supporting redesign of programs
• Enforcing academic standards		• Participation/ consultation	• Applying the principles of adult learning, growth and development to all phases of staff development
		• Fairness/ equitability	
• Providing incentives for students		• Recognition: praise and reward	• Implementing action research to inform instructional decision making
		• Willingness to delegate authority	

The selection of the framework is based on the following justifications: 1) The framework identifies the behavior of principals talking to teachers promote reflection as one of the dimensions. Reflection has been mentioned as the common practices of successful teachers (Glasgow & Hicks, 2003; Lambert, 2002). 2) The framework includes the behavior of principals that develops teachers as individuals and professionals. Teacher development effort is crucial because teachers are directly involved in the instructional process (Barber & Mourshed, 2007: Leithwood et al., 2008). Besides, some researcher mentioned that development of teachers is needed for sustainable school improvement (Crum et al., 2009; Lambert, 2002; Sanzo et al., 2011). The more supportive the principals are, the more conducive the school is for teacher development. 3) Both talking with teacher to promote reflection and promoting teacher professional growth have been associated with enhanced teacher efficacy (Blasé & Blasé, 2000; 2004). As teacher efficacy is the dependent variable of the current study, Blasé and Blasé Model is thus preferred over other models in this study. 4) The findings of Blasé and Blasé' (2000) qualitative study were derived from interviews with teachers. Therefore, the findings were considered potent as they provided insights into what instructional leadership behavior helps teachers to grow and what the teachers want and find helpful from their principals. 5) The dimensions in the Blasé and Blasé (2000) instructional leadership model were consistent with the instructional leadership theory which posits that the behaviors of school leaders influence student achievement. Instructional leadership behaviors in the areas of developing the teachers would ultimately lead to student achievement. 6) The instructional leadership framework of the current study was supported by the empirical data. Analysis of data collected from the pilot study showed that the

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construct was both valid and reliable. Further discussion on the pilot study findings is found in Chapter Three.

2.3.4.1 Talking with Teacher to Promote Reflection

Talking with teachers was identified as the first dimension of instructional leadership behavior (Blasé & Blasé, 2000). The instructional leadership framework of the current study postulated that talking with teachers to encourage reflection consists of four factors: 1) making suggestions, 2) giving feedback, 3) giving praise, and 4) using inquiry and soliciting advice and opinion. The factors reflected the construct of other instructional leadership models as shown in Table 2.6.

Table 2.6: Instructional Leadership Behavior Related to Talking with Teachers to Encourage Reflection

Blasé & Blasé (2000)	Hallinger & Murphy (1985)	Andrews & Soder (1987)	Blasé (1987)
• Making suggestions	• Supervising and evaluating instruction	• Instructional resource	• Recognition, praise and reward
• Giving feedback	• Communicating the school goals	• Communicators	• Knowledge/ expertise
• Modeling	• Monitoring student progress	• Visibility	
• Giving praise	• Maintaining high visibility		
• Using inquiry and soliciting advice and opinion	• Providing incentives for teachers		

Talking with teachers to encourage reflection is deemed important because it has been related to enhanced teacher efficacy (Blasé & Blasé, 2000; 2004). Other studies related the behaviors to student achievement (Butler, 2012; Hallinger et al., 1996; Southworth, 2002). Nevertheless, the influence of talking with teachers to encourage reflection and student achievement is indirect. Hallinger et al. (1996) mentioned that leadership influences student achievement via clear mission, student opportunity to learn, teacher expectation and instructional approach. In the study, principal leadership was measured using 18 items which included "The principal is highly visible throughout the school" and "The principal makes several formal classroom observations each year" (p 545). The items were related to talking with teachers to encourage reflection as the behaviors furnished the principals with relevant input about the school when they talk to the teachers. The study concluded that principal leadership influenced student achievement via school climate.

In what follows, each of the factors of the instructional leadership framework is reviewed in detail one after another.

2.3.4.1.1 Making suggestions

Empirical studies mentioned effective principals would make purposeful, appropriate and non-threatening suggestions to help teachers improve their classroom instruction (Blasé & Blasé, 2000). In talking to teachers, the principals would merely give suggestions and let teachers to have the final say on their next courses of action. Through this way, the principals could suggest appropriate teaching methods and ways to improve classroom teaching. In giving suggestions, activities of principals

include "listening, sharing their experiences, using examples and demonstrations, giving teachers choice" (Blasé & Blasé, 2000, p 133). The researchers mentioned that if teachers need help, principals would make an effort to use their teaching as an example of what and how to do thing. These types of suggestion on classroom instruction were useful because principals were looked up upon by their teachers as a reference for appropriate teaching methods on specific subject areas (Glickman et al., 2007; Lahui-Ako, 2001; Sanzo et al., 2011). The suggestion could be given to teachers during post-observation conference or at other time in the school such as spontaneous conversations at the corridor (Andrews & Soder, 1987).

The ability to make useful suggestions is related to principal being involved in and aware of activities in the school. Principals' presence in the meeting motivated teachers. Apart from that, effective principals regarded presence in meeting as a platform to get to know their teachers closer. Teachers perceived principals who were always physically present and made effort to attend various meetings in the school as more effective (Andrews & Soder, 1987; Blasé & Blasé, 2000; Hallinger et al., 1996; Quinn, 2002). Hallinger and Murphy (1985) related visible presence of principal in the school to positive school climate. Visibility behaviors mentioned by the researchers include available for consultation with teachers and students, attending co-curricular activities, substituting teachers for instruction, visiting classroom to speak to teachers and students, and structuring teaching time into their schedules. Smith and Andrews (1989) mentioned that strong instructional leaders involved themselves directly in instructional matter. In relation to this, the

involvement enabled principals to give more relevant suggestions to teachers during conferencing.

Giving suggestions is a critical job function of a principal. It is a platform for principals to invite teachers to work in a way that leads to the achievement of school goals. As the leader of the organization, principals are well aware of what the school should focus their attention on. Hallinger and Murphy (1985) mentioned that effective schools often have clearly stated goals which focus on student achievement and communicating school goals has been identified as a job function of instructional leader. It is assumed that it is the responsibility of principals to communicate the set goals to all teachers. In order to receive better response, it is suggested that principals accomplish it diplomatically through communicating it persistently to the teachers through formal and informal communication (Blasé & Blasé, 2000). Instead of forcing the goals on teachers, the behavior of suggesting them to teachers when meeting the teachers regarding their teaching and learning in the classroom would make them more committed to the initiatives carried out for the attainment of the stipulated goals. Researchers opined that the behaviors of constantly talking about school goals and aligning teachers' activities to them indicated that principals were committed to the set goals (Andrews & Soder, 1987; Murphy et al., 2007; Robinson & Timperley, 2007; Smith & Andrews, 1989).

The impact of the behavior of making suggestions on teachers included enhanced efficacy, feelings of support and bold to try out varied teaching and learning strategies (Blasé & Blasé, 2000; 2004).

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2.3.4.1.2 Giving Feedback

Giving feedback is a leadership behavior mentioned in many instructional leadership behavior models (Alig-Mielcarek, 2003; Andrews & Soder, 1987; Blasé, 1987; Blasé & Blasé, 2000; Firestone & Pennell, 1993; Lahui-Ako, 2001; Vari, 2011). Giving feedback refers to the behavior of principal giving teachers input about their performance. The feedback encourages teachers to reflect on their professional behaviors. Giving feedback should be based on observed classroom instruction (Grizzard, 2007; Glanz et al., 2007). In order to give such type of feedback, principals need to be in the classroom where teaching and learning take place. Grizzard (2007) mentioned that the presence of principal in classrooms reduced disciplinary problems. Glanz et al. (2007) opined that feedback should be preferably carried out in informal manner.

Blasé and Blasé (2000; 2004) commented that effective principals act as "the third eye" for the teachers whereby teachers receive specific feedback about their classroom practice in a friendly manner. Instead of giving prescriptions to their teachers, the teachers are coached to find an answer to their problems. Such instructional leadership behavior makes teachers reflect on their actions in the classroom and make subsequent change in behavior on their own. Likewise Lahui-Ako (2001) also mentioned observing and giving feedback as one of the main instructional leadership job functions of principals. Teachers in schools expected principals to provide feedback on the specific strengths and weaknesses in their instructional practices in post-observation conference so that they can move on to improve their classroom instruction based on the feedback.

On feedback and post-observation conference, Blasé and Blasé (2004) reported that teachers treasure the principal's visit to their classroom for observation as the visit encourages teachers to reflect on their teaching and to make behavioral change. Among the quotes cited by the researchers were as follows:

> A lot of time when we teach, we do things but forget the meanings of them and why we do them. This [talking] reinforces the meaning.
> I already know what I'm doing with my students, but the specific feedback does cause me to examine my actions and techniques more carefully. He made me realize that I make a difference. He cared enough to notice. (Blasé & Blasé, 2004, p. 96)

Glanz et al. (2007) stressed that the ultimate aim of doing classroom observation should be on teacher growth rather than teacher compliance. Therefore, feedback should be given in such a way that helped teachers to reflect for future improvement. DuFour and Marzano (2009) cautioned the usefulness of feedback to veteran teachers for the purposes of improving their teaching. In many instances, negative feedback from principals was attributed to personality conflicts with the principals or subjectivity of the evaluation rather than weaknesses in their instruction. It was more so if their instruction was rated as satisfactory by their other principals earlier.

2.3.4.1.3 Giving Praise

Praise and recognition is awarded as a sign of appreciation and a mean to encourage people to work harder in the future. Blasé (1987) listed recognition given to teachers in the form of praise and reward by the principals as a consideration-related behavior. Praise refers to verbal compliments while reward takes the form of material giving such as bonus, and pay increment. Hallinger and Murphy (1985) noticed that effective principals recognize the hard work of their teachers. They suggested that teachers should be awarded based on their performance. For establishing positive school climate, teachers who performed cannot be awarded similarly as those who did not meet the minimum mark. Similarly, other researchers opined that giving praise is what makes instructional leaders successful in school (Barker, 2007; Southworth, 2002). Successful principals were generously in praising teachers and optimistic about the ability of the school to succeed in the future.

Charf (2009) mentioned that principals' praises delighted their teachers. The teachers took it as it was an indication that their superiors recognized their works and knew what they were doing at schools. Simple verbal remarks from principals such as "You are doing a good job for me" and "I know you did that well" (p 60) made teachers felt valued. Teachers especially treasured their principals' praises which were personal and specific. The study found such behavior of principals had significant relationship with teacher efficacy measured using two different teacher efficacy scales: Bandura's (2006), and Gibson and Dembo's (1984).

Praise and award can be delivered to teachers in many forms. It can be given based on individual or group performance depending on the school dynamic. As for means of delivery, teachers preferred face-to-face interaction (Blasé, 1987). This behavior implied that the principals are willing to interact with teachers and they are sincere in giving the comments. The positive remarks made the teacher feel important and the behavior motivates her/him to work even harder in the future (Charf, 2009). The behavior of principal commending teachers was also agreed by Hallinger and Murphy (1985). They suggested principals to praise teachers as a form of incentive. The praise could be expressed to teachers privately or publicly announced. Praise made in public caused others to be aware of what is valued in the school. This awareness provided teachers with the opportunities to fine-tune their activities to school goals (Blasé, 1987).

The behavior of principals providing incentives for high performing teachers created a positive work climate (Hallinger & Murphy, 1985; Lahui-Ako, 2001; Sanzo et al., 2011). Incentives in various forms, be it in material or verbal recognition, motivated teachers to work harder which in turn establishing a positive climate for learning. Praise has the impact on motivating teachers to search for new teaching ideas and feel more efficacious in doing their jobs (Blasé & Blasé, 2000). For teachers, recognition from the principal was related to teacher self esteem, professional development, group cohesion, and teacher involvement inside and outside the classroom. Therefore, providing incentive for teachers is as an important job function of school principal as it has significant influence on teachers and school environment.

2.3.4.1.4 Using Inquiry and Soliciting Advice/Opinions

Effective principals were found to employ asking questions approach when having conference with teachers on instructional matters (Blasé & Blasé, 2000; 2004). They asked questions to find out more about what happened in the classroom from the teachers and considered teachers' views on the matter. Example of interview excerpt:

> The principal, in observing what is taking place in my classroom…
>
> She rarely has a suggestion, but her questions cause me to evaluate
>
> what I do (Blasé & Blasé, 2000, p. 134)

When principals talked to their teachers, they should talk in such a way that provokes teachers to reflect on their instruction practices: "to notice odd and unexpected things, frame a puzzle or question from them, become curious, inquire and explore, and be willing to adjust student learning experiences accordingly" (Blasé & Blasé, 2004, p 92). Similarly, Hoerr (2008) argued that principals should solicit advice from teachers on instructional matters because teachers know a lot more about pedagogy, curriculum and student learning. The opinions of these researchers were consistent with Blasé (1987) who found that teachers appreciate principals who invited them to be part of the team in decision making regarding curriculum, content area, and the problem faced by teachers and students. Apart from that, Southworth (2002) cited teachers appreciated principals who were willing to talk and listen to them, "used questions to probe teachers' assumptions" (p.84). Similarly, other researchers commented that successful principals valued inputs and

opinions from their teachers on matters concerning their schools and students (Crum, et al., 2009; Nettles & Herrington, 2007; Sanzo et al., 2011).

All above-mentioned four strategies of talking to teachers to encourage reflection were found to have positive impacts on teachers. Teachers became more motivated, have increased satisfaction, self-esteem, efficacy, reflective behavior, sense of professionalism, collegiality and involvement in school work (Blasé & Blasé, 2000; Blasé, 1987). Such findings supported the Path-Goal Theory of Leadership.

2.3.4.2 Promoting Teacher Professional Growth

Promoting teacher professional growth refers to the behavior of principals helping their teachers to grow professionally so that they are better equipped to discharge their duty as teachers. It includes providing teachers with the needed training, enabling them to collaborate with each other and allocation of resources. The ultimate aim of professional growth for teachers should be improved student learning. The instructional leadership framework of the current study postulated that promoting professional growth involves the following six factors: 1) emphasizing the study of teaching and learning, 2) supporting collaboration effort, 3) encouraging and supporting diverse teaching and learning approach, 4) developing coaching relationships, 5) initiating teamwork, and 6) doing action research to inform decision making.

Review of instructional leadership models (Andrews & Soder, 1987, Blasé, 1987; Blasé & Blasé, 2000; Hallinger & Murphy, 1985) found that the role of principal to promote professional growth for teachers is mentioned in all of them. Besides, promoting professional growth is also seen in many other instructional leadership models (Alig- Mielcarek, 2003; Fullan, 2002; Lambert, 2002; DuFour & Marzano, 2009; Leithwood et al., 2008; Purkey & Smith, 1983; Quah, 2011; Ryan, 2007; Sanzo et al., 2011). These findings inferred that promoting professional growth is a very important aspect of instructional leadership behavior that cannot be overlooked by school principals. A comparison of four instructional leadership models found similarity in promoting professional growth as shown in Table 2.7.

Table 2.7: Instructional Leadership Behavior Related to Promoting Professional Growth

Blasé & Blasé (2000)	Hallinger & Murphy (1985)	Andrews & Soder (1987)	Blasé (1987)
• Emphasizing the study of teaching and learning • Encouraging collaborative effort • Developing coaching relationship • Supporting diverse teaching and learning approach • Initiating teamwork • Doing action research to inform decision making	• Promoting professional development	• Resource provider	• Support/ confrontation of conflict • Participation/ consultation • Willingness to delegate power

From the comparison of the factors in Table 2.7, it was obvious that promoting professional growth was not given the same weight in all four models. The model of Blasé and Blasé (2000) suggested a more comprehensive list of instructional leadership behavior in the aspect of promoting professional growth. There are six factors related to promoting professional growth in the Blasé and Blasé model as compared to the other three instructional leadership models that have fewer numbers of factors. For example, in the Hallinger and Murphy (1985) instructional leadership model, promoting professional development is one of the eleven factors. Examination of construct in the Hallinger and Murphy (1985) found items that reflect the six factors in promoting professional growth (Blasé & Blasé, 2000). Examples of item in the Hallinger and Murphy (1985) include "Support teacher requests for in-service that is directly related to the school's academic goals", "Actively support the use of skills acquired during in-service training in the classroom", "Arrange for outside speakers to make presentations on instruction at faculty meetings", and "Set aside time at faculty meetings for teachers to share ideas on instruction or information from in-service activities" (p 243). Each of the six factors of promoting professional growth is explained in detail next.

2.3.4.2.1 Emphasizing the Study of Teaching and Learning

Teachers needed opportunities to develop themselves professionally in terms of knowledge and skills (Blasé & Blasé, 2000; Fullan, 2002; Hallinger & Murphy, 1985; Purkey & Smith, 1983; Quah, 2011; Ylimaki, 2007). As the head of the school, principal's role in developing teachers professionally was viewed as a critical factor for school success (Barker, 2007). Principals could support teachers in

professional development through 1) informing them about training opportunities, 2) be a trainer for the training, and 3) ensure that the training is closely related to instructional goals of the school (Hallinger & Murphy, 1985). Staff development program must be based on the expressed need of teachers (Blasé & Blasé, 2000; Day, Leithwood, & Sammons, 2008; Purkey & Smith, 1983). This means that the training should address teachers' instructional problems or enable them to learn new teaching strategies. In doing so, teacher must be given the discretion in attending the training. This is because teachers must be allowed to only attend the training that in their opinion, would give them new knowledge. Apart from that, training that is perceived by teachers as a form of remedial will also encounter objection.

Teachers need further support from principals to implement the newly acquired teaching strategies in the classroom. Effective principals play their roles in this area by providing the necessary resources in the form of materials, information and even moral support (Andrews & Soder, 1987). Through this way, principals act as instructional resource in the school. Not only they ensured that teachers attend staff development programs to up-grade themselves, they helped in the transfer of the knowledge and skills learned into the classroom implementation.

Ylimaki (2007) mentioned that effective instructional leader sent their teachers for further training outside the school and brought back their impression to the school. They shared their acquired knowledge with their colleagues for student improvement efforts. On the other hand, other researchers advocate school wide staff development programs that involve every teacher in the school (Lambert, 2002; Ross & Gray,

2006). This is done through school-based staff development activities. The researchers suggested that principals create structures consist of teams of teachers who learn from each other within the school. Among others, principals could encourage learning groups such as study groups, action research teams, vertical learning communities, and leadership teams (DuFour & Marzano, 2009). Such interventions made teachers be responsible for the learning of not only theirs but also that of their colleagues. School-based professional development fostered the establishment of a culture in which teachers hold professional dialogues formally and informally frequently in the school (Southworth, 2002).

Staff development opportunities for teachers, though carried out differently in different schools due to the constraints of resource, time and the difference in strategic school goals, had resulted in enhanced learning for students (Andrews & Soder, 1987), improved staff relationships (Fullan, 2002), and enhanced motivation and teacher efficacy (Blasé & Blasé, 2000).

2.3.4.2.2 Encouraging Collaborative Effort

Effective principals were found to allocate time for collaborative work and promote sharing to improve instruction (Blasé, 1987; Blasé & Blasé, 2000; Crum et al., 2009; Lambert, 2002; Sanzo et al., 2011; Southworth, 2002; Ylimaki, 2007). Teachers work as a team, sharing their strength, move towards accomplishing the strategic goals of their school. The working together enables teachers to share their knowledge, skills, and teaching and learning resources at school level. In order to facilitate the meeting of teachers, it was suggested that principals 1) create schedules

for teachers to meet on regular basis, 2) create structure that ensure the team's focus is on student learning, and 3) provide support in terms of resource, training and other tools they need to become functional (DuFour & Marzano, 2009). Collaboration structure and support enable teachers to meet to discuss instruction matters on regular basis. The collaboration effort can be for teachers in the same school or even involving teachers from other schools within the same district (Blasé & Blasé, 2000; Ylimaki, 2007). This effort will ultimately be transformed to improved learning for students.

Similarly, effective principals acknowledged that collaboration among teachers is the crucial ingredient for running the school. Successful schools see the principals initiate moves to develop a team of teachers who exhibit the following characteristics.

> …professional openness, a unity of purpose, clear and shared goals and educational values, consistency in teaching and learning, continuity in curriculum, and agreed and implemented classroom practices... (Southworth, 2002, p.83)

Teachers felt valued working in such type of school. They are regarded as a source of knowledge for each other (Blasé, 1987; DuFour & Marzano, 2009; Lambert, 2002). Glanz et al. (2007) mentioned that principal's intervention to create a collaborative and collegial culture among teachers is the critical contributor to school's success. Teachers' opinions and views were taken seriously and given its due consideration. As such they were willing to do beyond what was required. Apart

from that, Blasé (1987) associated greater teacher input in decision making with increased involvement in school work. When teachers' input were sought after before principals made any decision that involved the teachers, it created a sense of belonging and thus greater involvement. Consequently, it is not surprising that collaboration among teachers have been associated with high level of motivation, instructional variety and improved teacher efficacy.

> Collaboration practices establish the idea that teachers are the knowledge source. My own confidence levels have increased as I have been developing in an environment in which practice and application are encouraged and assistance is provided through both colleagues and supervisors (Blasé & Blasé, 2000, p. 136)

2.3.4.2.3 Developing Coaching Relationships

Coaching helps teachers develop strength in pedagogy skill individually and collectively (Glickman et al., 2007; Hoerr, 2008; Southworth, 2002; Ylimaki, 2007). Instructional leaders develop coaching relationships among educators by encouraging teachers to become peer coaches. In a coaching relationship, teachers observe each others' teaching sessions to gain new ideas to improve their own teaching. In doing so, teachers play the role both as a model and a learner. Among others, effective principals were found to advocate peer coaching for 1) improving classroom instruction, 2) encouraging and recognizing exemplary teachers who were willing to model teaching sessions (Blasé & Blasé, 2004; Manthey, 2006). Similarly, Sanzo et al. (2011) mentioned successful school principals encourage their teachers to make presentations on matters concerning classroom instruction and professional

development at faculty meetings. As there are many exemplary teachers and senior teachers in secondary schools in Kedah, it would be possible to examine how these teachers were included in the instructional leadership role of their principals and its subsequent impacts on school climate and teacher efficacy.

Successful principals coach their teachers to improve the quality of teaching and learning (Opdenakker & Damme, 2007; Southworth, 2002). The behaviors of principals mentioned by the researchers include modeling and monitoring. Modeling refers to the effort of principals using their teaching as example of what and how to do things, and giving support to teachers in the classroom. On the other hand, monitoring refers to the behaviors of principals looking at teacher weekly teaching plans, supervising teachers in the classroom, checking student work, observing the implementation of school policies, and monitoring student assessment progress. Such instructional leadership behavior is also mentioned by Hallinger and Murphy (1985) under the principal job functions as supervising and evaluating instruction, coordinating curriculum, and monitoring student progress. In other models, it is mentioned as managing teaching and learning program (Leithwood et al., 2008), monitoring and providing feedback on the teaching and learning process (Alig-Mielcarek, 2003), managing curriculum and instruction, assessing instructional program (Lahui-Ako, 2001), and instructional resources (Andrews & Soder, 1987; Quinn, 2002).

2.3.4.2.4 Encouraging Diverse Teaching and Learning Approach

Effective principals allowed their teachers to use varied teaching and learning approaches during classroom instruction (Andrews & Soder, 1987; Blasé & Blasé, 2000; Opdenakker & Damme, 2007). Principals played their part by providing essential resources to facilitate the implementation of new teaching strategies. Teachers appreciated principals who provide them with the necessary resources and advice to support the implementation of new ways of doing things. The importance of providing essential resource is mentioned in the following excerpt.

> She does what she can to provide necessary instructional resources.
> Our school has a form that teachers can fill in listing the resources
> they need. The form goes to our teacher council. The teacher has a
> representative present a rational for the need. Most often the request
> is approved and the material is bought immediately (Blasé & Blasé,
> 2000, p.136)

Similarly, other researchers also regarded encouraging diverse teaching and learning approach as an important principal behavior (Blasé, 1987; Edmonds, 1979; Kythreotis et al., 2010). Blasé (1987) mentioned that effective principals are those who initiated new programs, continually supervised and provided essential resources to maintain and enhance teacher work efforts. The support from principals made teachers bold to try out new way of doing thing. Edmonds (1979) commented that at times principals must be bold to divert other energy and resources to the core business of the school if the need arises. Such interventions ensure that school resources were utilized at the optimum level. Many other researchers related the

availability of and easy access to resources in the school with a positive work climate (Hoy et al., 1991; Hoy & Woolfolk, 1993; Johnson et al., 2007).

Apart from that, effective instructional leaders were found to apply the principle of adult learning, growth, and development to staff development (DuFour & Marzano, 2009; Murphy et al., 2007; Sanzo et al., 2011). Effective principals create the teaching and learning environment which was characterized by staff collaboration, inquiry, lifelong learning, experimentation and reflection according to teachers' ability and stage of life (Blasé & Blasé, 2000; Lambert, 2002). Murphy et al. (2007) mentioned that improvement- focused principals model a lifelong commitment to learning. On top of that, effective principals were found to develop a culture that emphasize on continuous improvement of teachers' knowledge and skills that help student to succeed in their learning (Lambert, 2002; Maeyer et al., 2007; Murphy et al., 2007). Besides, leadership that encouraged innovation was found to cause improved student achievement in a direct manner or through an indirect path (Kythreotis et al., 2010). The researchers mentioned that prinicpal's leadership style influenced classroom learning culture which in turns affected student achievement. Classroom learning culture is related to teacher efficacy. Such behaviors of principals resulted in increased efficacy, greater varieties in classroom instruction, higher risk taking, better staff collaboration (Blasé & Blasé, 2000).

2.3.4.2.5 Initiating Teamwork

Southworth (2002) advocated that successful principals recognized that contribution of ever member in the success of programs. These principals regarded teamwork as a crucial ingredient in running the school. Successful schools see the principals initiate moves to develop a team of teachers who exhibit the following characteristics.

> …professional openness, a unity of purpose, clear and shared goals
> and educational values, consistency in teaching and learning,
> continuity in curriculum, and agreed and implemented classroom
> practices… (p.83)

Glanz et al. (2007) mentioned that principals encourage teamwork by planning schedule for teachers to observe each other teaching. Such move has been helpful for building teacher capacity especially new teachers in the building. The importance of principals initiating teamwork was also mentioned by other researchers such as DuFour and Marzano (2009), Lambert (2002), and Robinson and Timperley (2007). Among the teamwork initiatives mentioned in the literature include forming study groups (Blasé & Blasé, 2000; Lambert, 2002), creating learning communities (Blasé & Blasé, 2000; DuFour & Marzano, 2009; Fullan, 2002; Lambert, 2002; Murphy et al., 2007; Robinson & Timperley, 2007), and encouraging professional dialogue (Glanz et al., 2007; Hoerr, 2008; Southworth, 2002). Some of the researchers even suggested teamwork effort with teachers from other schools (DuFour & Marzano, 2009). Others proposed setting up structure and schedule to enable teachers to meet within school hours (Mulford & Silins, 2003; Murphy et al., 2007; Sanzo et al., 2011). These teamwork initiatives enable teachers working together to solve

instructional problems they encounter. The existence of these groups in the school was associated with sustained improvement (Fullan, 2002; Lambert, 2002; Sanzo et al., 2011).

2.3.4.2.6 Doing Action Research to Inform Decision Making

Effective principals promoted the use of findings from action research to decide on the next course of action (Blasé & Blasé, 2000; Fullan, 2002; Hallinger & Murphy, 1985; Lambert, 2002). These principals carried out research to derive an answer to the problem so that proper corrective measures can be taken. For example, principals used survey to find out teachers' needs in staff development program. Teachers were encouraged to do likewise, using class and school-based data to determine the effects of activities that take place in the classroom. The use of data as a guide in making decisions and practice facilitated sustainable school improvement (Lambert, 2002; Leithwood et al., 2008; Ylimaki, 2007). The decision to take certain actions was deemed to be more objective and specific in solving a particular problem; not based on intuition or hearsay.

The importance of using data to support classroom instruction has also been mentioned by a few researchers. Edmonds (1979) mentioned that effective school puts in place some means to frequently monitoring student progress. Data on student progress in learning helped teachers to plan a more effective next course of action for classroom instruction (Glanz et al., 2007). The role of principals in this area would be to provide teachers with student results timely (Hallinger & Murphy, 1985). On top of that, principals must have the knowledge and skills of interpreting the given

data as it would help them to make informed decision regarding their schools and instructional matters (Crum et al., 2009; Sanzo et al., 2011). In a nutshell, all the researchers nailed home a point that the use of data in decision making makes principlas more effective instructional leaders as the decisions they made were not based on intuition but hard facts. Sanzo et al. (2011) commented that decision based on survey data enable principals to provide the types of staff development program which meet teachers' real needs in professional development.

Blasé and Blasé (2000) lamented the lack of study on the impact of doing action research to inform decision making while Crum et al. (2009) mentioned that data-based decision making is not common in most schools and it must be developed consciously. Therefore, the researcher would like to find out how this principal behavior influences school climate and teacher efficacy in the current study. The finding will provide some insights regarding this matter which is lack in research.

2.4 School Climate

Like leadership, there are various definitions for climate in the literature. Cited below are some of the many definitions: 1) the norms and expectations for members of a social system (Brookover et al., 1978), 2) the enduring quality of organizational life which can be perceived in terms of personality or health (Hoy et al., 1991), and 3) a set of internal characteristics that differentiates one school from another and it influences the behaviors of students, teachers and administrators in the school (Hoy & Miskel, 2005).

2.4.1 School Climate Concept

Hoy and Miskel (2005) defined school climate as "a relatively enduring quality of the school environment that is experienced by the teachers, and affects their behavior, and is based on their collective perceptions of behavior in school" (p. 413). Hallinger et al. (1996) emphasized the role played by principals in the building of a positive school climate that promotes student achievement. The researchers proposed that the examination of school climate should include the measure for instructional climate and instructional organization. On the other hand, Rentoul and Fraser (1983) mentioned that the measures of climate should include three general dimensions: 1) relationships, 2) personal development, and 3) system maintenance and system change. From these definitions of school climate, it can be concluded that 1) principals play a central role in the building of school climate, 2) school climate is determined by teachers' perception of behaviors in school, 3) school climate influences everyone in school, including teachers, and 4) climate that emphasized on teaching and learning fosters student achievement.

2.4.2 Measurements of School Climate

Review of literature found that there are a few measures of school climate, including Organizational Climate Description Questionnaire (OCDQ) (Grizzard, 2007), Organizational Health Inventory (OHI) (Hoy et al., 1991; Sukarmin, 2011), academic press (Alig-Mielcarek, 2003) and School Level Environment Questionnaire (SLEQ) (Johnson et al., 2007; Siti Noor Ismail, 2011).

School climate was viewed using personality metaphor or health metaphor (Hoy et al., 1991). When climate was viewed as personality metaphor, school is analyzed in terms of its openness; while as health metaphor, it was analyzed in terms of school health. A healthy school is characterized by the state where the technical, managerial and institutional levels were in equilibrium (Hoy & Miskel, 2005). Apart from these, other school climate measures include dimensions such as excellence, recognition, power and affiliation (Gupton, 2003), and academic optimism (Hoy et al., 2006).

In some empirical studies, school climate was measured by only a single dimension such as academic climate (Chong et al., 2010), and student sense of academic futility (Brookover et al., 1978). Many other researchers preferred to measure school climate using the multi-dimensional construct (Alig-Mielcarek, 2003; Brown, 2009; Fisher & Fraser, 1990; Gupton, 2003; Hoy et al., 1991; Hoy & Miskel, 2005; Hoy & Woolfolk, 1993; Johnson et al., 2007; Sukarmin, 2010). Each of these school climate constructs was made up of more than one dimension. To cite some examples, Alig-Mielcarek (2003) mentioned three dimensions in the school climate construct namely academic emphasis, resource support and principal influence, while Sukarmin (2010) identified five dimensions, which are institutional integrity, collegial leadership, teacher affiliation, resource influence and academic emphasis. When examined in detail, it was found that the climate constructs of both research originated from the Organizational Health Inventory (OHI). The difference in the contents in the aforementioned school climate measures could be due to contextual difference. The researchers have thus renamed these climate measures accordingly. The findings

have also suggested the need to do validity and reliability tests on ready-made questionnaires.

Using the construct defined, items were constructed to develop questionnaires to gather data on school climate. Most of the original questionnaires were adapted by other researchers and thus might contain dimensions which differ from the original ones. In what follows, the review will focus on three commonly used measures of climate, namely Organizational Climate Description Questionnaire (OCDQ), Organizational Health Inventory (OHI) and the revised School Level Environment Questionnaire (SLEQ).

Organizational Climate Description Questionnaire (OCDQ) was developed after a group of researchers noticed the following characteristics in elementary schools from their studies: 1) there was a significant difference in school feel; 2) the concept of morale did not provide an index of this feel, and 3) principals' performance in a school that needed improvement was impaired by faculty members (Hoy & Miskel, 1991). The original OCDQ measure, consisting of eight dimensions, attempted to map and identified interaction patterns between teacher-teacher and teacher-principal in elementary schools (Hayes, 1973; Hoy et al., 1991). Four of the dimensions referred to the characteristics of teachers (Table 2.8) while the other four characteristics of principal (Table 2.9).

Table 2.8: The OCDQ Subscales – Characteristics of Faculty Behaviours

Characteristics of faculty behaviors	
Hindrance	Teacher perception of principal asking them to do burdensome and unnecessary work
Intimacy	Teachers' enjoyment of warm and friendly relationship with each other
Disengagement	Teachers carry out the tasks without an actual commitment to the task
Esprit	Teachers feel satisfied for fulfilling social needs and task accomplishment

Table 2.9: The OCDQ Subscales – Characteristics of Principal Behaviours

Characteristics of principal behaviors	
Production emphasis	Principals implement close directive supervision without giving much attention to faculty feedback
Aloofness	Principals keep a social distance and manage by the 'book'
Consideration	Principals show warm and friendly behaviors and would do extra for his faculty when he can
Thrust	Principals move the organization by setting dynamic behaviors for teachers to follow

The score for all factors were standardized so that the mean scores for the factors might be used to plot the school profile. Combination of these factors gave an indicator about the school personality, in terms of its openness. For example, school with high scores of thrust and esprit and low disengagement indicated open climate. There were altogether six basic climates that arrayed along a rough continuum from open to closed (Cheng, 1985; Grizzard, 2007; Hoy et al, 1991; Hoy & Miskel, 2005). Table 2.10 showed the characteristics of each of the six types of organizational

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climate. The first three climate types were derived based on principal-teacher interactions. Open climate equates supportive principal behavior, autonomous equates directive principal behavior, and controlled climate with restrictive principal behavior. The latter three climate types described teacher-teacher interaction: familiar climate (collegial teacher behavior), paternal climate (committed/intimacy teacher behavior) and closed climate (disengaged teacher behavior).

From this, it can be inferred that the interaction behaviors between principal and teachers; and among teachers have an impact on school climate. This measure of school climate considered the relationship among teachers and between principal and teachers in the schools. It did not consider other aspects in the school such as student relations and resources for teaching and learning which would have influence on teachers' perception of their work environment (Andrews & Soder, 1987; Blasé & Blasé, 2000).

Table 2.10: Characteristics of the Organizational Climate Type

Climate Dimension	Climate type					
	Open	Autonomous	Controlled	Familiar	Paternal	Closed
Hindrance	L	L	H	L	L	H
Intimacy	M	H	L	H	L	M
Disengagement	L	L	L	H	H	H
Esprit	H	H	H	M	L	L
Production emphasis	L	L	H	L	H	H
Aloofness	L	H	H	L	L	H
Consideration	H	M	L	H	H	L
Thrust	H	M	M	M	M	L

H – High, M – Moderate, L- Low

The OCDQ has since been revised and refined for use in two different school levels: OCDQ-RE for elementary schools, OCDQ-RS for secondary schools (Grizzard, 2007; Hoy et al., 1991; Lord, 2001). The OCDQ-RE consists of 42 items spread across six types of human interaction, namely supportive principal behavior, directive principal behavior, restrictive principal behavior, collegial teacher behavior, intimacy teacher behavior and disengaged teacher behavior (Grizzard, 2007; Hoy et al., 1991). On the other hand, the OCDQ-RS consists of only 34 items spread across five types of interaction: supportive principal behavior, directive principal behavior, engaged teacher behavior, intimacy teacher behavior and frustrated teacher behavior (Lord, 2011; Hoy et al., 1991). Sample item from the OCDQ-RS is "The principal sets an example by working hard" (Hoy et al., 1991, p. 45). The OCDQ has been used to measure climate in different school settings with reported high reliability values (Ahmad Rusli Din, 1997; Butler, 2012; Cheng, 1985; Hearn, 2010).

While OCDQ measures organizational personality, OHI analyzes the nature of organizational health. Researchers claimed that an organization must be healthy in order to have the ability to survive, grow and prosper in its environment and health metaphor could be used to examine properties of schools in relation to these abilities (Hoy et al., 1991; Sukarmin, 2010; Wan Roslina Wan Ismail, 2011). Like the OCDQ, there are two versions of OHI, one each for elementary school (OHI-E) and secondary school (OHI-S). Due to the substantially difference for these two levels of school, the difference in dimensions of OCDQ and OHI for different level use is understandable. The OHI-S contains seven dimensions that include institutional

integrity, principal influence, consideration, initiating structure, resource support, morale, and academic emphasis (Lord, 2001; Wan Roslina Wan Ismail, 2011). On the other hand, OHI-E contains only five dimensions, namely teacher affiliation, collegial leadership, resource influence, institutional integrity and academic emphasis (Hoy et al., 1991; Sukarmin, 2010). The OHI has been used in empirical studies to investigate school climate with reported high reliability values (Hoy & Woolfolk, 1993; Sukarmin, 2010; Zalilah Ismail, 2003). As compared to the OCDQ, the OHI construct is more comprehensive as it involves dimensions beyond human interaction which include resource utilization and school development aspects.

The SLEQ is a relatively new measure for school climate as compared to the OCDQ and OHI. The questionnaire measures teachers' perceptions of the psychosocial dimensions of school. The SLEQ was adapted from the Work Environment Scale which consists of three dimensions: relationship, personal development, and system maintenance and system change, for it to be specifically used in schools (Rentoul & Fraser, 1983). Perceptions of teachers provide useful information about the climate state of schools and thus were viewed as an input that enables teachers to work on particular areas to improve the environments of their own schools. The original SLEQ has since been adopted and adapted by other researchers (Fisher & Fraser, 1990; Frederick, 2007; Johnson et al, 2007; Siti Noor Ismail, 2011). There are a few versions of SLEQ with slightly different composition of school climate construct.

The SLEQ proposed by Fisher and Fraser (1990) contained seven scales: student support, affiliation, professional interest, staff freedom, participatory decision making, innovation, and resource adequacy. The distribution of these scales under the three general categories of Moos' psychosocial environment is as follows: two scales for relationship (student support and affiliation), one scale for personal growth (professional interest) and five scales for system maintenance and system change (staff freedom, participatory decision making, innovation, resource adequacy and work pressure). Validation of the questionnaire was performed involving the collection of data from three groups of teachers. Statistical analysis results showed that the SLEQ displayed satisfactory internal consistency and discriminant validity. The Cronbach Alpha values for all scales were greater than the minimum acceptable value of .60, the lowest being .64.

Johnson et al. (2007) revised the SLEQ and administered it to a sample of 4,920 teachers from a large urban district. Response scores were validated for validity and reliability. Exploratory and confirmatory factor analysis results suggested retaining only five out the eight scales in the SLEQ. The researchers named the newly adapted questionnaire as the revised SLEQ. It has 21 items in five scales: collaboration (six items), decision making (3 items), instructional innovation (4 items), student relations (4 items), and school resources (4 items). Besides that, the statistical results also displayed high internal consistency for the five scales with Cronbach alpha values ranged from.77 to .86. The reported internal consistent value for the overall questionnaire was .90.

In the current study, the researcher chose to use SLEQ to measure school climate because there is yet a research, especially in Malaysia, that examines the relationship between teacher efficacy and school climate using the SLEQ. The SLEQ was adapted for a study to examine the relationship between total quality management practice and school climate, and it reported high reliability values for the instrument (Siti Noor, 2011). The validity and reliability of the SLEQ has also been reported in many other empirical studies abroad (Burden & Fraser, 1994; Fisher & Fraser, 1990; Johnson et al., 2007; Johnson & Stevens, 2001; Rentoul & Fraser, 1983). This study hopes to tap into this potential of the SLEQ to investigate the relationship between school climate and teacher efficacy.

Apart from that, it was preferred over other questionnaires for these reasons: 1) It has been developed specially for use in school environments. The widely used climate instruments including OCDQ and OHI were generic questionnaire which were adapted for use in the school context. 2) It is more economical in terms of testing and scoring time. It contains 21 items as compared to OHI with 37 items (Sukarmin, 2010) and OCDQ –RS which has 34 items (Lord, 2011). 3) It reported high validity and reliability values in previous studies as demonstrated earlier. 4) It included a wider range of interactions in school including relationships among teachers, relationship between teachers and students, organization structure and system maintenance (Fisher & Fraser, 1990). 5) The items only describe the school-level environment, and 6) It is able to differentiate school climate of different schools.

2.4.3 Dimensionality of School Climate

The school climate framework of the current study was made up of three independent factors, namely collaboration, student relations and school resource. These three factors satisfied the requirements for Moos' psychosocial environment which stated that a measure of work environment must include three general categories: relationship, personal growth, and system maintenance and system change (Fisher & Fraser, 1990; Johnson et al., 2007; Rentoul & Fraser, 1983). In relation to this, the distribution of factors in the three categories is as follow: student relation is in the relationship category, collaboration is in the personal growth category, and school resource system is in the maintenance and system change category. Besides, the framework was supported by statistical results of data gathered in the pilot study, involving factor analysis and reliability analysis. Detailed report and discussion of statistical analysis results can be found in Chapter Three.

2.4.3.1 Collaboration

Collaboration among teachers is crucial in schools because individual teachers join a school with varied knowledge and skills. Besides, the degree of their knowledge and skills also varied significantly as the school is made up of teachers with various age groups, teaching experience, expertise and gender. This difference implied teachers need to work with each other so that they can be more productive and efficient in doing their tasks.

A comparison of various school climate measures found that collaboration is a construct that exists in Organizational Climate Description Questionnaire (OCDQ), Organizational Health Inventory (OHI), and School Level Environment Questionnaire (SLEQ) measures. In the OCDQ, collaboration construct was identified across two types of teacher-teacher interaction: intimacy teacher behavior and engaged teacher behavior. Examples of construct include "Teachers socialize with each other on regular basis" and "Teachers respect the personal competence of their colleagues" (Lord, 2011, p 143). Examples of item in the OHI are "Teachers do favor for each other" and "teachers exhibit friendliness to each other" (Lord, 2011, p 144) while examples of item in SLEQ include "Classroom instruction is rarely coordinated across teachers" and "Good teamwork is not emphasized enough at my school" (Johnson et al., 2007, p 837).

Blasé and Blasé (2004) discussed the implications of teacher collaboration in schools. Their proposition was collaboration allowed teachers to learn from each other more successfully in the areas that concerned them such as lesson planning, student motivation, application of technology for leaning, student engagement and assessment of student learning. This view is consistent with the suggestions by Glickman et al. (2007). These researchers were of the opinion that collaboration among teachers improves teacher performance. Glickman et al. (2007) commented that teachers normally turn to their peers for help when they encounter problem in their teaching assignments. Fellow colleagues were able to give teachers practical, hands-on ideas on how to solve their problems because they too were facing the same issue in the context. Jones (2009) mentioned that establishing good relationship

among teachers develop positivism in schools. Similarly Opdenakker and Damme (2007) found that cooperation among teachers affects school climate.

Some educational researchers argued that successful principals ought to create a school environment that promotes shared vision (Brown, 2009; Crum et al. 2009; Leithwood et al., 2008; Mulford & Silins, 2003; Sanzo et al., 2011). Successful principals advocated shared instructional leadership in which everyone in the school is involved in sharing and responsible for student learning. Leithwood et al. (2008) found that principal leadership becomes more influential on schools and students when it involved teachers, staff, parents, parents, students and vice-principals. Likewise Mulford and Silins (2003) had similar findings in their study that involved community, teachers and students. DuFour and Marzano (2009) mentioned that the collaborative efforts among principal and faculty members in classroom observation, student learning and common assessment bring about sustained improvement in student learning.

Other research involving effective schools also found that collaboration between principals and teachers as well as among teachers establishes a positive climate that promotes learning (Dinham, 2007; Edmonds, 1979; Gu et al., 2008; Nettles & Herrington, 2007; Purkey & Smith, 1983). Collaboration among teachers increased the opportunity for student learning. Students taught by different teachers will receive almost similar quality of content input if there is collaboration culture in the school. Firestone and Pennell (1993) attributed it to collaboration increases learning opportunities for teachers, especially but not only those who are new to the teaching

profession. Lee et al. (1991), on the other hand, related collaboration to school environment such as "I feel accepted and respected as a colleague by most staff members. There is a great deal of cooperative effort among staff members" (p. 206).

Besides feeling being supported which boosted up their morale, collaboration provides opportunity to learn aspects of instructions such as content, delivery method and the most beautiful part is to receive feedback for teachers to monitor and adjust their behavior (Firestone & Pennell, 1993). Similarly, Dinham (2007) proposed that collaboration enables teachers to share teaching ideas and resources. Tschannen-Moran and Hoy (2001) mentioned that teachers need to master three areas: student engagement, instructional strategies and classroom management for them to bring forth improved achievement. Blasé and Blasé (2000) mentioned collaboration among teachers is associated with increase in teacher motivation, self esteem and efficacy.

2.4.3.2 Student Relations

Student relation encompasses the social skills displayed by students when they interacted with others in schools. It includes students exhibiting behaviors such as being respectful, willing to take responsibilities, and adhere to school rules and regulations while interacting with their principal, teachers and fellow peers in schools. Student relations factor is also mentioned in other school climate construct. But various names were used by different researchers. For example, William (2009) measured school climate in terms of student behavior. Examples of construct include "In your school, classroom instruction is obstructed by student's inappropriate

behavior" and "In your school, students speak disrespectfully or defiantly to teachers" (p 93).

Goleman (1995) related students' social skills with school climate by advocating the idea that nurturing students' social skills is crucial in developing an effective school. The manner how teachers and students in schools treat each other influences the learning climate. Day et al. (2008) mentioned fostering good staff-students relationship as one of the key roles of school principal and related it to sustained improvement. Goleman's proposition and Gardner's multiple intelligence theory suggested that school climate is dependent on students' interpersonal intelligence. Accordingly, students in schools have varied ability in interpersonal intelligence (Gardner, 1983). In relation to this, schools are expected to take up additional responsibility of nurturing appropriate social behaviors and ensure social competence of their students (Goleman, 1995; Williams, 2009). Students must be taught the skills to nurture relationships and keep friends in school so that they are accepted as a member in the community. This need is critical because students were perceived to be disrespectful and defiant by their teachers (Williams, 2009). In many countries, including Malaysia, there is poor teacher-student relations (OECD, 2009).

Poor social skills of students as perceived by teachers could be due to the difference in expected behaviors between students and teachers. This is especially so in schools where the school community comprises people from a diverse culture, language and socio-economic backgrounds. Students might not be aware of what are considered as appropriate behaviors when interacting with others. The gap in the actual and

expected behaviors if not checked in time can lead to disruptive behaviors and disciplinary problems. Skiba and Peterson (2000) noted that principals and teachers used a lot of their time in schools to take disciplinary initiatives in order to control school order. All these troubles could be minimized if schools can be more pro-actives in helping their students to nurture social skills of interactions.

Gresham (1995) argued that the success of schools in helping students to develop social competence depends on its ability to involve everyone in this area. Schools that have a collegiality culture among teachers do have better ability to be successful because teachers would endorse similar behaviors needed by students. Students are taught social skills through formal and informal interactions with their teachers. Teachers endorsed appropriate behaviors and reinforced them by showing approval and praising students every time the behaviors are shown. For example, students being corrected for not greeting teachers by every teacher in the school send off a message to them on what is expected and appropriate behaviors in schools. Lewis and Sugai (1999) opined that schools should form a team that includes all members in the community to establish a school climate that is acceptable to all.

Orderly social environment was found to have a relationship with teacher efficacy (Eckert, 2011; Lee at al., 1991). Schools with orderly student behaviors were found to have more efficacious teachers. This finding suggested that students' academic achievement is a function of orderly students' behaviors. On the other hand, Eckert (2011) reported that teachers in rural schools were found to be more efficacious than their counterparts in urban environment due to better student behavior. This claim

was echoed by Durborow (2009) and Nettles and Herrington (2007) who mentioned that it is important to manage student discipline for learning to take place. When students are obedient and follow the directions of teachers, teachers' time in the classroom is fully utilized for the business of teaching and learning. Not much time is wasted on disciplining misbehaved students. As such teachers could gather information about their performance in relation to various aspects of teaching and learning including classroom management, instructional strategies and student engagement. Such information is sources of efficacy which work to moderate teacher efficacy (Bandura, 1986).

2.4.3.3 School Resources

Resources in school include tangible materials, manpower and information that aid in the normal school operation. Resource is a dimension of many school climate constructs such as Organizational Health Inventory (Hoy et al., 1991; Sukarmin, 2010; Wan Roslina Wan Ismail, 2011), academic press (Alig-Mielcarek, 2003), and School Level Environment Questionnaire (Johnson et al., 2007; Siti Noor Ismail, 2011). The construct was given various names such as resource support, resource influence, resource adequacy and school resource. Examples of school resources construct in the academic press measure include "Teachers are provided with adequate materials for their classrooms" and "Teachers have access to needed instructional materials" (Alig-Mielcarek, 2003, p 97).

School resource is related to climate because teachers need basic facilities such as teaching aids and whiteboard to do a good job. It is undeniable that teachers could go about doing their lessons without these resources but the availability of resources make their teaching more effective. As such, the availability of resource causes school climate to be perceived as being more positive. Some educational researchers regarded providing resources as an instructional leadership role of principals (Andrews & Soder, 1987; Blasé, 1987; Quinn, 2002; Ylimaki, 2007). Principals were perceived to be effective because they provided timely resources to support routine work of teachers (Blasé, 1987; Dinham, 2007; Nettles & Herrington, 2007). Leithwood et al. (2008) mentioned staffing the teaching program and providing teaching support as specific practices of principals' role. This means that principals need to do strategic planning for teacher professional development so that the school will have constant supply of capable teachers.

Nevertheless, Lee et al. (1991) commented that teachers' access to information outside their classrooms is determined by school environment. School context in which there is strong collegiality among teachers is a platform more conducive for them to access information from other teachers. Resources in the form of teachers' knowledge and skills were made possibility through the climate of collaboration. Such type of teacher interaction does not exist naturally. It is influenced by various school factors, one of them being principal's leadership.

Correct decision about resources requires proper planning on the part of principals (Robinson & Timperley, 2007). For school improvement programs, proper planning involved strategic goal settings that were embedded in teaching and learning. With that kind of goal setting in place, principals could make good decision about material and human resources to meet the demands of school missions, whether it is for improved student achievement or improvement in other areas. In acquisition of resources, principals must align resources to school goals but not treating the resources acquisition as an end in itself. The claim about the association of resources with school mission supported the view of Purkey and Smith (1983). The researchers opined that the availability of school mission enables the allocation of resource in the direction of achieving school goals.

Resources and the correct allocation of them were being associated with improved teaching and learning (Edmonds, 1979; Murphy et al., 2007; Robinson & Timperley, 2007; Tschannen-Moran & McMaster, 2009). In those schools, principals would redirect the use of resources from other areas when necessary to accomplish its fundamental objectives which involve student learning. Oftentimes the schools were found to have policies that enable the diversion of resources when the needs arise (Edmonds, 1979). Such measures ensured the optimum utilization of resources in school while advocating the importance of resource in school effectiveness. Quinn (2002) found that the behavior of principal providing the needful resources to correlate with teacher instructional practice and student engagement in learning. More often than not, principals who played their roles as resource provider and

instructional resource were viewed as being more effective (Andrews & Soder, 1987; Glanz et al., 2007; Manthey, 2006; Quinn, 2002).

2.4.4 School Climate as a Mediator

With its roots in industrial and social psychology, climate was often studied as an intervening variable in the study of organizational improvement programs (e.g. Edmonds, 1979; Hallinger et al., 1996; Hoy & Miskel, 2005; Leithwood et al., 2008). Edmonds (1979) inferred that school climate was an important mediating factor for schools to be effective when he mentioned that strong administrative leadership, high performance expectations, a safe learning environment, an emphasis on basic skills acquisition and a system for monitoring students are mandatory of student academic achievement. Other researchers commented that climate influenced student achievement positively (Hallinger et al., 1996; Leithwood et al., 2008) while Hoy and Miskel (2005) inferred that school climate influences teacher behavior. Empirical studies found that instructional leadership was a critical factor of student achievement but the relationship between instructional leadership and student achievement was indirect, mediated by school climate (Alig-Mielcarek, 2003; Hallinger et al., 1996; Leithwood et al., 2008; Maeyer et al., 2007; Mulford & Silins, 2003).

Hallinger et al. (1996) concluded that principals influence student achievement through an indirect path. It happened through the development of a learning climate in the school characterized by proper school mission, high teacher expectation, and learning opportunity for students. Similarly, Alig-Mielcarek (2003) suggested a

model of indirect path on how principals improve student achievement. The researcher proposed the application of instructional leadership to develop a school climate that prioritizes academic press. In the study, academic press was measured by the degree of resource support given to teachers, the regard for academic excellence and the amount of influence of principals had over his superiors. The researcher concluded that academic press was a mediator for the influence of instructional leadership on student achievement. Apart from being examined as the mediator for relationship between instructional leadership and student achievement, school climate has also been examined as the mediator for the study involving instructional leadership and teacher commitment (Firestone & Pannell, 1993; Wan Roslina Wan Ismail, 2011) and between instructional leadership and teacher efficacy (Sukarmin, 2010).

In sum, these previous studies have supported the investigation of school climate as a mediating variable. These studies suggested that instructional leadership influences student achievement through various organizational factors, including school climate and teacher factor. Therefore, these studies proposed the possibility of examining the relationship between instructional leadership and teacher efficacy, with school climate as a mediating variable.

2.5 Instructional Leadership Behavior and School Climate

Principal leadership has long been identified as a factor which influences school climate. School climate is a fluid concept influenced by organizational factors including but not confining to leadership. The values regarded important by

principals determine school climate. By way of example, principals who regarded academic achievement as important tend to allocate resources for the improvement of teaching and learning and by doing so increased opportunity for students to learn (Hallinger et al., 1996; Nettles & Herrington, 2007; Purkey & Smith, 1983). This explained why student achievement in high academic climate schools was significantly better than those in the regular academic climate schools (Chong et al., 2010). It was the principals who created the environment causing students and teachers as well as parents to perceive academic success as important and came to share the value. Purkey and Smith (1983) put it that leaders have the administrative and bureaucratic means to develop school climate and culture. When people in the organization shared and valued the same thing, it became the norms which give it climate entity (Brookover et al., 1978; Gu et al., 2008). As such, instructional leadership behavior was postulated to influence school climate.

Leadership influence on student achievement was not a direct one but it was through leadership influence on school climate (Alig-Mielcarek, 2003; Hallinger et al., 1996). The behavior of principal allocating needed resources established a positive climate in school (Edmunds, 1979; Frederick, 2007; Johnson et al., 2007). Such climate increased opportunity for learning which will ultimately lead to improved achievement. Apart from that, principal and teacher expectations for student learning formed positive instructional climate (Hallinger & Murphy, 1985). The principal could influence teachers to have high expectation on student learning by talking to them in-person or during staff meeting (Blasé, 1987; Blasé & Blasé, 2000; Wan Roslina Wan Ismail, 2011). This higher expectation for student achievement would

subsequently lead to students having higher motivation to learn and excel in their study.

Alig-Mielcarek (2003) explored the relationship between instructional leadership and school climate in Ohio State which involved teachers in 146 elementary schools. The instructional leadership behavior comprised: 1) defining and communicating the school goals, 2) monitoring and providing feedback on teaching and learning process, and 3) promoting school-wide professional development. On the other hand, school climate was measured by academic emphasis, resource support and principal influence. Examples of item in the school climate scale include "Teachers are provided with adequate materials for their classrooms" and "Teachers have access to needed instructional materials" (p 97). The study found all three dimensions of instructional leadership behavior of the study to have a positive relationship with the overall school climate. The behavior of principal promoting professional development showed a strong relationship with school climate (r = .56, p < .01). Construct of promoting professional development included principal behaviors such as "Schedules time on in-service for collaboration among teachers" and "Provides for in-house professional development opportunities around instructional best practices" (p 93). Next, developing and communicating school goals had a strong relationship with school climate (r = .54, p< .01). Developing and communicating shared goals revolved around the behavior of principal involving and informing teachers on school goals. Examples of item of the scale included "Communicates the school's academic goals to faculty" and "Uses data on student achievement to guide faculty discussions on the instructional program" (p 93). Finally, monitoring and

providing feedback on teaching and learning process which included behaviors such as "Provides private feedback on teacher effort" and "Observes teachers for professional development instead of evaluation" (p 93), was found to show a moderate relationship with school climate (r = .45, p< .01).

Lord (2001) investigated the relationship between instructional leadership behavior and school climate in secondary schools. Instructional leadership behavior was measured using the 50-item Principal Instructional Management Rating Scale (PIMRS) while school climate was measured in terms of school health, using Organizational Health Inventory for Secondary Schools (OHI-S), and school personality, using Organizational Climate Description Questionnaire for Secondary Schools (OCDQ-RS). The study found that all the 10 factors of instructional leadership behavior which include communicating school goals and promoting professional development correlated strongly with school openness and school health ($.50 < r <.82$). The measurement of school health involved seven factors including resource support, example of item: "Teachers are provided with adequate materials for their classrooms" (p 144), consideration with item such as "Teachers do favor for other teachers" (p 144) and academic emphasis "Students try hard to improve their previous work" (p 145). Similarly, the measurement of school openness included school characteristics such as "Teachers help and support each other" and "The principal's instructional leadership team compliments teachers".

Frederick (2007) examined the relationship between leadership behavior and school climate involving 937 teachers teaching in elementary, middle and high schools. Leadership behavior was measured by the style whether it was autocratic, democratic or laissez-faire. Leadership behavior measurement involved 30 items that described the behaviors of principal when discharging his/ her tasks as school leader. Examples of item: "My principal allows his/her employees to determine what needs to be done and how to do it" (p 90) and "My principal likes to use his/her leadership power to help subordinates grow" (p 92). School climate was measured using School Level Environment Questionnaire (SLEQ) with 56 items spread evenly across eight factors: student support, affiliation, professional interest, mission consensus, empowerment, innovation, resource adequacy, and work pressure. Examples of item are "Most students are pleasant and friendly to teachers" (p 94) and "Teachers discuss teaching methods and strategies with each other" (p 95). The study concluded that there was a relationship between leadership style and school climate factors. Two factors of the school climate measure: affiliation and mission consensus merged as a single factor named collaboration in the revised School Level Environment Questionnaire (Johnson et al., 2007). Therefore, it is inferred that the behavior of leadership would have a relationship with the five school climate factors in the revised School Level Environment Questionnaire.

Cheng (1985) commented that there is a relationship between leadership style (initiating structure or relationships focused) and organizational climate in the study that involved 627 teachers in 64 aided secondary schools in Hong Kong. The findings suggested that principals should engage in behaviors such as setting

dynamic behaviors for teachers to follow, be more considerate about teachers, avoiding impersonal behavior, boosting up teacher morale and promoting close working relationship among teachers as these behaviors were found to influence teacher perception on the openness of school climate. Another important finding of the study was that the influence of contextual variables on school climate was negligible. School contextual variables such as type of school, school age, number of teachers, teacher experience did not have significant influence on school climate. The researcher proposed that further study on school organizational behavior should focus on internal process.

Meanwhile, Kelley et al. (2005) also conducted a survey to investigate the relationship between leadership style (effectiveness versus flexibility) and school climate. Leadership effectiveness was defined by "the degree to which the leader uses the most appropriate responses for each situation while flexibility, "the degree to which a leader will select varying styles over a range of situations" (p 19). The study that involved 31 elementary schools found that principal effectiveness correlated positively with school climate in the areas of communication, innovativeness, advocacy, decision making, evaluation, and attitude toward staff development. Conversely, the behavior of principals using varied responses over a range of situations correlated with low school climate score. The findings concluded that teachers seemed to prefer principals who were consistent in their actions. However, principals need to use varied style due to variation in ability and situation (House, 1971; Hoy & Miskel, 2005; Yukl, 1998). The researchers suggested

additional study on this matter, which may include the use of other leadership measurements.

Conversely, Kythreotis et al. (2010) discovered that principal leadership did not affect climate at school level but its impact at classroom level was significant. Principal leadership behaviors which included setting goals, planning and coordination, being sensitive to the needs of others at school, and recognized how teachers advance their interest did not show a relationship with climate at school level characterized by teamwork and cooperation, inclusion in decision making, encourage change and innovation, and shared vision and goals. Nevertheless, such behaviors affected classroom climate in the areas of students' purpose for engaging in academic behavior and mastery in learning. The researchers commented that such relationship prevailed because of the frequent rotation of teachers and principals in the study context. It was a common practice for teachers and principals to change schools every two and the most four years. As such, it was difficult for principal to establish a work climate for teachers at school level. This finding nailed home a point on the importance of sufficient acquaintance duration between principal and teachers in the study that examine the relationship between leadership behavior and school climate.

Similarly, Grizzard (2007) also had a finding which contradicts findings of the researchers mentioned earlier. The researcher found that there is no relationship between instructional leadership and the overall school climate as well as the six dimensions of school climate, namely supportive principal behavior, directive

principal behavior, restrictive principal behavior, collegial teacher behavior, committed/intimacy teacher behavior and disengaged teacher behavior. The study involved teachers in both middle and elementary schools. No significant difference in school climate was identified between schools where principals attended instructional leadership training and implemented clinical supervision than those did not. The researcher justified the findings to the design of the study which was experimental in nature. Detailed examination of the statistical data found that there was a change in school climate scale in the expected direction but the change was not statistically significant. Given time, instructional leadership behavior and clinical supervision might show a positive relationship with school climate.

2.6 Teacher Efficacy

Teacher efficacy is the independent variable of the current study. The construct has been related to various aspects of teachers' belief in their ability which lead student achievement. Review of literature found teacher efficacy is related to teachers' belief in their ability to influence student learning (Leithwood et al., 2008; Manthey, 2006), enhanced student achievement, attitude and affective growth in studies (Berman et al., 1977; Murford & Silins, 2003), persistence in teaching (Tschannen-Moran et al., 1998), increase in the amount of teaching and learning (Ryan, 2007), better teacher instructional behavior (Gibson & Dembo, 1984), willingness to approach difficult tasks, persistence on tasks, reduced fear and anxiety (Hoy & Miskel, 2005), and enhanced students' motivation, achievement and efficacy belief (Chong et al, 2010).

2.6.1 Teacher Efficacy Concept

Like leadership and school climate, there are a few definitions of teacher efficacy in the literature. Among others, teacher efficacy was defined as the extent to which a teacher believes he or she can do to affect student performance after considering own capability and students' home environment (Berman et al., 1977). In the study, teacher efficacy was measured using these two items : " When it comes down to it, a teacher really can't do much because most of a student's motivation and performance depends on his or her home environment" and "If I really try hard, I can get through to even the most difficult or unmotivated students" (p 137). Teachers who express agreement with the former statement indicate that environmental factors overwhelm teachers' effort in schools. On the other hand, those who show agreement with the latter indicate that they were confident in their abilities to reach even the most difficult students.

Next, teacher efficacy was regarded as consisting two independent dimensions named personal teaching efficacy and general teaching efficacy (Gibson & Dembo, 1984; Hoy & Woolfolk, 1993; Nir & Kranot, 2006). In relation to this, personal teaching efficacy indicates a teacher's personal sense of efficacy while general teaching efficacy reflects a general belief about the power of teaching to influence the most difficult students. Bandura (1986) defined teacher efficacy as a construct that involves efficacy expectancy and outcome expectancy. Teacher efficacy is determined by a teacher's belief that he/she has the ability to affect student learning and whether the effort would produce desired outcomes. This belief affected teachers

in the areas of persistence, commitment and enthusiasm in performing difficult tasks (Bandura, 1997).

Tschannen-Moran et al. (1998) viewed teacher efficacy as "teacher's belief in his or her capability to organize and execute courses of action required to successfully accomplish a specific teaching task in a particular context" (p 233). With this definition, teacher efficacy is contextual based. Context plays an important role in teacher's interpretation of their capability in the given task. This concept of teacher efficacy has been used to develop the Teacher Self Efficacy Scale (TSES) that consists of three factors: student engagement, instructional strategies and classroom management (Tschannen-Moran & Hoy, 2001). The existence of three different factors in teacher efficacy construct was validated by other researchers who used the TSES in their studies (Brown, 2009; Chong et al., 2010; Ryan, 2007; Zaidatol Akmaliah, 2008).

2.6.2 Teacher Efficacy Theories

There are two competing theories attempting to describe teacher efficacy. The first conceptual strand has its root in Social Learning Theory (Rotter, 1966). Teacher efficacy, as conceived in the theory, is the extent to which teachers attribute the control of reinforcement of their actions as within their control. If a teacher regards the reinforcement as contingent upon his own actions, he is said to believe in internal control. Conversely, if the reinforcement is perceived as not contingent upon his own behaviors, then the teacher believes in external control. Teachers who believe that the causal relationship between behavior and reinforcement as within their control

tend to develop higher expectancy about this ability to perform a given task. In relation to this, student performance and motivation to study could be seen the reinforcements for teaching behavior. Teachers who perceived student achievement as the results of their teaching are more efficacious comparatively.

The second conceptual strand of teacher efficacy lies in Social Cognitive Theory (Bandura, 1986). The theory advocates that an individual's self efficacy is developed from exposure to the four sources of efficacy which are mastery experience, vicarious experience, verbal persuasion and psychological state and there are two types of expectancy: efficacy expectancy and outcome expectancy. In the teaching context, efficacy expectancy is a teacher's judgment about his/her capability to perform a task and attain the expected level of performance. On the other hand, outcome expectancy refers to the teacher's estimate of the likely consequences of performing a task. Efficacy expectancy was postulated to precede outcome expectancy. Taken together, these two expectancies can influence teachers' behaviors in many areas (Bandura, 1986; Dembo & Gibson, 1985). For example, a teacher's belief that she/he has the capability to use a new teaching approach with a group of secondary school students is an efficacy judgment. If the teacher has low efficacy expectancy in this area, he/she may expect poor student performance from the teaching.

Later on, researchers began to raise questions on the significance of outcome expectancy (Bandura, 1997; Tschannen-Moran et al., 1998). Bandura (1997) commented that outcome expectancy adds little to the predictive power of efficacy

measures as it originates from efficacy expectancy. In an attempt to overcome these shortcomings, Tschannen-Moran et al. (1998) proposed an integrated model that weaved both conceptual stands of Social Learning Theory and Social Cognitive Theory together. This model has since suggested new areas of research (Tschannen-Moran & Hoy, 2001; Tschannen-Moran & McMaster, 2009).

2.6.3 Sources of Efficacy Information

Efficacy is acquired when teachers interact with others around them. It is a self judgment of their capability to perform a task in a given situation that this judgment plays a pivotal role in human behaviors. Therefore, it is important to understand how teacher self efficacy is developed (Bandura, 1982; Dembo & Gibson, 1985; Rotter, 1966; Tschannen-Moran et al., 1998). Bandura (1986) mentioned four sources of self-efficacy information as 1) mastery experience, 2) vicarious experience, 3) verbal persuasion, and 4) physiological state. Hoy and Miskel (2005) put it differently by suggesting that people develop their self-efficacy expectation from performance feedback, previous experience and influence of others.

Tschennan-Moran et al. (1998) refined the efficacy proposed by Bandura (1986) and suggested an efficacy development model that considers the impact of teaching context on teacher efficacy besides the four sources of efficacy information (Figure 2.3). For this reason, the development of teacher efficacy is a function of analysis of the requirements of a particular teaching task in addition to the four sources suggested by Bandura (1986). This is because efficacy belief is contextual-based. Teachers do not feel equally efficacious in all circumstances. Therefore when facing

a task, teachers would assess the task cognitively in term of its difficulty level in relation to their capability to perform the task. The interaction of these two components produces an efficacy judgment for performing the task at hand.

These sources of efficacy information could explain the mechanism how teachers learn teaching skills and develop efficacy for classroom instruction. Apart from that, it also suggests the possible influence of principal on teacher self-efficacy. Each of the four sources of self-efficacy will be explained in detail in the following section.
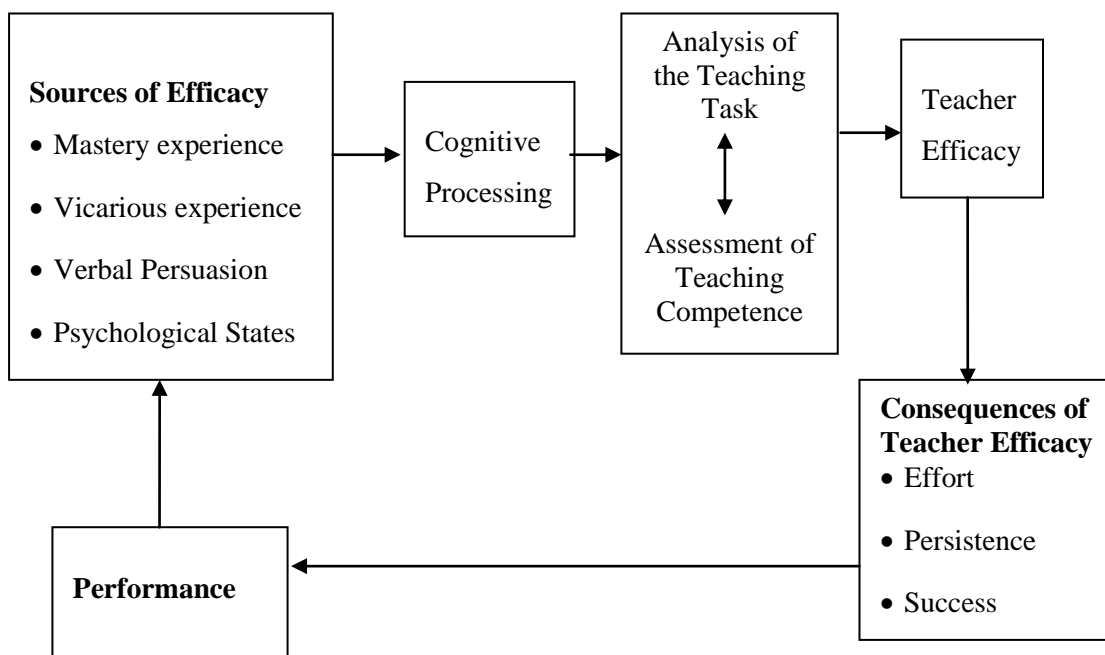
Figure 2.3: A Model of Teachers' Perceived Efficacy (Tschannen-Moran et al., 1998)

Mastery experience refers to successes experienced by individuals and is been regarded as the most powerful source of efficacy information (Bandura, 1997; Tschennan-Moran et al., 1998; Tschennan-Moran & McMaster, 2009). Individuals

who succeed in accomplishing a task will develop belief that they have the ability to be successful in subsequent tasks in the future. Likewise, failure in assignments makes individuals doubt their ability and produce low self efficacy. This has important implication on the assignment of teaching tasks in schools. Teachers who were assigned to teach subjects which they did not have competency in would develop low efficacy if they failed to deliver, especially when it happened early in the course of events and did not reflect lack of efforts. In view of this, the assignment of new teaching tasks should be assisted to help teacher succeed in delivery (Tschennan-Moran & McMaster, 2009). School principals played their role in this area by providing the needed resources and time for teachers to master teaching skills (Manthey, 2006). This is especially important in the Malaysian classrooms where teachers have to teach more than one subject and level of study.

A second source of efficacy information is by observing others doing similar task. This source of efficacy is termed as vicarious experience (Bandura, 1986). The success or failure of other similar competent teachers affects the efficacy judgment of a teacher. When other similar competent teachers perform a task successfully, it raises the self-efficacy belief of the observer. From the observation, observers acquire idea on how and what it takes to perform a task successfully. By the same token, if other similar competent teachers fail to perform a job, it lowers the self efficacy of the observer and subsequently undermines his/her effort. Specifically, modeling will have greater impact on the observers when both model and observer have performance and attribution similarity. Therefore, principals can influence their teachers' instructional skills by being a model to them (Blasé & Blasé, 2000). By

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observing their principal modeling certain behavior, the teachers convince themselves that if their principal can do it, they too can do the same. Vicarious experiences are especially useful for teachers with the following attributes: i) those with limited prior experience, and ii) those who are uncertain about their capabilities. Nevertheless, even the experienced and self assured ones will raise their perceived self-efficacy if the model can teach them the better way of doing things. Therefore, vicarious experiences are important to experienced and pre-service teachers in the development of their self-efficacy belief.

Verbal persuasion, the third source of efficacy, involves verbal input from people around the teachers including principal, colleagues, students and parent that works to influence teachers' efficacy belief (Dembo & Gibson, 1985; Tschannen-Moran et al., 1998). In most instances, teachers do not have sufficient information to make a good judgment about their own ability and thus depend on others to inform them of their performance. When knowledgeable others persuade individuals with information that highlights their personal capabilities, it enhances efficacy beliefs. However, due to the fact that the impact of persuasory opinions on efficacy belief is only as strong as the confidence in the persuader, the persuaders must have the relevant skills, knowledge and credibility in order to influence someone to change his/her efficacy beliefs. In this context, feedback from principals works to nurture teacher efficacy (Alig-Mielcarek, 2003; Lahui-Ako, 2001). More often than not, principals are perceived by their teachers as being more skilful and having more knowledge in classroom instruction. Thus, the feedback given by them could influence and convince the teachers about their ability.

The fourth source of efficacy is the physiological and emotional states of teachers. Teachers' emotional states such as feeling anxious, fearful or looking forward can influence their efficacy belief. Teachers will develop higher efficacy beliefs about their ability when they are able to complete a task without much interruption by negative emotions. For this reason, teachers who work in a supportive environment like having understanding superior, helpful colleagues and motivated students would tend to develop positive self efficacy. The supportive environment removes their negative anxiety. Likewise, disorderly environment originated from disruptive student behaviors can affect teacher efficacy. Disruptive student behaviors could cause teachers to feel anxious. The feeling then leads them to have lower efficacy belief about their ability to teach the students. This could be the reason why teachers in an orderly school environment are more efficacious (Chong et al., 2010; Lee et. al., 1993).

Tschennan-Moran et al. (1998) proposed the inclusion of analysis of teaching task and assessment of personal teaching competence as a self efficacy source (Figure 2.3). The reason is teachers do not feel equally efficacious in all teaching contexts and subject matters (Bandura, 1997). For example, a teacher may feel efficacious teaching a group of secondary students in rural school but may not have the same level of efficacy with another group of urban students. Analyzing teaching task allows teachers to gauge task status in relation to student factors such as their motivation to learn, or classroom behavior and also contextual factors such as instructional resources, teacher collegiality, or principal leadership. On the other

hand, they assess their personal self efficacy by weighing their strength against their deficits. Empirical research have shown that teacher efficacy can vary within teachers depending upon principal leadership, student behavior, staff collegiality, and school climate (Hoy & Woolfolk, 1993; Lee et al., 1991; Sukarmin, 2010). The contextual analysis furnishes teachers with information that influences this efficacy belief.

In conclusion, human beings make decision cognitively whereby they will be motivated in performing a task if they believe that they have the ability to perform the task and the effort will produce desired outcomes. This belief, termed self-efficacy, is developed through five sources (Tschannen-Moran et al., 1998). The understanding of how teacher efficacy is developed through these various sources has practical implication for school principals. The knowledge enables them to manipulate organizational resources to flood their schools with efficacy sources so that teachers are provided with a platform to develop positive efficacy.

2.6.4 Measurements of Teacher Efficacy

Since the introduction of teacher efficacy concept in RAND studies, interest in the subject has increased many folds. In the studies, teacher efficacy is assumed to consist of two different factors (Berman et al., 1977). Later other studies supported the multi-dimensionality of teacher efficacy construct (Bandura, 1997; Gibson & Dembo, 1984; Hoy & Woolfolk, 1993; Tschannnen-Moran & Hoy, 2001). These researchers used the dimensionality as the bases for developing measurements for capturing teacher efficacy construct.

Review of literature found that the number of items in the measurements of teacher efficacy varied considerably. It ranges from only one item measure as below:

> To what extent do you feel successful in providing the kind of education you would like to provide for the students in this class (Raudenbush, Rowen, & Cheong, 1992, p 156)

Some other measures contained two items. For example, teacher efficacy measure used in the RAND studies is made up of two items as follows:

> When it comes right down to it, a teacher really can't do much [because] most of a student's motivation and performance depends on his or her home environment" and "If I really try hard, I can get through to even the most difficult or unmotivated students" (Berman et. al, 1977, p 136-137).

Many other measurements comprise many items distributed under a few dimensions (Bandura, 2006; Gibson & Dembo, 1984; Hoy & Woolfolk, 1993; Tschannnen-Moran & Hoy, 2001). For example, Bandura (2006) mentioned six dimensions of teacher efficacy scale, namely 1) efficacy to influence decision making, 2) instructional self-efficacy, 3) disciplinary self-efficacy, 4) efficacy to enlist parental involvement, 5) efficacy to enlist community involvement, and 6) efficacy to create school climate. The number of item in each dimension ranged from three to eight items. These researchers were of the opinion that teacher efficacy is powerful construct that could not be measured with a single item (Bandura, 1997; Woolfolk &

Hoy, 1990; Tschannen-Moran et al.; 1998). In other words, teacher efficacy should be a multi-dimensional construct.

Teacher efficacy measurements were developed based on Social Learning Theory, Social Cognitive Theory or a combination of both theories. The measurements which were built based on Social Learning Theory emphasize on internal-external locus of control (Berman et al., 1977; Guskey & Passaro, 1994; Rotter, 1966) while those with its root in Social Cognitive Theory differentiate self efficacy expectancy and outcome expectancy (Bandura, 1997; Gibson & Dembo, 1984; Woolfolk & Hoy, 1990). These researchers had some disagreement regarding the two factors in teacher efficacy measure. Bandura (1997) has raised the concern for the generalizability of teacher efficacy measure. Accordingly, the measures should neither be too specific nor too general. At the same time, teacher efficacy is supposed to be specific for teaching task and context (Bandura, 1997; Raudenbush et al., 1992; Tschannen-Moran et al., 1998).

To address the deficiencies, Tschannen-Moran et al. (1998) proposed a model of teacher efficacy that includes the assessment of teacher personal competence and analysis of task. The model assumes that the major influences on teacher efficacy are the attributional analysis of context and interpretation of the four sources of information about efficacy – mastery experience, vicarious experience, verbal persuasion and physiological state. In relation to this, the four sources of efficacy are interpreted mentally which in turn influence the creation of teacher's efficacy belief. In other words, what the teacher remembers or regards as important during the

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processing stage regarding the four efficacy sources influences the analysis of teaching task and assessment of teaching competence.

The teacher efficacy measure adapted for the current study was developed by a group of researchers involving researchers, teacher educators, doctoral students, and practicing students to address the deficiencies in other measures (Tschannen-Moran & Hoy, 2001). The questionnaire built on Bandura's (1997) scale with additional items measuring teachers' teaching tasks and capabilities. The measure attempts to include important activities within a teacher work life. The questionnaire, originally named Ohio State Teacher Efficacy Scale (OSTES), went through stages of refinement in three separate studies and had consistently found three moderately consistent factors: 1) efficacy in efficacy in student engagement, 2) efficacy in instructional strategies, and 3) efficacy in classroom management. In the third round of refinement, two forms of OSTES were concluded. The long form had 24 items spread out equally within the three factors while the short form had 12 items with four items in each factor.

The OSTES reported both high validity and reliability values (Tschannen-Moran & Hoy, 2001). Factor analysis of the data obtained in the third round of questionnaire refinement using principal-axis factoring and varimax rotation yielded three factors with eigen value greater than one. The factors explained 58% of total variance in teacher efficacy measure. The factor loadings of item ranged from .50 to .74. Apart from that, statistical analysis results of construct validity and discriminant validity test between the OSTES and other teacher efficacy measures supported its usefulness

of as teacher efficacy measure. The relevant teacher efficacy measures were RAND items (Berman et al., 1977) as well as Hoy and Woolfolk's 10-items teacher efficacy scale (1993). Besides, the reliability analysis results indicated high internal consistency of items. Reliabilities of the factors and overall questionnaire ranged between .87 to .94 for the long form while the short form ranged between .81 to .90 (Table 2.11). The OSTES questionnaire have been replicated in other studies at various geographical locations with high reliabilities of construct as shown in Table 2.11 (Chong et al., 2010; Ryan, 2007; Tschannen-Moran & Hoy, 2001; Zaidatol Akmaliah et al., 2008). Both the long and short forms of OSTES reported equally high construct reliabilities which indicate its compatible suitability for examining teacher efficacy construct (Brown, 2009; Chong et al., 2010; Horton, 2013; Ryan, 2007; Zaidatol Akmaliah et al., 2008). Table 2.11 showed the reliability values of both sets of questionnaire used by several researchers. As the reliability of both forms is compatible, the short form could be a better option because it is more economical on scoring time which will lead to higher response rate. Therefore, the short form of OSTES was used as the questionnaire to measure teacher efficacy in the current study.

Table 2.11: The Cronbach's Alpha Values of the OSTES Factors

Factors	24-item Scale	12-item Scale	12-item Scale	12-item Scale	12-item Scale
	Tschannen-Moran & Hoy (2001)		Chong et al. (2010)	Ryan (2007)	Zaidatol et al., (2008)
Instructional strategies	.91	.86	.87	.89	NA
Classroom management	.90	.86	.91	.91	NA
Student engagement	.87	.81	.83	.87	NA
Overall scale	.94	.90	.94	.94	.89

2.6.5 Dimensionality of Teacher Efficacy

Despite the variation in its construct, teacher efficacy is about teachers' belief in their ability to bring forth changes in student learning and motivation. In the current study, teacher efficacy consists of three different factors: student engagement, classroom management and instructional strategies (Tschannen-Moran & Hoy, 2001). Tschannen-Moran and Hoy (2001) proposed the three-factor teacher efficacy model after they performed factor analysis and reliability analysis on data collected from three different studies. Empirical studies consistently reported the existence of these three factors when the efficacy model was replicated by other researcher (e.g. Brown, 2009; Chong et al., 2010; Hearn, 2010; Horton, 2013; Sukarmin, 2010; Tschannen-Moran & Hoy, 2001; Zaidatol Akmaliah et al., 2008). Each factor of the teacher efficacy construct is detailed next.

2.6.5.1 Efficacy in Student Engagement

The capability of teachers to engage students in learning is fundamental for teaching and learning to take place. Efficacy in student engagement describes teachers' belief that they have the capability to motivate students to be interested in learning (Tschannen-Moran & Hoy, 2001). There are eight items in long form of the teacher efficacy scale while the short form has half of the number of items. Example of item in the long form: "How much can you do to get through to the most difficult student" (p 800). Example of item that exists in both the long form and form "How much can you do to motivate student who show low interest in school work" (p 800).

Review of previous studies found that the teacher efficacy construct proposed by Tschannen-Moran & Hoy (2001) was used widely to examine teacher efficacy as the independent variable and most of the studies reported total scores of teacher efficacy, not the individual factors. To cite an example, Brown (2009) conducted a study to examine the relationship between school climate and teacher efficacy in elementary schools. In the study, Teacher Self Efficacy Scale was used to measure teacher efficacy (Tschannen-Moran & Hoy, 2001). The researcher reported that school climate was a predictor of teacher efficacy in general.

Horton (2013) mentioned that two instructional leadership behaviors were significant predictors of student engagement. The study examined the influence of ten instructional leadership behaviors which include 1) framing school goals, 2) communicating school goals, 3) supervising and evaluating instruction, 4) coordinating the curriculum, 5) monitoring student progress, 6) protecting

instructional time, 7) maintaining high visibility, 8) providing incentives for teachers, 9) promoting professional development, and 10) providing incentives for learning on teacher efficacy. Teaching efficacy was measured using the short form of the teacher efficacy scale and thus included four items on efficacy in student engagement (Tschannen-Moran & Hoy, 2001). Out of the ten job functions of principals, only two of them: framing school goals and communicating school goals were significant predictors of student engagement. The two variables explained 12% of the variance in student engagement.

2.6.5.2 Efficacy in Classroom Management

The classroom management factor of the teacher efficacy scale proposed by Tschannen-Moran and Hoy (2001) revolved around teachers' belief in their ability to manage disruptive behavior in the classroom. The long form of the questionnaire includes eight items while the short form four items. Example of item that exists in both the long and short forms of the questionnaire is "How much can you do to control disruptive behavior in the classroom?" while example of item that exists only in the long form is "How well can you respond to defiant students?" (p 800).

Efficacy in classroom management was also mentioned in the Teacher Self Efficacy Scale developed by Bandura (2006). It was named efficacy in discipline. The construct concerns what teachers do in the classroom and school in the area of managing student behavior. The measure assesses teachers' belief in their ability to handle student discipline not only inside the classroom but in the school in general as well. Efficacy in discipline is measured using the following three items "1) Get

students to follow classroom instruction, 2) Control disruptive behavior in the classroom, and 3) Prevent problem behavior on the school grounds" (p 328).

Charf (2009) used Bandura's teacher self efficacy scale in a study to examine the relationship between demographic factors and teacher efficacy. The study, involving more than 700 teachers in high schools from two districts, found that there was a significant difference in efficacy in classroom management by gender. Male teachers demonstrated higher efficacy than their female counterparts when disciplining misbehaved students. The researcher suggested that it was so because male teachers were able to assert more authority on the high school students. Apart from that, male teachers were reported to take initiative to establish relationship with students. Good relationship between teachers and students decreased the occurrence of disciplinary problem and thus caused them to believe in better ability to manage the students. The findings of this study suggested that good teacher-student relationship influence teacher efficacy.

Horton (2013) found that one of the ten instructional leadership behaviors, namely framing school goals was significant predictor of efficacy in classroom management. Framing school goals include the behaviors of principal "develop goals that are easily understood and used by teachers in the school" and "Use needs assessment or other formal and informal methods to secure staff input on goal development" (p 120). The finding was derived using hierarchical multiple regression analysis method. The researcher found that framing school goals explained 9 % of variance in classroom management efficacy.

2.6.5.3 Efficacy in Instructional Strategies

Instructional strategies improve teaching and learning in the classroom. Good instructional strategies can overcome a student's disadvantage of coming from a poor home (Charf, 2009). This claim suggests that principals could work out ways to improve student learning through enhancing teachers' efficacy in instructional strategies as this efficacy would subsequently lead to teachers using more appropriate instructional strategies in the classroom.

Tschannen-Moran and Hoy (2001) measured efficacy in instructional strategies in the areas of gauging students' understanding, responding to the needs of high performing students, and employing alternative strategies for students. The long form of the teacher self efficacy scale consists of eight item measuring teachers' belief in their ability in the aforesaid areas. Examples of item: "To what extent can you use a variety of assessment strategies?" and "To what extent can you craft good questions for your students?". Both the items exist in the long and short form of the scale. Construct that measures efficacy in responding to the needs of high performing students exists in the long but not the short form of the scale. Examples of item include "How well can you respond to difficult questions from your students?" and "How well can you provide appropriate challenges for very capable students?" (p 800).

Efficacy in instructional strategies was named instructional self- efficacy in the teacher efficacy scale proposed by Bandura (2006). In the measure, instructional self- efficacy was gauged using eight items including "Get through the most difficult

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students" and "Get students to learn when there is a lack of support from home" (p 328). A comparison of construct between this scale and the scale proposed by Tschannen-Moran and Hoy (2001) revealed that instructional self-efficacy is a combination of efficacy in instructional strategies and efficacy in student engagement.

Horton (2013) found that framing school goals and communicating school goals were significant predictors of efficacy in instructional strategies. The construct of framing school goals has been discussed in the previous section. Communicating school goals concerned what the principals do to inform teachers and other members in the school on school goals. Examples of items in the construct include "Communicating the school's mission effectively to members of the school community" and "Discuss the school's academic goals with teachers at faculty meetings" (p 121). In relation to this, communicating the school's goals may include behavior such as making suggestions on instructional practice to teachers (Blasé & Blasé, 2000). Through such behavior, principal invites teachers to be onboard in his/her mission to achieve school goals. As such, just as communicating school goals, making suggestions is postulated to be a predictor of efficacy in instructional strategies.

2.6.6 Consequences of Teacher Efficacy

Gibson and Dembo (1984) commented that highly efficacious teachers demonstrated the following behavior: 1) more likely to persist in leading students who encounter failure to correct answer, 2) more likely to perform small group teaching as opposed

to whole class teaching, 3) spent less time in small group discussion but more time in monitoring and checking seatwork, and 4) spent less time in preparation or paperwork. In a similar note, Tschannen-Moran et al. (1998) mentioned that teacher efficacy predicts teachers' willingness to assist students experiencing learning difficulties. Instead of referring the students to special education, highly efficacious teachers were more likely to rate regular education as suitable for the students otherwise described as learning problem, discipline problem or both. They are more likely to assist students in their learning and conduct group work in the classrooms. For this, Hipp (1996) suggested that there should be more study on teacher efficacy due to the findings that a strong sense of efficacy motivates teacher to higher level of competence and success.

Ross (1992) reported that teacher efficacy correlates positively with student achievement in making comparison, decision making and knowledge. Student growth was more in the classes of teachers who had stronger efficacy beliefs. Earlier study by Berman et al. (1977) also had similar findings. They found that teacher's sense of efficacy is a powerful predictor for improved student achievement. Highly efficacious teachers were found to be able to help even the most unmotivated students to improve their performance. Beyond student achievement, they also mentioned that teacher efficacy was related positively to percentage of project goals achieved, teacher change, and continuation of project methods and materials.

In conclusion, despite being measured with different instruments, the studies that examined the effect of teacher efficacy had somehow similar findings - teacher efficacy had influence on teacher instructional behavior and student achievement.

2.7 Instructional Leadership Behavior and Teacher Efficacy

Empirical studies conducted in various part of the world generally found that there is a relationship between instructional leadership behavior and teacher efficacy (Hipp, 1996; Marks & Printy, 2003; Scurry, 2010; Sukarmin, 2010; Tabbodi & Prahallada, 2009; Tschannen-Moran & McMaster, 2009). These studies have identified several instructional leadership behaviors that influence teachers' belief in their ability to perform in the classroom. Some of the findings proposed a direct relationship between instructional leadership behavior and teacher efficacy while others suggested an indirect influence.

Tschannen-Moran and McMaster (2009) mentioned that teachers develop their efficacy belief through professional development training. Teachers who were exposed to professional development develop their efficacy belief in teaching reading and implementing new teaching strategy. Specific behaviors such as providing information, modeling, practice and coaching were found to influence the development of teacher efficacy. These behaviors expose teachers to verbal persuasion, vicarious experience and mastery experience which are the sources of efficacy. The study found that follow-up coaching is essential for the sustainability of the efficacy. Teachers who were not given follow-up coaching experienced a drop

in efficacy belief in teaching reading. These findings inferred that if principals engage in such behaviors, they would facilitate the development of teacher efficacy.

Scurry (2010) found leaders' behaviors such as valuing continuous improvement, empowering teachers, listening to teachers, building collaboration and collegiality, and providing non-threatening feedback caused an increase in teacher efficacy. In addition, Marks and Printy (2002) mentioned principals' behaviors which include supporting innovation and new ideas and supporting collaboration as well as emphasizing on collaborating teaching and learning processes contribute to higher quality pedagogy by teachers. Similarly, Blasé and Blasé (2000) cited instructional leadership behaviors including making suggestions, giving feedback, modeling, using inquiry and soliciting advice/opinions, giving praise, emphasizing the study of teaching and learning, supporting collaboration among teachers, developing coaching relationships among teachers, encouraging and supporting redesign of programmes, applying the principles of adult learning, growth, and development to staff development, and doing action to inform instructional decision making to influence teacher efficacy.

Another researcher, Ryan (2007) found that behavior of principal making suggestions for teachers to re-examine their ways of doing work is related to teacher efficacy while Raudenbush et al. (1992) mentioned opportunities for collaboration among teacher enhanced teacher efficacy. These findings were consistent with an earlier study conducted by Hipp (1996) who proposed that the behaviors of principals, including modeling, inspiring group purpose, providing contingent

rewards, recognizing teacher's hard work and achievements, empowering teachers in decision-making, managing student discipline, creating climate that promotes success, encouraging team work and collaboration, promoting innovation and continual improvement, trusting teachers and students, and encouraging caring and respectful relationships were found to have a relationship with teaching efficacy.

Nir and Kranot (2006) replicated the study of Hipp (1996) on elementary school teachers in Israel found principal behaviors to have relationship with teacher efficacy but the relationship is mediated by teacher job satisfaction. Similarly, Tabbodi and Prahallada (2009) had the same findings from the study they conducted in Iran and India. Moreover, these researchers also found that the influence of leadership behaviors on teacher efficacy differs according to context. Meanwhile Sukarmin (2010) concluded that instructional leadership influences teacher efficacy but the relationship is mediated by school climate. This finding proposed that school principals ought to work on improving school climate in the areas of collegial leadership, resource influence, and teacher affiliation in order to develop efficacy belief among the teachers. However, Fancera (2009) found no evidence of relationship between instructional leadership behavior and teacher efficacy. Such finding could be due to the fact that the relationship between instructional leadership and teacher efficacy is mediated by some variables which were not examined in the study.

In conclusion, most of the empirical studies reviewed concluded that certain leadership behaviors promote the development of teacher efficacy. The many behaviors can be grouped under the categories of making suggestions, giving feedback, giving praise, using inquiry and soliciting advice and opinion, doing action research, developing coaching relationship, promoting innovation, valuing continual improvement, building collaboration and collegiality, and encouraging team work. These behaviors were found to be related to teacher efficacy. Some of the studies found the relationship between leadership behavior and teacher efficacy was a direct one while others found it to be mediated by certain variables.

2.8 School Climate and Teacher Efficacy

With regard to school climate, quite a number of studies measured school climate in terms of school health (Hoy & Woolfolk, 1993; Sukarmin, 2010) and school personality (Grizzard, 2009; Lord, 2001). To cite an example, Hoy and Woolfolk (1993) explored the relationship between school climate and teacher efficacy involving 179 elementary school teachers in New Jersey. School climate was measured using the Organizational Health Inventory for elementary schools which include institutional integrity, principal influence, consideration, resource support, morale, and academic emphasis while teacher efficacy was measured using the short form of Teacher Efficacy Scale comprising general teaching efficacy (five items) and personal teaching efficacy (five items). The study found significant relationship between certain school health variables and teacher efficacy. The correlation value (r) of the variables ranged from .08 to .26 (p < .05). Teachers' feeling of being supported, principals who have influence with superiors and are willing to use it on

teachers, and high academic emphasis were the school health variables that showed significant relationship with teacher efficacy. In other words, schools with climate characterized by teachers felt supported and student were motivated to study would have more efficacious teachers. Nevertheless, resource support was found to have no relationship with teacher efficacy. In another study, however, Sukarmin (2010) concluded that school health influences the development of teacher efficacy and resource influence was one of the school health variables.

In other studies, other measures of school climate were used. Lee et al. (1991) investigated the link between social organization of school and teacher efficacy. Aspects of social organization of a school investigated included teacher control over classroom practice, sense of community, and students' disciplinary problems. The aspects of school social organization measured were quite similar to the dimensions in the Revised School Level Environment Questionnaire which measures school work environment (Johnson et al., 2007). Teacher efficacy was measured using four items. An example of the items is "To what extend do you feel successful in providing the kind of education you would like to provide for most of your students?" (Lee et al., 1991, p 194). The study concluded that schools, in which teachers had a strong sense of community and with less disorder student behavior, fostered the development of teacher efficacy. The reported correlation values for the two variables and teacher efficacy were ($r = .30$, $p < .05$) and ($r = .17$, $p < .05$) respectively. The researchers mentioned differences in these organizational factors alone may explain the differences in efficacy between teachers in different schools. The findings were consistent with the findings of other studies. For example, the

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importance of orderly and serious environment in the development of teacher efficacy was also mentioned by Hoy and Woolfolk (1993). An orderly environment depicts student discipline and respect they have for each other and teachers in school. Raudenbush et al. (1992) mentioned that work environment correlates with teacher efficacy. Teachers working in a highly collaborative environment were found to have elevated efficacy belief. Similarly, Firestone and Pennell (1993) mentioned the initiatives of principals to involve teachers in making decisions about the school, establishing collaboration effort, and providing the necessary resources as the critical factors that affect teachers' performance in school.

Brown (2009) examined school climate using the School Climate Index which consist of collegial leadership, teacher professionalism, academic press and community engagement. Teacher professionalism was defined as "teachers' relationships as well as teachers' commitment to their work and willingness to work together cooperatively" (p 33). Example of item includes "Teachers help and support each other" (p 83). On the other hand, teacher efficacy was measured using the short form of the Teacher Self-Efficacy Scale. The study involving 150 teachers from urban elementary schools, found school climate to have a significant relationship with teacher efficacy ($r = .47$, $p < .01$).

In another study in Singapore, Chong et al. (2010) also found that school climate is related to teacher efficacy. In the study, school climate was measured by emphasis on academic with example of item such as "Students in this school can achieve the goals that have been set for them" (p 185) while teacher efficacy was measured using

the short form of the Teacher Self-Efficacy Scale. The study concluded that school climate showed significant relationship with teacher efficacy in which schools with higher level of perceived academic climate have more efficacious teachers. The reported correlation values between school climate and classroom management, student engagement and instructional strategies were $r = .18$, $r = .20$ and $r = .23$ ($p < .001$) respectively.

In sum, previous studies have found that there is a significant relationship between school climate and teacher efficacy. Specifically, the predictors of teacher efficacy include institutional integrity, principal leadership, resource support, academic emphasis, collaboration among teachers, teacher autonomy, orderly student behavior, and community engagement.

2.9 Instructional Leadership Behavior, School Climate and Teacher Efficacy

Review of literature found that the findings of previous studies that examined the relationship between instructional leadership behavior, school climate and teacher efficacy were rather sparse. There were not many studies that examined the three variables in a single study.

Leithwood et al. (2008) commented that school leadership influences teachers' perception of their work environment and efficacy belief. They mentioned that school leadership behaviors included core practices of principal such as "building vision and setting directions, understanding and developing people, redesigning the organization, and managing teaching and learning programs" (p. 31) had a positive

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impact on teacher in their review of articles on school leadership. The list of practices is the subset of instructional leadership model proposed by Hallinger and Murphy (1985). The researchers concluded that school principal could improve student achievement by working on improving school climate - through executing the suggested instructional leadership behaviors which would subsequently impact teachers' perception on the work environment and in turn shaping their efficacy belief (Leithwood et al., 2008).

The findings of Leithwood et al. (2008) were consistent with other research findings. For example, Southworth (2002) listed knowledge and skills in the areas of curriculum, pedagogy, student and adult learning as crucial for principals to be successful as instructional leaders. When such knowledge and skills were put into practice, it caused better quality of teaching and student learning. These categories of behavior were related to better work environment for teaching and learning, as well as teacher belief in their ability. In another research, Sanzo et al. (2011) examined leadership practices of successful principals. The qualitative study, which involved ten middle school principals, found four themes of behavior: sharing leadership, facilitating professional development, leading with an instructional orientation, and acting openly and honestly (p 40) as core practices of successful principals. The study suggested that instructional leadership influence school learning environment and teachers' belief in executing their tasks in the classroom.

The study of school climate as a mediator is strengthened by the findings of Sukarmin (2010) which suggested that school climate is a perfect mediator for the

relationship between instructional leadership and teacher efficacy. The study involved 350 primary school teachers in Surakarta, Indonesia. In the quantitative study, instructional leadership was measured using the widely used Principal Instructional Management Rating Scale (PIMRS) with eleven different factors. Examples of item include "Point out specific strengths in teacher instructional practices in post-observation conferences" (p 262) and "Actively support the skills acquired during in-service training in the classroom" (p 264). On the other hand, school climate was measured using Organizational Health Inventory for secondary schools (OHI-S) with five independent factors, which include resource support (Example of item: Supplementary materials are available for classroom use (p 266)), academic emphasis (Example of item: Students try hard to improve their previous work (p 267), consideration (Example of item: Teachers do favor for each other (p 266)). Meanwhile teacher efficacy was measured using the teacher efficacy scale with ten items. Construct include items such as "When a student is having difficulty with an assignment, I am usually able to adjust it to his/her level" and "If a student in my class becomes disruptive and noisy, I feel assured that I know some techniques to redirect him quickly" (p 269) . Statistical results of the study concluded that the relationship between instructional leadership and teacher efficacy disappeared when school climate was removed from the equation.

In conclusion, all these research findings suggested that school climate could be examined as a mediator for the relationship between instructional leadership and teacher efficacy.

2.10 Rationale for the Study

The literature review has evoked an interest in the researcher to explore the relationship between instructional leadership, school climate and teacher efficacy. Based on the review, the theoretical model for the study was developed, which is: instructional leadership influence on teacher efficacy is mediated by school climate. In order to examine which instructional leadership behavior factors are the predictors of school climate and teacher efficacy, and which school climate factors are the predictor of teacher efficacy, stepwise regression analysis was employed. Hierarchical regression analysis was used to support the mediating effect of school climate in the relationship between instructional leadership behavior and teacher efficacy.

The review found that many previous studies had adapted validated instruments such as the Principal Instructional Management Rating Scale (PIMRS) to measure instructional leadership (e.g. Fancera, 2009; Hallinger & Murphy, 1985; Sukarmin, 2010). While the PIMRS had provided rich information about instructional leadership construct in the areas of defining school missions, managing instructional program and promoting a positive climate, it did not give much information about instructional leadership behavior in the area of teacher development. Therefore, in the current study, the researcher is interested to explore the behavior of principals in developing the teachers. Teacher development cannot be ignored in the instructional leadership management because teachers' ability has direct influence on student learning in the classroom. In fact, it is a stipulated initiative for educational transformation in Malaysia (Kementerian Pelajaran Malaysia, 2012).

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As for the school climate variable, the review indicated that previous studies often adapted the Organizational Health Inventory (such as Hoy & Woolfolk, 1993; Sukarmin, 2010; Zalilah Ismail, 2003) and Organizational Climate Description Questionnaire (OCDQ) (Ahmad Rusli Din, 1997; Cheng, 1985; Grizzard, 2007) to measure school climate. Therefore, for the current study, the researcher preferred the School Level Environment Questionnaire (SLEQ) (Johnson et al., 2007) because the instrument was specifically developed for measuring climate at school context and it was economical in scoring time as compared to other instruments. Furthermore, empirical studies supported that the instrument had high validity and reliability values (e.g. Burden & Fraser, 1994; Fisher & Fraser, 1990; Johnson & Stevens, 2001). Siti Noor (2011) used the instrument to measure school climate in secondary schools in the state of Kelantan. The study reported high reliability for the five factors, ranging from .77 to .86 but factor analysis revealed that the composition of factors were different from the revised SLEQ. Thus, it was not sure if the factors would emerge the same in the Kedah school context. In the current study, the researcher would perform factor analysis and reliability tests on the SLEQ.

The relationships between instructional leadership behavior, school climate and teacher efficacy have been made important by the findings that this construct influences various aspects of student learning. For example, teacher efficacy was related to quality of classroom instruction (Leithwood et al., 2008), student achievement, attitude and effective growth in their study (Berman et al., 1977; Ross, 1992), persistence in teaching (Tschannen-Moran et al., 1998), amount of teaching and learning in the classroom (Ryan, 2007), and teacher instructional behavior (Gibson & Dembo, 1984). The studies suggested that teacher efficacy is a powerful predictor for student achievement and thus justify the need to examine the relationships between this variable and other organizational factors because the results could provide possible answers to the Kedah State Education Department's goal of becoming the top five in the national public examination ranking by 2015. (Jabatan Pelajaran Negeri Kedah Darul Aman, 2013). The findings would enlighten principals on what they could work on in relation to instructional leadership behavior and school climate if they were to raise teacher efficacy.

2.11 Summary

This chapter begins with the review of The Path Goal Theory of Leadership (House, 1971; Hoy & Miskel, 1991), Instructional Leadership Theory (Bossert et al., 1982; Hallinger & Murphy, 1985) and Social Cognitive Theory (Bandura, 1986; 1997; Tschannen-Moran et al., 1998; Tschannen-Moran & Hoy, 2001) which acted as the underpinning theories for the current research framework. The Path Goal Theory of Leadership explains how leadership influences teachers' performance while the Instructional Leadership Theory delineates how instructional leadership effects

student achievement through various school factors and the Social Cognitive Theory illustrates how teachers develop their efficacy belief.

The review then moves on to the reviews on instructional leadership, school climate, and teacher efficacy which were the three main variables of the study. The review on instructional leadership touched on leadership theories, instructional leadership concept and models, instructional leadership framework of the current study. It then looks at issues regarding school climate, in terms of its concept and measurement issues. Finally, review on the same aspects was done on the third variable of the study, teacher efficacy. The chapter also discusses the findings of previous empirical studies that examine the relationships between instructional leadership behavior, school climate and teacher efficacy.

The review has evidenced that instructional leadership behavior, school climate, and teacher efficacy were related to each other. Based on the review, this study intends to investigate the influence of instructional leadership behavior on teacher efficacy, with school climate as the mediating variable. The independent variable, consisting of two dimensions: talking with teacher to promote reflection and promoting teacher professional growth, depicted instructional leadership behavior engaged by principals. The instrument was developed by the researcher based on the findings of a qualitative study (Blasé & Blasé, 2000). As for school climate, the researcher has decided to adopt and adapt the School Level Environment Questionnaire (Johnson et al., 2007) which measures teacher work environment in terms of relationships of people in the school, personal development, and system maintenance and system

change. The dependent variable of the study, teacher efficacy was determined by the composite score of the three factors in the Teacher Self Efficacy Scale (Tschannen-Moran & Hoy, 2001). This study would provide some valuable insights into the relationships between instructional leadership behavior, school climate and teacher efficacy.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the methods used to achieve the purpose of the study which is to determine the relationships between instructional leadership behavior, school climate and teacher efficacy in secondary schools in Kedah. Besides, it also discusses the research design, population and sample, instrumentation, data collection procedure and statistical analysis of the study. This chapter also includes a report on results of pilot study as well as the construct validity and reliability of instruments.

3.2 Research Design

This study employed a cross-sectional design to examine the relationships between the three variables - instructional leadership behavior, school climate and teacher efficacy. Purely quantitative method was used to gather responses from respondents utilizing three sets of standardized questionnaires. Questionnaires were used to collect data because this method was both time and cost effective (Dillman, 1991; Sekaran, 2000). Besides, this method enabled much larger sample to be involved at a single point and the data were comparable but it inherited a number of disadvantages including chance fluctuation of data, and unable to tell if the relationship between variables will remain or change with time (Bailey, 1982). Nevertheless, questionnaire method was still adopted to collect data as the characteristics of the variables in the study and its relationships with each other were unlikely to vary much within a short period of time.

In terms of the criteria for respondents, teachers were identified as the most suitable group because feedbacks from followers were meaningful to ascertain leader performance (Geothals, Sorenson, & Burns, 2004). Therefore, teachers' rating of their superiors' instructional leadership behavior would be more valid than the principals' self rating. This claim was supported by the findings of Kelley et al. (2005) which found that there is no correlation between rating of leadership behavior by the principals and teachers' perception of their superiors' behavior, and between the two, the ratings by teachers were more authentic. As for school climate and teacher efficacy, teachers' responses were used because many other empirical studies on these variables identified teachers as respondents (Johnson et al., 2007; Ryan, 2007; Tschannen-Moran & Hoy, 2001). Based on the above-mentioned reasons, this study involved only teachers as the respondents.

3.3 Population and Sample

The population of the study is teachers teaching at regular secondary schools in Kedah. The state of Kedah, with eight different districts, is situated at the north-west of Peninsular Malaysia. There is a district education office in each district overseeing the management of the schools in the respective district. Each school is headed by a principal holding a service grade of DG 48, 52 or 54. The total number of teachers in the state is 11,954 and they are posted at 146 regular secondary schools (Ministry of Education, Malaysia, 2011). The distribution of population of teachers by district is as shown in Table 3.1.

In order to obtain a sample that is representative of the teacher population in the state of Kedah, stratified random sampling techniques were used to identify teachers from the 146 secondary schools as respondents (Sekaran, 2000). For a population of 11,954, Krejcie and Morgan (1970) proposed a sample of 370.

The first part of sampling process involved the stratification of teachers by districts and identification of the number of sample from district based on the total number of 370. This step ensured that the number of teachers involved was proportionate to the total number of teachers in each district. From there, the numbers of school from each district to be involved were determined. In relation to this, the schools involved were picked randomly.

In the selection of sample from each school, Halpin (1957) suggested a maximum of 10 respondents from each identified organization. Based on this suggestion, the researcher decided to involve 10 respondents from each identified school to lessen the effect of data dropout due to non-responses and incomplete responses. As such, a total of 400 respondents were involved. The number of samples from each of the eight districts: Kota Setar, Kubang Pasu, Kuala Muda/ Yan, Padang Terap, Pendang, Baling/ Sik, Kulim/ Bandar Baharu and Langkawi are as shown in Table 3.1. Systematic sampling technique was used to identify respondents using the teacher name list in the schools.

Table 3.1: Number of Teachers Involved in the Study by District

District	No. of teachers	Approximate sample	No. of schools	No. of samples
PPD Baling / Sik	1376	43	5	50
PPD Kota Setar	2608	80	8	80
PPDKuala Muda /Yan	3035	94	10	100
PPD Kubang Pasu	1419	44	4	40
PPD Kulim/ Bandar Baru	1813	56	6	60
PPD Langkawi	530	17	2	20
PPD Padang Terap	482	15	2	20
PPD Pendang	691	21	3	30
Total	11954	370	40	400

(Source: Jabatan Pelajaran Negeri Kedah Darul Aman, 2012)

The study only involved samples from the population that meet the following criteria:

(i) It only included qualified teachers who were involved in full time classroom teaching for a minimum of one year. This is because previous findings reported that teaching experience influenced teacher efficacy (Chong et al., Hoy & Woolfolk, 1993). Teachers holding the post as counselors were not included in the study as they were not involved in classroom instruction. This goes the same for untrained teachers who were employed on contract basis and senior assistants who were part of the management team in schools.

(ii) The respondents have served for a minimum of one year under the principal whose instructional leadership behavior they rate. Kingstrom and Mainstone (1985) used the same selection criterion for rater-ratee acquaintance in their study.

(iii) The principal of the school holds a service grade of DG 52 (Jabatan

Pelajaran Negeri Kedah).

3.4 Instrumentation

The study utilized three different standardized questionnaires to measure instructional leadership behavior, school climate, and teacher efficacy. The instrument used to measure instructional leadership behavior was constructed by the researcher for the purpose of this study. The researcher utilized the findings of a qualitative study conducted by Blasé and Blasé (2000) to construct items that described instructional leadership behaviors in the areas of talking with teacher to encourage reflection and promoting teacher professional growth. The other two instruments were established questionnaires: The School Level Environment Questionnaire (Johnson et al., 2007) and Teacher Self Efficacy Scale (Tschannen-Moran & Hoy, 2001), which were used to measure school climate and teacher efficacy respectively.

3.4.1 Instructional Leadership Behavior Questionnaire

Instructional leadership behavior, the independent variable of the study, was measured using a questionnaire developed specifically for this study. The development of instructional leadership behavior questionnaire began with item construction. The items were constructed based on the findings of a qualitative study involving over 800 teachers in elementary, middle-high and high schools (Blasé & Blasé, 2000). The Blasé reported the line-by-line analysis of the responses by respondents to the following two open-ended questions: "1) What characteristics

(e.g. strategies, behaviors, attitudes, goals) of principals positively influence classroom teaching, and 2) What effects do such characteristics have on classroom instruction?" (p 131).

Using the Blasé structured findings and listings of effective leadership behavior in the literature (Andrews & Soder, 1987; Blasé, 1987; Crum et al., 2009; Day et al., 2008; DuFour & Marzano, 2009; Glanz et al., 2007; Glickman et al., 2007; Hallinger & Murphy, 1985; Hoerr, 2008; Lahui-Ako, 2001; Lambert, 2002; Manthey, 2006; Murphy et al., 2007; Quah, 2011; Sanzo et al., 2011; Smith & Andrews, 1989; Southworth, 2002; Ylimaki, 2007), a total of 69 items on behavioral statements that described critical job practices and behaviors of effective leadership were constructed (Table 3.2). In the process of writing the items, the researcher followed the steps for constructing behavioral observation scales (Hallinger & Murphy, 1985; Latham & Wexley, 1977). The 69 items illustrated behaviors of principal which influence teachers' classroom instruction positively (Blasé & Blasé, 2000).

Table 3.2: Analysis of Instructional Leadership Behaviors Items Based on Literature Review

No.	Item description	Related Empirical Studies
1	The principal makes purposeful suggestions to teachers	Blasé & Blasé (2000), Glickman et al. (2007)
2	The principal makes appropriate suggestions to teachers	Blasé & Blasé (2000), Glickman et al. (2007)
3	The principal makes non- threatening suggestions to teachers	Blasé & Blasé (2000), Glickman et al. (2007)
4	The principal makes suggestions to teachers during post-observation conference	Andrews & Soder (1987), Blasé (1987), Blasé & Blasé (2000),
5	The principal makes suggestions to teachers informally, in day-to-day interactions	Andrews & Soder (1987), Blasé & Blasé (2000), Blasé (1987)
6	The principal considers teachers' input when making suggestions to them	Andrews & Soder (1987), Blasé & Blasé (2000)
7	The principal shares their teaching experiences when making suggestions to teachers	Blasé & Blasé (2000), Smith & Andrews (1989)
8	The principal uses relevant examples when making suggestions to teachers	Blasé & Blasé (2000), Sanzo et al. (2011)
9	The principal gives teachers choice when making suggestions to teachers	Blasé & Blasé (2000), Sanzo et al. (2011)
10	The principal contradicts outdated policies when making suggestions to teachers	Blasé & Blasé (2000), Quah (2011)
11	The principal encourages teachers to take risk when making suggestions to teachers	Blasé & Blasé (2000), Lahui-Ako (2001), Sanzo et al. (2011)
12	The principal offers professional literature to teachers when making suggestions to teachers	Blasé & Blasé (2000), Hallinger & Murphy (1985)
13	The principal recognizes teachers' strength when making suggestions to teachers	Blasé & Blasé (2000), Lahui-Ako (2001)
14	The principal maintains a focus on improving classroom instruction when making suggestions to teachers	Andrews & Soder (1987), Blasé & Blasé (2000)
15	The principal gives feedbacks based on observed classroom behaviors	Andrews & Soder (1987), Blasé (1987), Blasé & Blasé (2000), Lahui-Ako (2001)
16	The principal gives feedbacks that express caring and interest	Blasé (1987), Blasé & Blasé (2000), Glanz et al. (2007)
17	The principal gives feedbacks that contain praises	Blasé (1987), Blasé & Blasé (2000)
18	The principal gives feedbacks that establish a problem-solving orientation	Blasé (1987), Blasé & Blasé (2000), Glanz et al. (2007)
19	The principal gives feedbacks that respond to concern about students	Blasé (1987), Blasé & Blasé (2000)

20	The principal gives feedbacks that stress his / her availability for follow-up talk	Andrews & Soder (1987), Blasé (1987), Blasé & Blasé (2000
21	The principal demonstrates good teaching techniques during post- observation conferences	Blasé & Blasé (2000), Quah (2011)
22	The principal models good teaching techniques in classrooms	Andrews & Soder (1987), Blasé & Blasé (2000), Lahui-Ako (2001)
23	The principal demonstrates positive interactions with students	Andrews & Soder (1987), Blasé & Blasé (2000), Hallinger & Murphy (1985)
24	The principal utilizes informal coaching and mentoring	Blasé & Blasé (2000), Hallinger & Murphy (1985); Sanzo et al. (2011)
25	The principal demonstrates teamwork by being a team player	Blasé & Blasé (2000), Sanzo et al. (2011)
26	The principal finds out the reasons teachers do certain activities in classroom instruction	Blasé & Blasé (2000), Crum et al. (2009), Hoerr (2008)
27	The principal finds out the intended outcomes of activities in the classroom	Blasé & Blasé (2000), Hoerr (2008)
28	The principal asks questions that make teachers evaluate what they do	Blasé & Blasé (2000), Hoerr (2008), Southworth (2002)
29	The principal asks questions to solicit teachers' advice on instructional matters	Blasé (1987), Blasé & Blasé (2000), Sanzo et al. (2011)
30	The principal asks questions in a non-threatening manner	Blasé & Blasé (2000), Sanzo et al. (2011)
31	The principal praises individual teachers based on specific and concrete teaching behaviors	Blasé & Blasé (2000), Hallinger & Murphy (1985)
32	The principal praises individual teachers during post-observation conferences	Blasé (1987), Blasé & Blasé (2000)
33	The principal praises individual teachers during informal interaction	Blasé & Blasé (2000), Hallinger & Murphy (1985)
34	The principal praises individual teachers in front of other teachers	Blasé (1987), Blasé & Blasé (2000), Hallinger & Murphy (1985)
35	The principal praises individual teachers in front of parents	Blasé (1987), Blasé & Blasé (2000)
36	The principal praises individual teachers in front of students	Blasé (1987), Blasé & Blasé (2000)
37	The principal provides staff development opportunities to enable teachers learn new teaching strategies	Andrews & Soder (1987), Blasé & Blasé (2000), Quah (2011)
38	The principal forces teachers to attend staff development meetings	Blasé & Blasé (2000), Hallinger & Murphy (1985)

39	The principal provides staff development opportunities that always support major instructional goals	Blasé & Blasé (2000), Lahui-Ako (2001), Quah (2011)
40	The principal provides staff development opportunities based on teachers needs	Blasé & Blasé (2000), Day et al. (2008), Purkey & Smith (1983)
41	The principal himself/ herself would participate in staff development meetings	Andrews & Soder (1987), Blasé & Blasé (2000), Hallinger & Murphy (1985)
42	The principal supports collaboration among teachers by modeling a philosophy of teamwork	Blasé & Blasé (2000), Sanzo et al. (2011)
43	The principal supports collaboration among teachers by encouraging teachers to meet regularly to discuss instruction program	Blasé (1987), Blasé & Blasé (2000), Sanzo et al. (2011)
44	The principal supports collaboration among teachers by allocating time for collaboration work	Blasé & Blasé (2000), Hallinger & Murphy (1985), Sanzo et al. (2011)
45	The principal supports collaboration among teachers by advocating the sharing of knowledge within the school	Blasé & Blasé (2000), Lahui-Ako (2001), Sanzo et al. (2011)
46	The principal supports collaboration among teachers by advocating the sharing of teaching skills within the school	Blasé & Blasé (2000), Lahui-Ako (2001), Sanzo et al. (2011)
47	The principal supports collaboration among teachers by advocating peer observation among teachers in the school	Blasé & Blasé (2000), Glickman et al. (2007)
48	The principal supports collaboration among teachers by encouraging collaborative work outside the school	Blasé & Blasé (2000), DuFour & Marzano (2009), Ylimaki (2007)
49	The principal supports collaboration among teachers by setting up study group for interested teachers	Blasé & Blasé (2000), DuFour & Marzano (2009), Lambert (2002)
50	The principal develops coaching relationships among teachers by scheduling teachers to observe their peers teaching in the classroom	Blasé & Blasé (2000), Glanz et al (2007)
51	The principal develops coaching relationships among teachers by encouraging teachers to visit the classroom of exemplary teachers	Blasé & Blasé (2000), Glanz et al (2007)
52	The principal develops coaching relationships among teachers by asking exemplary teachers to serve as models to other teachers	Blasé & Blasé (2000), DuFour & Marzano (2009), Manthey (2006)
53	The principal develops coaching relationships among teachers by encouraging teachers to make presentations on effective teaching strategies within their school	Blasé & Blasé (2000), Hallinger & Murphy (1985), Sanzo et al. (2011)
54	The principal develops coaching relationships among teachers by encouraging teachers to make presentations on effective teaching strategies at district level	Blasé & Blasé (2000), Murphy et al. (2007)
55	The principal develops coaching relationships among teachers by encouraging teachers to make presentations on effective teaching strategies at professional conferences	Blasé & Blasé (2000), Murphy et al. (2007)

56	The principal encourages and supports diverse approaches to teaching and learning	Andrews & Soder (1987), Blasé & Blasé (2000)
57	The principal encourages and supports flexibility in teaching strategies	Andrews & Soder (1987), Blasé & Blasé (2000)
58	The principal encourages and supports the provision of resources to support teacher growth	Andrews & Soder (1987), Blasé (1987), Blasé & Blasé (2000), Quah (2011)
59	The principal encourages and supports the provision of resources to support improved classroom instruction	Blasé (1987), Blasé & Blasé (2000), Quah (2011)
60	The principal creates culture of lifelong learning	Blasé & Blasé (2000), Murphy et al. (2007)
61	The principal creates culture of collaboration	Blasé & Blasé (2000), Murphy et al. (2007)
62	The principal creates culture of inquiry	Blasé & Blasé (2000), Murphy et al. (2007)
63	The principal creates culture of experimentation	Blasé & Blasé (2000), Murphy et al. (2007)
64	The principal creates culture of reflection	Blasé & Blasé (2000), Murphy et al. (2007), Lambert (2002)
65	The principal conducts action research to drive staff development	Blasé & Blasé (2000), Murphy et al. (2007)
66	The principal conducts action research to determine teachers' needs	Blasé & Blasé (2000), Hallinger & Murphy (1985)
67	The principal conducts action research to determine teachers' educational background	Blasé & Blasé (2000), Sanzo et al. (2011)
68	The principal conducts action research to make decision on in-service plans	Blasé (1987), Blasé & Blasé (2000)
69	The principal conducts action research in which teachers are provided training in collection and analysis of data	Blasé & Blasé (2000), Sanzo et al. (2011)

The questionnaire required respondents to rate the extent of their principal doing those practices and behaviors by using a five-point scale of Never (1), Seldom (2), Sometimes (3), Frequently (4), and Always (5). The scale indicated the frequency of behavior in each item being practiced as follows: 0-19%, 20-39%, 40-59%, 60-79%, 80-100% (Latnam & Wexley, 1977). Mean score of item was computed to indicate the degree to which a behavior was practiced. A lower value of mean score (nearer to 1) showed that teachers perceived their principal to perform the behavior at a lower degree of frequency.

After the instructional leadership items were constructed, they were reviewed for content validity by two experts. The first expert was a lecturer at Institut Aminuddin Baki, the National Institute of Educational Leadership and Management, Ministry of Education, Malaysia who had over 15 years of experience conducting training on instructional leadership and management courses. The expert reviewed the items for format, items clarity, dimension representation, and language appropriateness (Appendix 1). The second expert was the researcher's supervisor who was formerly the Director of the National Institute of Educational Leadership and Management, Ministry of Education, Malaysia.

The approved items were then translated to Bahasa Malaysia using the Back Translation method which is detailed in Section 3.4.4. A copy of the questionnaire used in the pilot study is provided in Appendix 2.

3.4.2 School Climate Questionnaire

School climate, the mediating variable of the study, was measured using the Revised School Level Environment Questionnaire (SLEQ) developed by Johnson et al. (2007). The questionnaire, comprised five factors which were further divided into 21 items, was translated to Bahasa Malaysia (Section III, Appendix 2). The items of the questionnaire described the school and work environment in which teachers were in. Respondents indicated the extent of their agreement to the statements using a five-point scale of Totally Disagree (1), Disagree (2), Sometimes Agree (3), Agree (4), and Totally Agree (5). Example of item: "Most students are well mannered or respectful of school staff" (Section III, Appendix 2). Mean score of items and factors

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were computed to indicate level of school climate as perceived by teachers. In relation to this, a higher value of mean score (nearer to 5) indicated a more positive school climate. All six negative statements in the SLEQ were reversed scored before the analysis. A copy of the questionnaire is included in Appendix 2.

Some modifications were done to the SLEQ so that it was more suitable to be used in the current study. Firstly, the scale of the revised SLEQ was reversed from 1 which indicated Totally Agree while 5 for Totally Disagree to scale of 1 to indicate Totally Disagree while 5 for Totally Agree. This adaptation was done so that the responses were in an ascending order, moving from negative to positive value consistent with the other two questionnaires of the study. This move could lessen probable confusion faced by the respondents when giving responses. Apart from that, item 10 of the questionnaire which read "New courses or curriculum materials are being implemented" was deleted because secondary schools in Malaysia did not have the authority to introduce new courses like some other countries do. At the same time, an item which read "The supply of equipment and resource is not adequate" was broken into two separate items as the original item was double-barreled in nature (Babbie, 1989).

3.4.3 Teacher Efficacy Questionnaire

The third variable of the study, teacher efficacy, was measured using the Teachers' Sense of Efficacy Scale (TSES) developed by Tschannen-Moran and Hoy (2001). The questionnaire consists of 12 items with four items in each of the three dimensions: teacher efficacy for 1) student engagement (SE), 2) instructional

strategies (IS), and 3) classroom management (CM) (Table 3.3). Items of the questionnaire describe activities which teachers had to perform in discharging their daily duties. Sample items include: "How much can you do to control disruptive behavior in the classroom?", and "To what extent can you craft good questions for your students?" (Section IV, Appendix 2). Respondents assessed their belief level of capabilities in accomplishing the activities using a nine-point scale ranging from Nothing (1) to A Great Deal (9). Nevertheless, the questionnaire of the current study adopted only a five-point scale so that the responses were consistent with the earlier two questionnaires that use only five points scale.

3.4.4 Back Translation

Back-translation method was used to translate the questionnaires to the national language, Bahasa Malaysia (Brislin, 1970). The translation procedure was as follows: the researcher, who is bilingual in Bahasa Malaysia and English, translated the questionnaires into Bahasa Malaysia. Then, the translated version was given to a lecturer at Institut Aminuddin Baki who is bilingual and familiar in the content areas of instructional leadership, school climate and teacher efficacy, to be translated back to English. The researcher then compared the version produced by the second translator and the original version to ensure the two scripts matched in meaning. De-centering method was use to iron out discrepancies in the back-translated version. Wording in the items that caused confusion were changed accordingly. Cross-cultural difference in terminology was taken into consideration in the translation of the questionnaires. For example, an item in Section III "Instructional equipment is not consistently accessible" was translated as "Bahan pengajaran tidak dapat

diperoleh secara konsisten". Instructional equipment was translated as "bahan pengajaran" instead of "alat pengajaran". The final version of the questionnaires in Bahasa Malaysia was approved by a panel of three experts in the field of educational leadership and management who are bilinguals.

3.4.5 Validity of Questionnaires

Factor analysis technique was used to determine the underlying factor structure of instructional leadership behavior, school climate and teacher efficacy questionnaires (Coakes, Steed, & Dzidic, 2006; Gibson & Dembo, 1984; Hair, Anderson, Tatham, & Black, 2005; Sekaran, 2000). In spite of its validity being reported in the literature, factor analysis was done to recheck the underlying factor structure of the school climate and teacher efficacy because of the following reasons: 1) the questionnaires were translated to Bahasa Malaysia, 2) some adaptation was done on the instruments to suit its use in the local context, and 3) the questionnaires were administered in a different country from where the instruments were originally developed.

All three instruments used were checked for validity to ensure its goodness and appropriateness for the context of the current study. The validation of face and content validity of the questionnaires involved two groups of judge with subject expertise in the field of educational leadership and management. Besides validation by experts, statistical analysis was also employed to ensure content and construct validity (Alig-Mielcarek, 2003; Fisher & Fraser, 1990; Hallinger & Murphy, 1985; Sekaran, 2000).

3.4.5.1 Instructional Leadership Behavior

Factor analysis technique was used to obtain factor structure of instructional leadership questionnaire. The method used was factor analysis via principal axis factoring and varimax rotation in which items with loadings smaller than .5 were eliminated. The analysis yielded 14 different factors, with factor loading ranges from the lowest value of .50 to the highest value of .83, eigen value greater than 1. The number of items loaded in each factor ranged from 1 to 9. Hair et al. (2005) indicated that a factor is valid if it has a minimum of two items. After factor loading value, eigen value and minimum number of items in a factor were considered, the final factor solution was a model with 48 items fitting into 10 factors (Table 3.3). The 10 factors obtained from the analysis were then named accordingly based on review of instructional leadership literature (Alig-Mielcarek, 2003; Andrews & Soder, 1987; Blasé, 1987; Blasé & Blasé, 2000, 2004; Hallinger & Murphy, 1985; Lahui-Ako, 2001; Quah, 2011).

The output was then examined for validity using correlation matrix, Barlett's test of sphericity, Kaiser-Meyer-Olkin (KMO), and anti-image matrix (Coakes et al., 2006; Hair et al., 2005). The examination found excess of correlation values greater than .30. In addition, Barlett's test of sphericity was 8190.26 and Kaiser-Meyer-Olkin was greater than .87, indicating factorability of the matrix as a whole. Apart from that, an examination of the values on the diagonal of anti-image correlation matrix found all values were greater than .50, indicating sampling adequacy of each variable.

An examination of total variance explained revealed that the 48 items in 10 factors explained 58.73% of the variance in which talking with teacher to encourage reflection accounted for 20.64% while promoting teacher professional development accounted for 38.09% (Table 3.3). Hair et al. (2005) proposed a factor solution with total variance explained of more than 50% as satisfactory. Therefore, the 10-factors solution was a valid tool to measure instructional leadership construct. Information about the reliability of the 10 factors and overall questionnaire can be found in Section 3.4.7.

Table 3.3: Factor Matrix for Instructional Leadership Behaviour

No	Item Description	Factor									
		1	2	3	4	5	6	7	8	9	10
1	The P makes suggestions on classroom instruction to solve teachers' problems	.75									
2	The P gives feedbacks that contained praise	.73									
3	The P gives feedbacks that established a problem-solving orientation	.67									
4	The P makes suggestions on classroom instruction that were appropriate to teacher	.63									
5	The P gives feedbacks that responded to concern about student learning	.65									
6	The P makes suggestions on classroom instruction that maintained a focus on improving classroom instruction to teachers	.56									
7	The P gives feedbacks that focused on observed classroom behaviors	.55									
8	The P gives feedbacks that expressed caring and interest	.53									
9	The P praises individual teacher in front of students		.70								
10	The P praises individual teacher in front of parents		.60								
11	The P praises individual teacher in front of other teachers		.54								
12	The P praises individual teacher during post-observation conferences		.53								
13	The P makes suggestions on classroom instruction that used relevant examples to teacher			.83							
14	The P makes suggestions on classroom instruction that shared their teaching practice experiences to teacher			.82							
15	The P makes suggestions on classroom instruction that gave teachers choices			.61							
16	The P makes suggestions on classroom instruction that considered teachers' input			.54							
17	The P asks questions to find out the reasons teachers do certain activities in classroom instruction				.56						
18	The P asks questions to find out the intended outcomes of activities in the classroom				.50						

Talking with Teachers to

Encourage Reflection

Total Variance=20.64%

#	Item			
19	The P conducts research to determine teachers' needs		.83	
20	The P conducts research to determine teachers' educational background		.82	
21	The P conducts research to make decision on in-service plans		.79	
22	The P conducts research in which teachers are provided training in data collection & analysis		.76	
23	The P conducts research to drive staff development		.75	
24	The P encourages & provides resources to support improved classroom instruction			.80
25	The P encourages & provides resources to support teacher growth			.75
26	The P encourages & supports diverse approaches to teaching and learning			.70
27	The P encourages & supports flexibility in teaching strategies			.68
28	The P creates culture of collaboration			.64
29	The P creates culture of lifelong learning			.59
30	The P creates culture of reflection			.54
31	The P creates culture of experimenting teaching approach			.53
32	The P creates culture of inquiry on teaching & learning			.52
33	The P supports collaboration among educators by allocating time for collaboration	Promoting Professional Growth		.70
34	The P supports collaboration among educators by advocating the sharing of knowledge within the school	Total Variance = 38.09%		.65
35	The P supports collaboration among educators by advocating the sharing of teaching skills within the school			.60
36	The P supports collaboration among educators by advocating peer observation among teachers in the school			.58
37	The P supports collaboration among educators by encouraging teachers to meet regularly to discuss instruction program			.55
38	The P supports collaboration among educators by encouraging collaborative work outside the school			.52

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No.	Item												Total
39	The P provides staff development opportunities that were based on teachers needs								.71				
40	The P provides staff development opportunities that always supported major instructional goals								.65				
41	The P provides staff development opportunities that let teachers learn new teaching strategies								.60				
42	The P develops coaching relationships among educators by encouraging teachers to make presentations on effective teaching strategies at district level								.79				
43	The P develops coaching relationships among educators by encouraging teachers to make presentations on effective teaching strategies at professional conferences								.75				
44	The P develops coaching relationships among educators by encouraging teachers to make presentations on effective teaching strategies within their school								.59				
45	The P develops coaching relationships among educators by asking exemplary teachers to serve as models to other teachers								.53				
46	The P develops coaching relationships among educators by scheduling teachers to observe their peers teaching in the classroom									.69			
47	The P develops coaching relationships among educators by encouraging teachers to visit the classroom of exemplary teachers									.52			
48	The P supports collaboration among educators by setting up study group for interested teachers									.57			
Eigenvalue		5.67	3.41	3.37	1.78	7.09	6.38	3.96	3.21	3.08	2.56		40.51
% variance		8.22	4.96	4.89	2.57	10.27	9.25	5.73	4.66	4.46	3.72		58.73

P = Principal

3.4.5.2 School Climate

Factor analysis procedure was used to recheck the factor structure for school climate construct. The analysis involved principal component extraction and varimax rotation. Item loading of item was set at greater than .5 (Hair et al., 2005). Result of factor analysis found that the make-up of the dimensions differed from the original questionnaire. Instead of five, factor analysis yielded six different factors and the number of items in each factor ranged from 1 to 4. As the school climate questionnaire is an established one, the result was compared to the original make-up of each factor (Johnson et al., 2007). Items that did not belong to the original factor and stood alone were deleted. After the deletion, the remaining 11 items were computed for factor analysis again. The second factor analysis resulted in a three-factor solution with item loadings ranged from .69 to .90, Eigen value greater than 1.

Examination of the validity of the school climate questionnaire using the same criteria as instructional leadership questionnaire showed adequacy of construct validity. The Barlett's test value was 713.27, KMO value was .69 and the diagonal readings on anti-image correlation matrix indicated sufficient sampling adequacy and factorability of the matrix as a whole. The three different factors explained 67.74% of the total variance in school climate. The value was higher than the minimum 50% significant value (Hair et al., 2005). Apart from that, a comparison between school climate of the current study and other school climate measures used in previous studies found there was similarity in the construct (Table 3.4). Therefore, the three factors in the questionnaire in the Bahasa Malaysia version was a valid tool

for measuring school climate. The organization of items in school climate
questionnaire after factor analysis is encapsulated in Table 3.5.

Table 3.4: School Climate Construct

OHI Sukarmin (2010)	Academic Press Alig-Mielcarek (2003)	SLEQ Johnson et al. (2007)	Current study
• Collegial leadership	•Principal influence	• Collaboration	• Collaboration
• Resource influence	•Resource support	• School resources	• School resources
• Academic emphasis	•Academic emphasis	• Student relations	• Student relations
• Institutional integrity		• Instructional innovation	
• Teacher affiliation		• Decision making	

Table 3.5: Factor Matrix for School Climate

No.	Item Description	Student Relations	School Resources	Collaboration	
1	Students in this school are well behaved	.85			
2	Most students are helpful and cooperative with teachers	.83			
3	Most students are well mannered or respectful of school staff	.83			
4	Most students are motivated to learn.	.69			
5	Teaching aids such as video equipment, tapes and films are readily available		.90		
6	The supply of equipment is not adequate		.80		
7	The supply of resource is not adequate		.78		
8	The school library has sufficient resources and materials		.76		
9	Good teamwork is not emphasized enough at my school			.82	
10	I seldom discuss the needs of individual students with other teachers			.80	
11	Classroom instruction is rarely coordinated across teachers			.70	
					Total
	Eigen value	2.76	2.70	1.99	7.45
	% of variance	25.07	24.82	18.09	67.74

3.4.5.3 Teacher Efficacy

Just as school climate construct, factor analysis technique involving principal component extraction and varimax rotation was performed to obtain factor structure of teacher efficacy. Item loading of item was set at greater than .5. The analysis yielded three factors with Eigen value greater than 1.

A comparison of the factor matrix with the Teacher Self Efficacy Scale (TSES) showed that only one item did not load on the factor according to the original questionnaire (Tschannen-Moran & Hoy, 2001). Item 11, which was supposed to be in student engagement factor, has loaded on instructional strategies factor. Nevertheless, the item was remained at where it was because teacher efficacy was measured using the composite score of all items in this study.

Examination of validity of teacher efficacy questionnaire found that value for Barlett's test was 1166.93, KMO value was .91 and anti-image correlation matrix readings supported factorability and sampling adequacy. The total variance explained was 77.13%. These statistical results indicated that the Bahasa Malaysia version of the TSES was a valid tool for measuring teacher efficacy. Table 3.6 details the organization of items in factors and its corresponding eigen value and variance.

Table 3.6: Factor Matrix for Teacher Efficacy

No.	Item Description	Classroom Management	Instructional Strategies	Student Engagement	
1	How much can you do to calm a student who is disruptive or noisy?	.83			
2	How much can you do to control disruptive behavior in the classroom?	.83			
3	How much can you do to get children to follow rules?	.75			
4	How well can you establish a classroom management system with each group of students?	.67			
5	How much can you assist families in helping their children to do well in school?		.85		
6	How well can you implement alternative strategies in your classroom?		.77		
7	To what extent can you use a variety of assessment strategies?		.70		
8	To what extent can you provide an alternative explanation when students are confused?		.69		
9	To what extent can you craft good questions for your students?		.58		
10	How much can you do to get students to believe they can do well in school work?			.88	
11	How much can you do to motivate students who show low interest in school work?			.87	
12	How much can you do to help your students value learning?			.83	
					Total
Eigen value		3.32	3.15	2.78	9.25
% of variance		27.72	26.28	23.13	77.13

3.4.6 Reliability of the Questionnaires

Cronbach alpha coefficients were computed to determine the internal consistency of items in all the three questionnaires used in the study. The internal consistency for each factor of instructional leadership behavior, school climate and teacher efficacy and overall questionnaires are as shown in Table 3.7. The Cronbach alpha values of

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all of them were greater than .70 which is higher than the acceptable lower limit for internal consistency value (Nunnally, 1978).

As the data collected from the pilot study showed high internal consistency and initial validity, the results were used to formulate the questionnaires for the study and statistical analysis for the actual study were based on the factors derived from this factor analysis without further modification.

Table 3.7: Internal Consistency for the Constructs of the Study

Construct	Factors	No. of items	α
Instructional Leadership Behavior (ILB)	Giving feedback	8	.90
	Giving praise	4	.83
	Making suggestions	4	.86
	Using inquiry and soliciting advice and opinion	2	.86
	Doing action research to inform decision making	5	.94
	Encouraging and supporting diverse teaching and learning approach	9	.93
	Supporting collaboration effort	6	.92
	Emphasizing the study of teaching & learning	3	.85
	Developing coaching relationships among teachers	4	.89
	Initiating teamwork	3	.85
Overall ILB		48	.97
School Climate (SC)	Student relations	4	.83
	School resources	4	.84
	Collaboration	3	.72
Overall SC		11	.75
Teacher Efficacy (TE)	Classroom management	4	.89
	Instructional strategies	5	.89
	Student engagement	3	.91
Overall TE		11	.94

3.4.7 The Actual Study

The questionnaire for the current study consists of four different sections: 1) the respondent profile, 2) instructional leadership behavior questionnaire, 3) school climate questionnaire, and 4) teacher efficacy questionnaire (Appendix 3).

There are three items in section I of the questionnaires. Respondents were asked to provide information related to their teaching experience, gender, and academic qualifications. Section II consists of 48 items grouped under two dimensions: 1) talking with teachers to encourage reflection, and 2) promoting teacher professional growth. The two dimensions were further divided into 10 factors with the number of items in each factor as shown in Table 3.8. Section III consists of 11 items which were grouped under three different dimensions (Table3.8). Section IV was made up of 12 items which were grouped under three different dimensions (Table 3.8). In total, there were altogether 74 items in the questionnaires. Information about the distribution of items by factor can be found in Appendix 4.

Table 3.8: Questionnaires for the Current Study

Section	Construct	Dimensions	Sub-dimensions	No. of items	Total
A	Demography				3
	• Teaching Experience			1	
	• Gender			1	
	• Academic Qualifications			1	
B	Instructional Leadership Behavior	Talking with Teachers to Encourage Reflection	Giving feedback	8	48
			Giving praise	4	
			Making suggestions	4	
			Using inquiry and soliciting advice and opinion	2	
		Promoting Teacher Professional Growth	Doing action research to inform decision making	5	
			Encouraging and supporting change	9	
			Supporting collaboration effort	6	
			Emphasizing the study of teaching & learning	3	
			Developing coaching relationships among teachers	4	
			Initiating teamwork	3	
C	School Climate	Collaboration		3	11
		Student Relations		4	
		School Resources		4	
D	Teacher Efficacy	Student Engagement		3	12
		Instructional Strategies		5	
		Classroom Management		4	

3.5 Data Collection Procedure

This study involved data collection twice. The first time was for the pilot study which was done in April 2011. It involved 132 teachers at six secondary schools in Kubang Pasu district. The researcher asked for permission from the school principals to deliver the questionnaires personally to the respondents who were randomly selected. Each respondent was briefed on the purpose of the questionnaires and was given one day to answer the questionnaires. The researcher went back to the schools to collect the completed questionnaires on the next day. Responses from the completed questionnaires were computed for statistical analysis involving factor analysis and reliability analysis using the SPSS statistical computer program.

Data collection for the actual study was carried out in the month of May 2012 involving 400 secondary school teachers in the state of Kedah. The data collection did not involve teachers who took part in the pilot study. Permission to collect data was sought from the Educational Policy Research and Planning Section, Ministry of Education, Malaysia (Appendix 5) and State Education Department of Kedah (Appendix 6) prior to data collection.

Using the same procedure as in the pilot study, the researcher approached the principals in the selected schools to get their consent and administered the questionnaires personally to the teachers identified as respondents. For the identified respondents who were not at school, the questionnaires were given to a school representative suggested by the principal. The representative would then deliver the questionnaires to the respective teachers.

In order to make sure that each respondent received the same information, the researcher attached a note informing the respondents about the purpose of the study and strict confidentiality of their responses at the front portion of the questionnaire. Each respondent was given small incentives as a token of appreciation. This method of data collection helped in increasing response rate from respondents (Dillman, 1991; Oppenheim, 1992). Respondents were given a day to answer the questionnaires. This was so because many teachers were busy at school and reluctant to put aside what they were doing to answer the questionnaires. Therefore, the researcher left after delivering the questionnaires and returned the following day to collect the completed questionnaires.

3.6 Data Analysis

Analysis of data was completed using the SPSS statistical computer program. First, descriptive statistics were used to show profile of respondents in terms of gender, highest academic qualifications, and years of teaching experience. After that, the data were computed to obtain means and standard deviations for levels of instructional leadership behavior factors practiced by secondary school principals, levels of school climate factors, and level of teacher efficacy among the secondary school teachers.

In order to test the hypotheses of the study, multiple regression analyses were employed. For that, the data were first subjected to correlation analysis to examine the correlation among the variables. In this study, the interpretation of correlation

among the variables was based the effect size as shown in Table 3.9 (Ary, Jacobs, & Razavieh, 2002). After that, stepwise multiple regression analyses were utilized to determine significant predictors for the relationships between instructional leadership behavior – school climate, school climate- teacher efficacy and instructional leadership behavior- teacher efficacy. Finally, hierarchical multiple regression analysis was performed to examine if school climate is a mediator for the relationship between instructional leadership behavior and teacher efficacy. The significant level of all analyses was set at .05.

Table 3.9: Convention for Effect Sizes of Correlation

r	Effect size
.10	Small
.30	Medium
.50	Large

3.7 Summary

This chapter details methodology of the research which encompasses research design, sample, instrumentation, data collection procedure and data analysis. The current study employed a cross-sectional design and purely quantitative method to gather data from teachers in regular secondary schools. A total of three questionnaires were used in the study, of which one was constructed by the researcher based on the findings of a qualitative study conducted by Blasé and Blasé (2000) while the other two were established questionnaires, namely the revised School Level Environment Questionnaire (SLEQ) and Teacher Self Efficacy Scale

(TSES). The questionnaires were translated to Bahasa Malaysia for use in the Malaysian context using the back-translation method (Brislin, 1970).

The chapter also reports the results of pilot study. Factor analysis of the instructional leadership behavior construct found 10 different factors. The 10 factors were categorized under two different dimensions, namely talking with teachers to encourage reflection and promoting teacher professional growth (Blasé & Blasé, 2000). Statistical analysis results indicated that the instrument had high level of validity and reliability. Similarly, the translated School Level Environment Questionnaire (SLEQ) and Teacher Self Efficacy Scale (TSES) were computed for factor analysis and internal consistency. Factor analysis of the SLEQ obtained three instead of five factors. Both the school climate and teacher efficacy instruments showed high reliability. Thus, statistical analysis results of the pilot study supported that the instruments were good for measuring instructional leadership behavior, school climate and teacher efficacy construct.

The relevant descriptive statistics and multiple-regression analysis needed for testing the hypotheses of the study were also outlined. All data were analyzed using SPSS statistical computer program. Specifically, stepwise multiple regression analysis was used to examine the predictors for school climate and teacher efficacy while hierarchical multiple regression analysis was used to determine if school climate was a mediator for the relationship between instructional leadership behavior and teacher efficacy. These statistical analyses formed the bases for report of the findings in Chapter Four.

CHAPTER FOUR
RESEARCH FINDINGS AND ANALYSIS

4.1 Introduction

This chapter reports the findings of the study which uses quantitative method to collect data. The first part of the chapter displays the results of data screening. The second part exhibits demographic information of respondents. It is followed by the presentation of findings for the five research questions. Statistical analyses involve the use of descriptive statistics including means and standard deviation as well as inferential statistics covering bivariate correlation, stepwise and hierarchical regression analyses.

4.2 Description of Completed Questionnaires

This study was well received by the schools and especially the teachers identified as respondents. The teachers' willingness and co-operation to answer the questionnaires have made this study record a good return rate. Ten teachers from each school were randomly selected from 40 secondary schools as respondents, thus a total of 400 questionnaires were distributed. A total of 380 units of completed questionnaires were returned to the researcher. This made the return rate to be 95%. Nevertheless, seven of the returned questionnaires were discarded because there were many missing values. The usable questionnaires were thus 373 (93.3%).

4.3 Data Screening

Prior to data analysis, all data were screened for better prediction power and to improve assessment of dimensionality. The screening included checking data for accuracy of entry, description of how missing values are handled, identification of outliers and evaluating statistical assumptions for multiple regression analyses which include normality, linearity, homoscedasticity, and independence of residuals (Hair et al., 2005).

4.3.1 Accuracy of Data Entry

Two methods were used to confirm the absence of abnormal data. Firstly, physical examination of the data files on the five-point scale and demographic data was done and it found no out-of-range value. Secondly, descriptive statistics confirmed that the values for all variables were within the expected range of 1 - 5. Table 4.1 shows the means and standard deviations of the variables in the study. A1 to A48 were items that described instructional leadership behavior, B1 to B11 were items for school climate while C1 to C12 were items for teacher efficacy. Meanwhile Table 4.2 exhibits the means and standard deviations of the variables of the study: 10 factors in instructional leadership behavior, 3 factors in school climate and teacher efficacy.

Table 4.1: Means and Standard Deviations of Items

Items	Mean	SD	Items	Mean	SD	Items	Mean	SD
A1	3.70	.81	A25	3.80	.80	B1	3.55	.87
A2	3.73	.77	A26	3.81	.79	B2	3.66	.77
A3	3.72	.76	A27	3.56	.82	B3	3.58	.80
A4	3.78	.73	A28	3.51	.90	B4	3.55	.79
A5	3.74	.75	A29	3.22	1.08	B5	3.40	.88
A6	3.64	.79	A30	3.15	1.03	B6	3.59	.99
A7	3.70	.81	A31	3.34	.96	B7	3.24	.75
A8	3.80	.80	A32	3.32	.93	B8	3.00	.94
A9	3.81	.80	A33	3.10	.99	B9	2.99	.93
A10	3.74	.83	A34	3.03	1.03	B10	3.17	.88
A11	3.70	.83	A35	4.10	.80	B11	3.66	.99
A12	3.79	.81	A36	4.01	.79			
A13	3.37	.82	A37	3.93	.81	C1	3.83	.85
A14	3.46	.78	A38	3.89	.81	C2	3.76	.78
A15	3.56	.84	A39	3.93	.84	C3	3.95	.84
A16	3.52	.86	A40	4.09	.79	C4	3.98	.84
A17	3.38	.92	A41	3.69	.85	C5	3.83	.83
A18	3.44	.88	A42	3.77	.85	C6	3.75	.86
A19	3.91	.76	A43	4.00	.84	C7	3.83	.95
A20	3.95	.70	A44	3.61	.91	C8	3.74	.84
A21	3.90	.74	A45	3.62	.88	C9	3.70	.83
A22	3.77	.85	A46	3.63	.86	C10	3.87	.84
A23	3.73	.77	A47	3.68	.85	C11	3.46	.90
A24	3.84	.80	A48	3.56	.91	C12	3.73	.81

Table 4.2: Means and standard deviations of the variables studied

Variable	Mean	Standard deviation
Instructional leadership		
Feedback	3.74	.65
Praise	3.47	.77
Suggestions	3.72	.64
Inquiry	3.41	.75
Action research	3.62	.78
Diverse instruction	3.93	.68
Encourage collaboration	3.75	.69
Teaching and learning	3.92	.66
Coaching	3.20	.85
Teamwork	3.29	.86
School climate		
Student relations	3.50	.63
School resources	3.24	.65
Collaboration	3.47	.75
Teacher efficacy	3.79	.68

4.3.2 Missing Data

Generally, the returned questionnaires were complete except 15 cases with randomly missing values were detected through frequency count of each variable. The examination of frequency count analysis showed that there were 11 cases with missing values in Section II - 10 cases with 1 missing value each and 1 case with 2 missing values. In Section III, there were 4 cases with 1 missing value while there was no missing value in Section IV. Table 4.3 shows the percentage of missing values of the variables in the study. The percentage of missing values for the

variables was smaller than 1%, ranging from .00% to .13%. A decision was made to retain cases with missing value by replacing the missing values with mean of the variables (Hair et al., 2005).

Table 4.3: Percentage of Missing Values for Variables

Variables	No. of missing value(s)	Percentage of missing values
Instructional leadership		
Feedback	3	.13
Praise	1	.07
Suggestions	1	.07
Inquiry	0	.00
Action research	1	.05
Diverse instruction	3	.09
Encourage collaboration	2	.09
Teaching and learning	0	.00
Coaching	1	.07
Teamwork	0	.00
School climate		
Student relations	1	.07
School resources	2	.13
Collaboration	1	.09
Teacher efficacy		
Classroom management	0	.00
Instructional strategies	0	.00
Student engagement	0	.00

4.3.3 Outliers

Outliers were identified from both a univariate and multivariate perspective. From the univariate perspective, Z score of variable was used for the identification of outlier. Cases with Z score greater than 4 were considered outliers (Hair et al., 2005). Nevertheless, there is no case of variable that exhibits Z score value greater than 4. When the data were assessed from the multivariate prospective, Mahalanobis D^2 values was used as the deciding factor. Cases with Mahalanobis D^2 value greater than the critical chi square value ($\chi^2_{.001,\ 14} = 36.12$) were regarded as outliers. From this analysis, a total of 11 cases were deleted, leaving 362 cases in the data base.

4.3.4 Assumptions Underlying Multivariate Analysis

Since this study utilized multiple regression analyses, the following assumptions: linearity, homoscedasticity, independence of residuals, and normality have to be met (Hair et al., 2005). Therefore, the data were evaluated for the above-mentioned assumptions. The following section reports results of the assessment of the assumptions underpinned the use of regression analyses.

4.3.4.1 Linearity, Homoscedasticity and Independence of Residuals

Residual plots were used to assess: 1) the linearity of the relationship between dependent and independent variables, 2) if the presence of variance is constant, and 3) if each predicted value is independent. The examination of the scatterplot of residuals against predicted values showed that residuals disperse randomly about zero with no clear relationship between the residuals and the predicted values (Figure 4.1). Apart from that, the normal plot of regression standardized residuals for the

dependent variable showed a relatively normal distribution (Figure 4.2). These observations indicated that the assumptions of linearity, homogeneity and independence of residuals were not violated.
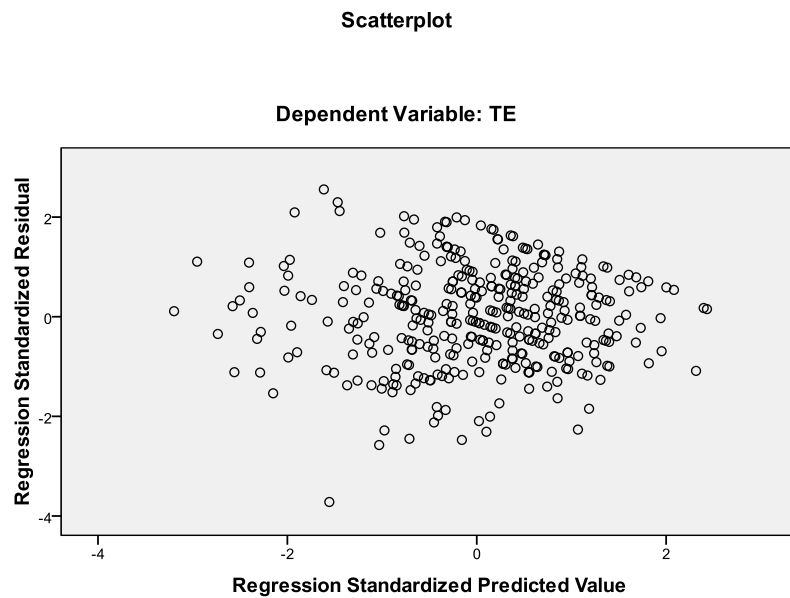
Scatterplot

Figure 4.1: Scatterplot of standardized residual against predicted value
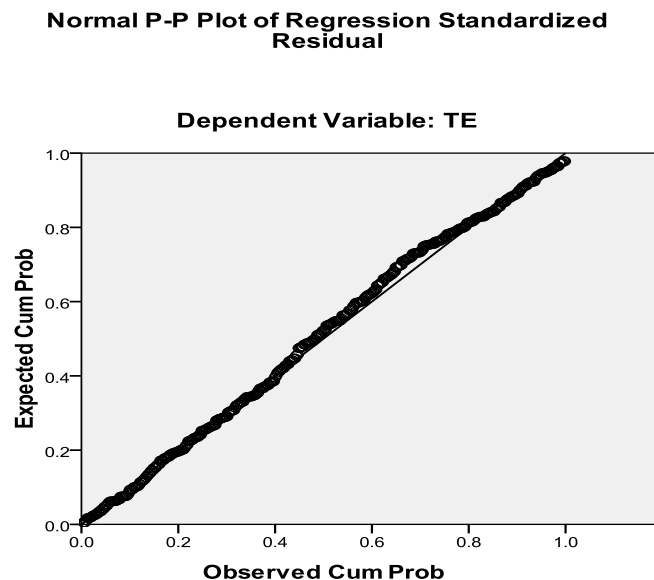
Figure 4.2: Normal probability plot of regression standardized residuals

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4.3.4.2 Normality

In addition to the normal probability plot, normality of the data was assessed using the following formula:

$$Z \text{ value} = \frac{\text{skewness}}{\sqrt{6}/N}$$

When the formula was used to calculate Z-score for all variables, some of the variables had Z-score exceeded the critical value of +/- 2.58 (p > .05). Thus, boxplot was used to identify extreme cases and subsequently remove. A total of 22 cases were identified as outliers and removed from the data base at this stage. After the removal, the final number of cases to be analysed was 340. Table 4.4 exhibits the value for skewness, kurtosis and Z-score of the variables after the removal of outliers. The results suggested that all variables of the study exhibit normal distribution, with values fall within the range of +/- 2.58, p < .05 (Hair et al., 2005).

4.4 Profile of Sample

4.4.1 Gender

Analysis of sample by gender revealed that a higher percentage of them were female. In terms of percentage, 25.6 % (n = 87) of the sample was male while 73.8% (n = 251) was female. There were 2 respondents (0.6%) who did not indicate their gender. Table 4.5 summarizes the composition of sample by gender.

Table 4.4: Values of skewness and kurtosis for variables

Variables	Skewness	Kurtosis	$z = \dfrac{skewness}{\sqrt{6/N}}$
Feedback	-.04	-.50	-.60
Praise	.06	-.35	.46
Suggestions	-.02	-.39	-.14
Inquiry	.04	-.38	.31
Action research	-.27	-.39	-2.01
Innovation	-.31	-.25	-2.33
Encourage collaboration	-.27	-.33	-2.04
Teaching and learning	-.26	-.13	-1.93
Coaching	.05	-.73	.41
Teamwork	-.32	-.55	-2.45
Student relations	-.24	.18	-1.83
School resources	.34	-.29	2.55
Collaboration	.16	-.51	1.23
Teacher efficacy	-.33	-.49	-2.48

Table 4.5: Distribution of Sample by Gender

Gender	Number	Percentage
Male	87	25.6
Female	251	73.8
Missing value	2	0.6
Total	340	100.0

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4.4.2 Length of Service

Going by the number of years of service, the highest percentage of teachers (43.8%, n = 149) has taught for between 10-19 years. The second highest group (25.6%, n = 87) had less than 10 years of teaching experience. This group was followed closely by those who had between 20-29 years of teaching experience (25.3%, n = 86). Those who have taught for more than 29 years accounted for 3.8% (n = 13) of the sample. A total of 5 teachers (1.5%) did not provide information about the length of their service. Table 4.6 shows the number and percentage of teachers by four categories of years of service.

Table 4.6: Profile of Teachers by the Number of Years of Service

Service (years)	Number	Percentage
<10	87	25.6
10 – 19	149	43.8
20 – 29	86	25.3
> 29	13	3.8
Missing value	5	1.5
Total	340	100.0

4.4.3 Highest Academic Attainment

A very high percentage of the teachers (87.1%, n = 296) had a Bachelor's Degree as the highest academic attainment. A small number of the teachers, 9.1% (n = 31) had a Master's Degree while 2.4% (n = 8) had a Diploma as the highest academic attainment. There were 2 teachers (0.6%) who mentioned certificate as the highest academic attainment. A total of 3 teachers (0.8%) did not give any response on

particulars about their highest academic attainment. The distribution of teachers by highest academic attainment is shown in Table 4.7.

Table 4.7: Distribution of Teachers by Highest Academic Attainment

Academic attainment	Number	Percentage
PhD	0	0.0
Master's Degree	31	9.1
Bachelor's Degree	296	87.1
Diploma	8	2.4
Certificate	2	0.6
Missing value	3	0.8
Total	340	100.0

4.5 Correlations between Variables of the Study

Bivariate correlation relationship was computed to examine the strength of correlation between variables of the study. Bivariate correlation is the pre-requisite for regression analysis. Apart from that, bivariate correlation also indicated the strength of relationship between two variables. As multivariate regression analysis is used for answering the research question in this study, correlation for all variables is determined. Regression analysis is possible when the independent variables correlate with each other and the dependent variables (Coakes et al., 2006). Correlations were computed for following groups of relationship: 1) among factors in talking with teacher to encourage reflection and, between the factors and school climate and teacher efficacy; 2) among factors in promoting teacher professional growth and, between the factors and school climate and teacher efficacy, 3) among factors in

school climate and between the factors and teacher efficacy, 4) between factors in instructional leadership behavior and, between the factors and school climate and teacher efficacy, and 5) between instructional leadership behavior, school climate and teacher efficacy.

Correlation analysis between factors in talking with teacher to encourage reflection showed that all factors correlated with each other significantly (Table 4.9). The correlation values ranged from the weakest, between giving praise, and using inquiry and soliciting advice and opinion, (r = .53, p < .05) to the strongest, between making suggestions and giving feedback, (r = .75, p < .05). The analysis also found all factors in talking with teacher to encourage reflection correlate significantly with school climate. The significant relationship ranged between .21 (between using inquiry and soliciting advice and opinion, and school climate) and .34 (between giving feedback and school climate), p < .05. The same analysis between factors in talking with teachers to encourage reflection and teacher efficacy found all factors had significant relationship with teacher efficacy. The strongest significant relationship was between giving feedback and teacher efficacy, (r = .59, p < .05) while the weakest was between using inquiry and soliciting advice and opinion, and teacher efficacy, (r = .42, p < .05).

Table 4.9: Correlations between Factors in Talking with Teacher to Encourage
Reflection, School Climate and Teacher Efficacy

Variable	[1]	[2]	[3]	[4]	[5]	[6]
Giving feedback [1]						
Giving praise [2]	.61*					
Making suggestions [3]	.75*	.55*				
Using inquiry [4]	.56*	.53*	.57*			
School climate [5]	.34*	.31*	.30*	.21*		
Teacher efficacy [6]	.59*	.44*	.52*	.42*	.24*	

*p < .05

Correlation analysis between factors in promoting teacher professional growth showed that all factors correlated with each other significantly (Table 4.10). The correlation values ranged from the weakest, between emphasizing the study of teaching and learning, and developing coaching relationship among teachers, (r = .43, p < .05) to the strongest, between developing coaching relationship among teachers and initiating teamwork, (r = .73, p < .05). The analysis also found all factors in promoting teacher professional growth correlate significantly with school climate. The significant relationship ranged between .16 (between initiating teamwork and school climate) and .38 (between encouraging and supporting diverse teaching and learning approach, and school climate), (p < .05). The same analysis between factors in promoting teacher professional growth and teacher efficacy found all factors had significant relationship with teacher efficacy. The strongest significant relationship was between encouraging and supporting diverse teaching and learning approach, and teacher efficacy, (r = .57, p < .05) while the weakest was between developing coaching relationship among teachers and teacher efficacy, (r = .39, p < .05).

Table 4.10: Correlations between Factors in Promoting Teacher Professional Growth, School Climate and Teacher Efficacy

Variable	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Doing action research [1]								
Encouraging change [2]	.64*							
Supporting collaboration effort [3]	.55*	.61*						
Study of teaching and learning [4]	.57*	.55*	.55*					
Developing coaching relationship [5]	.64*	.57*	.52*	.44*				
Initiating teamwork [6]	.61*	.54*	.55*	.44*	.73*			
School climate [7]	.31*	.38*	.37*	.37*	.18*	.16*		
Teacher efficacy [8]	.48*	.57*	.46*	.40*	.39*	.41*	.24*	

*p < .05

When correlation analysis was performed on factors in school climate, the results showed that all factors correlated with each other significantly (Table 4.11). The correlation values ranged from the weakest, between student relations and collaboration, (r = .16, p < .05) to the strongest, between school resources and collaboration, (r = .38, p < .05). The analysis between factors in school climate and teacher efficacy found that the strongest correlation was between student relations and teacher efficacy, (r = .26, p < .05). Another significant relationship was between collaboration and teacher efficacy, (r = .18, p < .05). The analysis found the relationship between school resources and teacher efficacy to be not significant, (p > .05).

Table 4.11: Correlations between Factors in School Climate and Teacher Efficacy

Variable	[1]	[2]	[3]	[4]
Student relations [1]				
School resources [2]	.19*			
Collaboration [3]	.16*	.38*		
Teacher efficacy [4]	.26*	.06	.18*	

*p < .05, p > .05

The results of correlation analysis for instructional leadership behavior factors, school climate and teacher efficacy are as shown in Table 4.12. Talking with teacher to encourage reflection correlated with promoting teacher professional growth significantly, (r = .78, p < .05). These two factors also correlated significantly with school climate and teacher efficacy. The strength of correlation between school climate and talking with teacher to encourage reflection, and between school climate and promoting teacher professional growth were (r = .36, p < .05) and (r = .37, p < .05) respectively. The correlation between instructional leadership behavior factors and teacher efficacy ranged between .58 and .61, p < .05 (Table 4.12).

Table 4.12: Correlations between Factors in Instructional Leadership Behavior, School Climate and Teacher Efficacy

Variable	[1]	[2]	[3]	[4]
Talking with teacher to encourage reflection [1]				
Promoting teacher professional growth [2]	.78*			
School climate[3]	.36*	.37*		
Teacher efficacy [4]	.61*	.58*	.24*	

*p < .05

When correlation analysis was performed on the three main variables of the study: instructional leadership behavior, school climate and teacher efficacy, the results of correlation analysis found that all the variables correlated with each other significantly. The correlation between instructional leadership behavior and teacher efficacy was positive, $(r = .63, p < .05)$ (Table 4.13). The analysis between instructional leadership behavior and school climate also had similar results, albeit at lower strength, $(r = .39, p < .05)$. The correlation between school climate and teacher efficacy was also significant, $(r = .24, p < .05)$.

Table 4.13: Correlations between Instructional Leadership Behavior, School Climate and Teacher Efficacy

Variable	[1]	[2]	[3]
Instructional leadership behavior[1]			
School climate [2]	.39*		
Teacher efficacy [3]	.63*	.24*	

*p < .05

4.6 Findings Based on Research Questions

There were five research questions in the study. This section attempts to answer all the research questions one by one through the use of multiple regression analysis.

4.6.1 Research Question 2

Research Question 2: Which factors in talking with teachers to encourage reflection and promoting teacher professional growth are predictors of school climate in secondary schools?

Two hypotheses that correspond to the above-mentioned research question were constructed.

H_A1: Factors in talking with teachers to encourage reflection, namely making suggestions, giving feedback, giving praise, and using inquiry and soliciting advice and opinion, are predictors of school climate in secondary schools

H_A2: Factors in promoting teacher professional growth, namely emphasizing the study of teaching and learning, supporting collaboration effort, developing coaching relationship among teachers, encouraging and supporting diverse teaching and learning approach, initiating teamwork, and doing action research to inform decision making, are predictors of school climate in secondary schools

In order to test H_A1, stepwise regression analysis that involved the inclusion of four factors in talking with teachers to encourage reflection, namely giving feedback, giving praise, making suggestion, and using inquiry and soliciting advice and opinion as predictors of school climate were computed. The statistical analysis produced two models (Table 4.14). The chosen model had the statistics: ($R = .37$, $R^2 = .14$, Adjusted $R^2 = .13$, standard error $= 4.75$, $p < .05$) (Table 4.14). In the chosen model, two of the four factors in talking with teachers to encourage reflection were found to be significant predictors, ($F_{(2,337)} = 26.14$, $p < .05$). The first significant predictor was the behavior of principal giving feedback, ($\beta = .24$, $t = 3.72$, $p < .05$). The $\beta = .24$ value meant that for every unit of increase in giving feedback, there was a .24 unit of increase in school climate. The second significant predictor for school climate was the behavior of principal giving praise, ($\beta = .17$, $t = 2.66$, $p < .05$). This value indicated that one unit of increase in giving praise corresponded

with .17 unit of increase in school climate. Together, giving feedback and giving praise explained 14% of variance in school climate, in which giving feedback contributed 12% while giving praise 2% (Table 4.15). The other two factors in talking with teachers to encourage reflection, namely making suggestions, and using inquiry and soliciting advice and opinion failed to enter the equation as the predictors of school climate, as indicated by the non-significant t-value (p >.05). Hence, based on the statistical analysis results, H_A1 was partially supported. Only two of the factors, giving feedback and giving praise, were significant predictors of school climate.

The relationship between school climate and factors in talking with teacher to promote reflection formed a model as below:

School Climate = 26.66 + .24 (feedback) + .17 (praise) + .07 (suggestion)
                          (3.72)*   (2.66)*   (.92)

                 - .01 (inquiry)
                    (-.25)

Table 4.14: Models Produced from Stepwise Regression Analysis Results: Factors in Talking with Teacher to Encourage Reflection as Predictors of School Climate

Model	R	R^2	Adjusted R^2	SE	R^2 change	F	p
1	.34[a]	.12	.12	4.79	.12	44.40	.00
2	.37[b]	.14	.13	4.75	.02	7.08	.00

a. Predictors: (Constant), giving feedback
b. Predictors: (Constant), giving feedback, giving praise

Table 4.15: Stepwise Multiple Regression Analysis Results: Factors in Talking with Teacher to Encourage Reflection as Predictors of School Climate

Factors in talking with teacher to encourage reflection	B	β	t	p	Contribution
Constant	26.66		17.30	.00	
Giving feedback	.23	.24	3.72	.00	12%
Giving praise	.28	.17	2.66	.00	2%
Suggestions		.07	.92	.35	
Inquiry		-.01	-.25	.81	

Multiple R   = .37
R^2 = .14
Adjusted R^2 = .13
Standard Error   = 4.75
F   = 26.14
Significant   = .00

For testing H_A2, the six factors in promoting teacher professional growth: doing action research to inform decision making, encouraging and supporting diverse teaching and learning approach, supporting collaboration effort, emphasizing the study of teaching and learning, developing coaching relationship among teachers, and initiating teamwork were regressed using stepwise technique. It produced four models (Table 4.16). The chosen model (Model 4) showed R = .46, R^2 = .21, Adjusted R^2 = .20, standard error = 4.55, p < .05 (Table 4.16). Four of the six factors in promoting teacher professional growth: encouraging and supporting diverse teaching and learning approach, emphasizing the study of teaching and learning, supporting collaboration, and initiating teamwork were identified as significant predictors of school climate, (F (4,335) = 21.95, p < .05). The first predictor, encouraging and supporting diverse teaching and learning approach, showed β = .22, t = 3.23, p < .05. The β value was .22, which means that every unit increase in the principal behavior encouraging and supporting diverse teaching and learning

approach caused .22 unit of increase in school climate. Specifically, this factor contributed 14 % of the variance in school climate. The second predictor, emphasizing the study of teaching and learning contributed 4% variance in school climate, (β = .21, t = 3.30, p < .05). The β value which is .21 means that a unit of increase in the behavior of principal emphasizing the study of teaching and learning corresponded to .21 unit of increase in school climate. The third significant predictor, supporting collaboration effort, contributed 1% variance in school climate, (β = .22, t = 3.13, p < .05). The last significant predictor, initiating teamwork, contributed 1% of the variance in school climate, (β = -.17, t = -2.70, p < .05). The negative β value (β = -.17) meant that a unit increase in initiating teamwork caused .17 unit decrease in school climate. The other two factors: doing action research to inform decision making, and developing coaching relationship among teachers failed to meet the selection criteria as the predictor of school climate, as indicated by the non-significant t-value (p > .05). Table 4.17 exhibits details of the statistics.

Based on the statistical analysis, H_A2 was partially supported. Only four of the factors in promoting teacher professional growth: encouraging and supporting diverse teaching and learning approach, emphasizing the study of teaching and learning, supporting collaboration effort, and initiating teamwork were predictors of school climate.

The model for the relationship between school climate and factors in promoting teacher professional growth was summarized as follows:

School Climate = 22.21 + .22 (change) + .21 (T&L) + .22 (collaboration)
$\qquad\qquad\qquad\quad$ (3.23)* $\qquad$ (3.30)* $\qquad\quad$ (3.13)*

$\qquad\qquad\qquad$ - .17 (teamwork) + .08 (research) - .06 (coaching)
$\qquad\qquad\qquad\quad$ (-.2.70)* $\qquad\quad$ (1.04) $\qquad\quad$ (-.80)

Table 4.16: Models Produced from Stepwise Regression Analysis Results: Factors in Promoting Teacher Professional Growth as Predictors of School Climate

Model	R	R^2	Adjusted R^2	SE	R^2 change	F	p
1	.37[a]	.14	.14	4.73	.14	54.00	.00
2	.42[b]	.18	.17	4.63	.04	15.64	.00
3	.44[c]	.19	.18	4.59	.01	6.03	.01
4	.46[d]	.21	.20	4.55	.01	7.23	.01

a. Predictors: (Constant), encouraging and supporting diverse teaching and learning approach
b. Predictors: (Constant), encouraging and supporting diverse teaching and learning approach, emphasizing the study of teaching and learning
c. Predictors: (Constant), encouraging and supporting diverse teaching and learning approach, emphasizing the study of teaching and learning, supporting collaboration effort
d. Predictors: (Constant), encouraging and supporting diverse teaching and learning approach, emphasizing the study of teaching and learning, supporting collaboration effort, initiating teamwork

Table 4.17: Stepwise Multiple Regression Analysis: Factors in Promoting Teacher Professional Growth as Predictors of School Climate

Promoting teacher professional growth	B	β	t	p	Contribution
Constant	22.21		12.99	.00	
Diverse teaching and learning	.18	.22	3.23	.00	14%
Study of teaching and learning	.53	.21	3.30	.00	4%
Supporting collaboration	.26	.22	3.13	.00	1%
Teamwork	-.33	-.17	-2.70	.00	1%
Action research		.08	1.04	.30	
Coaching		-.06	-.80	.40	

Multiple R   = .46
Multiple R^2 = .21
Adjusted R^2 = .20
Standard Error   = 4.55
F   = 21.95
Significant   = .00

4.6.2 Research Question 3

Research Question 3: Which factors in talking with teacher to encourage reflection and promoting teacher professional growth are predictors of teacher efficacy in secondary schools?

Parallel to Research Question 2, two hypotheses were postulated as follows:

H_A3: Factors in talking with teacher to encourage reflection, namely making suggestions, giving feedback, giving praise and using inquiry and soliciting advice/opinion, are predictors of teacher efficacy in secondary schools

H_A4: Factors in promoting teacher professional growth, namely emphasizing the study of teaching and learning, supporting collaboration effort, developing

coaching relationship among teachers, encouraging and supporting diverse

teaching and learning approach, initiating teamwork, and doing action

research to inform decision making, are predictors of teacher efficacy in

secondary schools

Stepwise multiple regression analysis involving giving feedback, giving praise, making suggestion, and using inquiry and soliciting advice and opinion as predictors of teacher efficacy produced two models (Table 4.18). The chosen model showed $R = .61$, $R^2 = .37$, Adjusted $R^2 = .37$, standard error = 6.50, $p < .05$ (Table 4.18). Two of the factors in talking with teachers to encourage reflection were significant predictors of teacher efficacy, $(F (2,337) = 96.67, p < .05)$. The first significant predictor, behavior of principal giving feedback, explained 36% of variance in teacher efficacy, $(\beta = .46, t = 7.00, p < .05)$. The corresponding $\beta = .46$ meant that a unit of increase in the behavior of principal giving feedback caused .46 unit of increase in teacher efficacy. The second significant predictor was making suggestion which explains 1% of variance in teacher efficacy, $(\beta = .17, t = 2.62, p < .05)$. The β value for making suggestion was .17. This indicated that a unit of increase in the behavior of principal making suggestion caused .17 unit of increase in teacher efficacy. Together, giving feedback and making suggestion explained 37% of the variance in teacher efficacy, with the former variable explaining 36% of the variance and the latter 1%. Two other factors: giving praise, and using inquiry and soliciting advice and opinion were not significant predictors of teacher efficacy, as indicated by the non-significant t-value (p > .05). Table 4.19 summarized the details of the

statistics. In conclusion, H_A3 was partially supported. Only two factors, giving feedback, and making suggestion were significant predictors of teacher efficacy.

The relationship between teacher efficacy and factors in talking with teacher to promote reflection is shown in the following formula:

Teacher efficacy = 15.49 + .46 (feedback) + .17 (suggestion) + .11 (praise)

$\qquad\qquad\qquad\quad$ (7.00)* $\qquad\quad$ (2.62)* $\qquad\qquad$ (1.95)

$\qquad\qquad\qquad\qquad$ + .10 (inquiry)

$\qquad\qquad\qquad\qquad\quad$ (1.90)

Table 4.18: Models Produced from Stepwise Regression Analysis Results: Factors in Talking with Teacher to Encourage Reflection as Predictors of Teacher Efficacy

Model	R	R^2	Adjusted R^2	SE	R^2 change	F	p
1	.60[a]	.36	.35	6.58	.36	183.33	.00
2	.61[b]	.37	.37	6.52	.01	6.84	.01

a. Predictors: (Constant), giving feedback
b. Predictors: (Constant), giving feedback, making suggestion

Table 4.19: Stepwise Multiple Regression Analysis: Factors in Talking With Teacher to Encourage Reflection as Predictors of Teacher Efficacy

Factors in talking with teacher to encourage reflection	B	β	t	p	Contribution
Constant	15.49		7.00	.00	
Feedback	.73	.46	7.00	.00	36%
Suggestions	.56	.17	2.62	.00	1%
Praise		.11	1.95	.06	
Inquiry		.10	1.90	.06	

Multiple R $\quad$ =.61
R^2 $\qquad\qquad$ =.37
Adjusted R^2 $\quad$ =.37
Standard Error $\;$ = 6.52
F $\qquad\qquad$ =96.67
Significant $\quad$ =.00

When factors in promoting teacher professional growth: doing action research, encouraging and supporting diverse teaching and learning approach, supporting collaboration effort, emphasizing the study of teaching and learning, developing coaching relationship, and initiating teamwork were regressed in stepwise technique, it produced three models (Table 4.20). The chosen model (Model 3) showed R = .61, R^2 = .36, Adjusted R^2 = .36, standard error = 6.54, p < .05 (Table 4.20). Three of the factors in promoting teacher professional growth were found to be significant predictors of teacher efficacy, (F (3,336) = 63.44, p < .05). The first significant predictor, encouraging and supporting diverse teaching and learning approach explained 33% variance in teacher efficacy, with (β = .40, t = 6.34, p < .05). The corresponding β = .40 meant that a unit of increase in the behavior of principal encouraging and supporting caused .40 unit of increase in teacher efficacy. The second significant predictor, doing action research to make inform decision, explained 2 % of variance in teacher efficacy, (β = .16, t = 2.76, p < .05). Every unit of increase in the behavior of principal doing action research to inform decision making corresponded with a .16 unit of increase in teacher efficacy. The third significant predictor was supporting collaboration effort which explained 1% of variance in teacher efficacy, (β = .13, t = 2.27, p < .05). The β value for supporting collaboration effort was .13. This indicated that a unit of increase in the behavior of principal supporting collaboration effort caused .13 unit of increase in teacher efficacy. The contribution of variance by encouraging and supporting diverse teaching and learning approach, doing action research to inform decision making, and supporting collaboration effort on teacher efficacy were 33%, 2% and 1% respectively. Together these three variables explained 37% of the variance in teacher

efficacy (Table 4.21). Three other factors in promoting teacher professional growth: emphasizing the study of teaching and learning, developing coaching relationship among teachers and initiating teamwork were not significant predictors of teacher efficacy, as indicated by the non-significant t-value ($p > .05$). In a nutshell, H_A4 was partially supported.

The model for the relationship between teacher efficacy and factors in promoting teacher professional growth is as below:

Teacher efficacy = 14.88 + .40 (change) + .16 (research) + .13 (collaboration)
                                      (6.34)*   (2.76)*   (2.27)*

            + .04 (T&L) + .01 (coaching) + .04 (teamwork)
               (.60)   (.27)   (.71)

Table 4.20: Models Produced from Stepwise Regression Analysis Results: Factors in Promoting Teacher Professional Growth as Predictors of Teacher Efficacy

Model	R	R^2	Adjusted R^2	SE	R^2 change	F	p
1	.58[a]	.33	.33	6.69	.33	166.59	.00
2	.60[b]	.36	.35	6.58	.02	11.97	.00
3	.61[c]	.36	.36	6.54	.01	5.14	.02

  a. Predictors: (Constant), encouraging and supporting diverse teaching and learning approach
  b. Predictors: (Constant), encouraging and supporting diverse teaching and learning approach, doing action research to inform decision making
  c. Predictors: (Constant), encouraging and supporting diverse teaching and learning approach, doing action research to inform decision making, supporting collaboration effort

Table 4.21: Stepwise Multiple Regression Analysis: Factors in Promoting Teacher Professional Growth as Predictors of Teacher Efficacy

Factors in promoting teacher professional growth	B	β	t	p	Contribution
Constant	14.88		6.54	.00	
Diverse teaching and learning	.53	.40	6.34	.00	33%
Action research	.34	.16	2.76	.00	2%
Supporting collaboration	.25	.13	2.27	.02	1%
Study of teaching and learning		.04	.67	.55	
Coaching		.01	.27	.80	
Teamwork		.04	.71	.48	

Multiple R   = .61
R^2 = .36
Adjusted R^2 = .36
Standard Error = 6.54
F   = 63.44
Significant   = .00

4.6.3 Research Question 4

Research Question 4: Which factors in instructional leadership behavior are the predictors of school climate and teacher efficacy in secondary schools?

In relation to Research Question 3, two hypotheses were postulated.

H_A5: Factors in instructional leadership behavior, namely talking with teachers to encourage reflection and promoting teacher professional growth, are the predictors of school climate in secondary schools

H_A6: Factors in instructional leadership behavior, namely talking with teachers to encourage reflection and promoting teacher professional growth, are the predictors of teacher efficacy in secondary schools

Regression analysis involving the factors in instructional leadership behavior: talking with teachers to encourage reflection, and promoting teacher professional growth as predictors of teacher efficacy produced two models (Table 4.22). Out of the two models, the regression model chosen (Model 2) showed the following statistics: R = .39, R^2 = .15, Adjusted R^2 = .15, standard error = 4.69, p < .05 (Table 4.22). Both factors in instructional leadership behavior were found to be significant predictors of school climate, (F (2,337) = 30.42, p < .05). The first significant predictor for school climate was promoting teacher professional growth, (β = .23, t = 2.90, p < .05). Thus, one unit of increase in the behavior of principal promoting teacher professional growth corresponded with .23 unit of increase in school climate. The second significant predictor was talking with teacher to encourage reflection, (β = .18, t = 2.26, p < .05). The β = .18 value meant that for every unit of increase in the behavior of principal talking with teacher to encourage reflection, there was a .18 unit of increase in school climate. Promoting teacher professional growth contributed 14% while talking with teacher to encourage reflection 1% to the variance in school climate. Details of the statistics are shown in Table 4.23. Hence, based on the statistical analysis results, $H_A 5$ was supported.

The relationship between school climate and the factors in instructional leadership behavior formed a model as below:

School climate = 24.50 + .23 (talking) + .18 (growth)
                         (2.90)*   (2.26)*

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Table 4.22: Models Produced from Stepwise Regression Analysis Results: Factors in Instructional Leadership Behavior as Predictors of School Climate

Model	R	R^2	Adjusted R^2	SE	R^2 change	F	p
1	.37[a]	.14	.14	4.72	.14	55.07	.00
2	.39[b]	.15	.15	4.69	.01	5.09	.03

   a. Predictors: (Constant), promoting teacher professional growth
   b. Predictors: (Constant), promoting teacher professional growth, talking with teacher to encourage reflection

Table 4.23: Stepwise Multiple Regression Analysis: Factors in Instructional Leadership Behavior as Predictors of School Climate

Instructional leadership behavior	B	β	t	p	Contribution
Constant	24.50		14.50	.00	
Promoting teacher professional growth	.07	.23	2.90	.00	14%
Talking with teacher to encourage reflection	.09	.18	2.26	.03	1%

Multiple R   = .39
R^2 = .15
Adjusted R^2 = .15
Standard Error = 4.69
F   = 30.42
Significant   = .00

Regression analysis using the stepwise technique involving the factors in instructional leadership behavior: talking with teachers to encourage reflection and promoting teacher professional growth as predictors of teacher efficacy produced two models (Table 4.24). The regression model chosen (Model 2) had the following statistics: R = .63, R^2 = .40, Adjusted R^2 = .40, standard error = 6.34, p < .05 (Table 4.24). Both factors in instructional leadership behavior were found to be significant predictors of teacher efficacy, (F (2,337) = 112.22, p < .05). The first significant predictor was talking with teacher to encourage reflection, (β = .39, t = 5.74, p < .05). The β = .39 value meant that for every unit if increase in the behavior

of principal talking with teacher to encourage reflection, there was a .39 unit of increase in teacher efficacy. The second significant predictor for teacher efficacy was promoting teacher professional growth, (β = .28, t = 4.16, p < .05). Thus, one unit of increase in the behavior of principal promoting teacher professional growth corresponded with .28 unit of increase in teacher efficacy. Together both factor contribute 40% variance of teacher efficacy, with talking with teacher to encourage reflection contributed 37% while promoting teacher professional growth 3% variance. Table 4.25 showed details of the statistical results. Hence, based on the statistical analysis H_A6 was supported.

The relationship between teacher efficacy and factors in instructional leadership behavior is summarized in a model as follows:

Teacher efficacy = 11.63 + .39 (talking) + .28 (reflection)
                        (5.74)*   (4.16)*

Table 4.24: Models Produced from Stepwise Regression Analysis Results: Factors in Instructional Leadership Behavior as Predictors of Teacher Efficacy

Model	R	R^2	Adjusted R^2	SE	R^2 change	F	p
1	.61[a]	.37	.37	6.49	.37	197.66	.00
2	.63[b]	.40	.40	6.34	.03	17.27	.00

   a. Predictors: (Constant), talking with teacher to encourage reflection
   b. Predictors: (Constant), talking with teacher to encourage reflection, promoting teacher professional growth

Table 4.25: Stepwise Multiple Regression Analysis: Factors in Instructional Leadership Behavior as Predictors of Teacher Efficacy

Instructional leadership behavior	B	β	t	p	Contribution
Constant	11.63		5.10	.00	
Talking with teacher to encourage reflection	.30	.39	5.74	.00	37%
Promoting teacher professional growth	.13	.28	4.16	.00	3%

Multiple R   = .63
R^2 = .40
Adjusted R^2 = .40
Standard Error   = 6.34
F   = 112.22
Significant   = .00

4.6.4 Research Question 5

Research Question 5: Which factors in school climate are the predictors of teacher efficacy in secondary schools?

H_A7: Factors in school climate, namely collaboration, student relations and school resources, are the predictors of teacher efficacy in secondary schools

When stepwise regression analysis was computed on the data to test which of the school climate factors are predictors of teacher efficacy in secondary schools, the results showed that student relation and collaboration are significant predictors of teacher efficacy, ($F_{(2, 337)} = 16.01$, $p < .05$). Stepwise regression analysis produced two models (Table 4.26). The chosen model (Model 2) had the following statistics: R = .30, R^2 = .09, Adjusted R^2 = .09, standard error = 7.82, $p < .05$ (Table 4.26). Of the two factors, student relation was a stronger predictor of teacher efficacy, ($\beta = .24$, t = 4.51, $p < .05$). $\beta = .24$ meant that a unit of increase in student relations effected

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.24 unit of increase in teacher efficacy. The factor explained 7% of the variance in teacher efficacy. The second factor, collaboration, explained 2% of the variance in teacher efficacy, (β = .14, t = 2.67, p < .05). A unit of increase in collaboration caused .14 unit of increase in teacher efficacy. Together student relations and collaboration explained 9% variance in teacher efficacy. School resources was not a significant predictor of teacher efficacy, as indicated by non-significant t value (p >.05). Details of the statistics are illustrated in Table 4.27. Hence, H_A7 was partially supported.

The relationship between factors in school climate and teacher efficacy formed a model as follows:

Teacher efficacy = 29.42 + .24 (student) + .14 (collaboration) - .04 (resource)
$\qquad\qquad\qquad\qquad\quad$ (4.51)* $\qquad\qquad$ (2.67)* $\qquad\qquad$ (-.74)

Table 4.26: Models Produced from Stepwise Regression Analysis Results: Factors in School Climate as Predictors of Teacher Efficacy

Model	R	R^2	Adjusted R^2	SE	R^2 change	F	p
1	.26[a]	.07	.07	7.89	.07	24.47	.00
2	.30[b]	.09	.09	7.82	.02	7.11	.01

   a. Predictors: (Constant), Student relations
   b. Predictors: (Constant), Student relations, Collaboration

Table 4.27: Stepwise Multiple Regression Analysis: Factors in School Climate as Predictors of Teacher Efficacy

School climate	B	β	t	p	Contribution
Constant	29.42		10.22	.00	
Student relations	.77	.24	4.51	.00	7%
Collaboration	.51	.14	2.67	.00	2%
School resources		-.04	-.74	.46	

Multiple R   = .30
R^2 = .09
Adjusted R^2 = .09
Standard Error = 7.82
F   = 16.01
Significant   = .00

4.6.5 Research Question 6

Research Question 6: Does school climate mediate the relationship between instructional leadership and teacher efficacy?

H_A8: School climate mediates the relationship between instructional leadership and teacher efficacy

To examine the hypothesized statement, hierarchical regression analysis was computed assuming school climate as a mediator in the relationship between instructional leadership behavior and teacher efficacy. Hierarchical regression results are shown in Table 4.28. The analysis in step one indicated that instructional leadership behavior was a significant predictor of teacher efficacy, R = .63, R^2 =.39, Adjusted R^2 = .39, standard error = 6.36, p < .05. The results showed that instructional leadership behavior explained 39% of the variance in teacher efficacy,

(F (1,338) = 217.24, p < .05). Thus, it inferred that instructional leadership behavior was positively related to teacher efficacy, (β = .63, t = 13.58, p < .05) (Table 4.29). β = .63 meant that a unit increase in instructional leadership behavior caused .63 unit of increase in teacher efficacy.

When school climate was entered to the equation in step two, R^2 change = .00, F change (2, 337) = .00, p > .05. These results suggested that the influence of school climate on teacher efficacy was insignificant, (β = .00,   t = -.09, p > .05). In other words, school climate failed to be a significant mediator for the relationship between instructional leadership behavior and teacher efficacy. Therefore, H_A8 was not supported.

Table 4.28: Models Produced from Hierarchical Regression Analysis: School Climate as the Mediator of the Relationship between Instructional Leadership Behavior and Teacher Efficacy

Model	R	R^2	Adjusted R^2	SE	R^2 change	F	p
1	.63[a]	.39	.39	6.38	.39	217.24	.00
2	.63[b]	.39	.39	6.38	.00	.01	.93

  a. Predictors: (Constant), Instructional leadership behavior
  b. Predictors: (Constant), Instructional leadership behavior, School climate

Table 4.29: Hierarchical Regression Analysis Using School Climate as the Mediator in the Relationship between Instructional Leadership Behavior and Teacher Efficacy

Model		B	SE	β	t	p
Step 1	Constant	12.12	2.29		5.30	.00
(Model 1)	IL	.19	.01	.63	14.74	.00
Step 2	Constant	12.28	2.93		4.20	.00
(Model 2)	IL	.19	.01	.63	13.58	.00
	SC	-.01	.07	-.01	-.09	.93

IL = Instructional leadership behavior
SC = School climate

4.7 Summary

This chapter reports the findings of the study which investigated the relationship between three main constructs of the study namely instructional leadership behavior, school climate and teacher efficacy.

The results found that all four factors in talking with teachers to promote reflection correlated significantly with each other and the dependent variables of the study. The same pattern was true for factors in promoting teacher professional growth. The two factors in instructional leadership behavior, talking with teachers to promote reflection and promoting teacher professional growth, were also found to correlate with each other and the dependent variables. The three factors in school climate which constitute the mediator were found to correlate with each other significantly. Two of the factors, student relations and collaboration, correlated with teacher efficacy significantly. However, the relationship of the third factor, school resources, with teacher efficacy was not significant.

A total of eight hypotheses were formulated to answer the research questions of the study. For Research Question 1, hypothesis H_A1 tested the possibility of factors in talking with teachers to encourage reflection as predictors of school climate. The results of stepwise multiple regression analysis found that the hypothesis was partially supported. The behaviors of principal giving feedback and giving praise were found to be predictors of school climate. These two variables explained 14% of the variance in school climate ($p < .05$). H_A2 tested the possibility of factors in promoting teacher professional growth as predictors of school climate. Stepwise regression analysis found the behaviors of principal encouraging and supporting diverse teaching and learning approach, emphasizing the study of teaching and learning, supporting collaboration effort, and initiating teamwork to be significant predictors of school climate. The former three instructional leadership behavior factors contributed to an increase in school climate while the last factor caused a decrease in school climate. These variables contributed 20% of the variance in school climate ($p < .05$).

For Research Question 2, two hypotheses were formulated to examine if factors in talking with teachers to encourage reflection and promoting teacher professional growth are predictors of teacher efficacy. Both hypotheses were partially supported. The behaviors of principal giving feedback and making suggestions were found to be significant predictors of teacher efficacy and they contributed 37% of the variance in teacher efficacy ($p < .05$). Meanwhile factors in the promoting teacher professional growth dimension namely, encouraging and supporting diverse teaching and learning approach, doing action research to inform decision making, and supporting

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collaboration were found to be significant predictors of teacher efficacy. These variables explained 36% of the variance in teacher efficacy ($p < .05$).

For Research Question 3, H_A3 and H_A4 were formulated to test the possibility of talking with teachers to encourage reflection and promoting teacher professional growth as predictors of school climate and teacher efficacy. Stepwise multiple regression analysis found both hypotheses supported. Both talking with teachers to encourage reflection and promoting teacher professional growth were significant predictors of school climate. They explained 15% of the variance in school climate ($p < .05$). Similarly, both the variables explained 40% of the variance in teacher efficacy.

With regard to Research Question 4, the hypothesis (H_A5) tested the possibility of factors in school climate namely, student relations, school resources and collaboration as predictors of teacher efficacy. Stepwise multiple regression analysis results indicated that the hypothesis was partially supported. Student relations and collaboration were significant predictors of teacher efficacy. Nevertheless, school resources failed to be significant predictor of teacher efficacy. The two significant factors in school climate explained 9% of the variance in teacher efficacy.

Finally, for Research Question 5, hierarchical regression analysis was computed to test if school climate was a mediator for the relationship between instructional leadership behavior and teacher efficacy. Statistical analysis results showed that school climate failed to be a mediator for the relationship between instructional

leadership behavior and teacher efficacy. Thus, the statistical results suggested that instructional leadership behavior had a direct effect on teacher efficacy. Table 4.30 summarizes the results of hypotheses tested in the current study.

Table 4.30: Summary of Hypotheses Testing

No	Hypothesis statements	Results
1	H_A1: Factors in talking with teacher to encourage reflection are predictors of school climate in secondary schools	Partially supported
2	H_A2: Factors in promoting teacher professional growth are predictors of school climate in secondary schools	Partially supported
3	H_A3: Factors in talking with teacher to encourage reflection are predictors of teacher efficacy in secondary schools	Partially supported
4	H_A4: Factors in promoting teacher professional growth are predictors of teacher efficacy in secondary schools	Partially supported
5	H_A5: Factors in instructional leadership behavior are predictors of school climate in secondary schools	Partially supported
6	H_A6: Factors in instructional leadership behavior are predictors of teacher efficacy in secondary schools	Supported
7	H_A7: Factors in school climate are predictors of teacher efficacy in secondary schools	Supported
8	H_A8: School climate mediates the relationship between instructional leadership and teacher efficacy	Failed to support

CHAPTER FIVE
DISCUSSION, IMPLICATIONS AND SUGGESTIONS

5.1 Introduction

This chapter discusses the findings of the study. It begins with research summary, continues with the discussion that centers on the three main variables of the study: instructional leadership behaviors, teacher efficacy and school climate, and the relationships between these variables. The chapter also discusses implications of the findings for theory and practice. Recommendations for future research are then proposed.

5.2 Research Summary

The purpose of this study was to investigate the relationship between instructional leadership behaviors, school climate and teacher efficacy in secondary schools in Kedah. Five research questions were formulated to examine the influence of instructional leadership behaviors on school climate and teacher efficacy. From these five research questions, a total of eight hypotheses were derived.

The research questions were addressed by gathering information from teachers using three different questionnaires: 1) instructional leadership behavior questionnaire, 2) school climate questionnaire, and 3) teacher efficacy questionnaire. The survey was purely quantitative in nature. Stratified systematic sampling technique was used to identify respondents selected from secondary schools located at eight different districts throughout the state of Kedah. Before the questionnaires were administered in the actual study, they were pilot tested for reliability and validity. Factor analysis

was performed on instructional leadership behaviors questionnaire which was developed by the researcher. Statistical analysis results revealed that instructional leadership behaviors construct was made up of 10 factors with 48 items. Apart from that factor analysis was also performed on school climate and teacher efficacy constructs. The results showed that school climate consisted of three factors with 11 items while teacher efficacy construct had three factors with 12 items. Reliability analysis results showed that the questionnaires had acceptable level of reliability, with Cronbach alpha value greater than .7.

Statistical analysis also involved multiple regression analysis. Prior to the analysis, data were screened to ensure that the assumptions of multiple regression analysis: linearity, homoscedasticity, independence of residuals and normality were not violated. All variables of the study exhibited normal distribution, with their respective Z-score values fell within the normal range of +/- 2.58. A total of eight hypotheses were tested using stepwise multiple regression analysis and hierarchical multiple regression analysis techniques.

The following section reviews the research findings organized according to the research hypotheses proposed in the study.

Hypothesis 1: Factors in talking with teachers to encourage reflection, namely making suggestions, giving feedback, giving praise, and using inquiry and soliciting advice and opinion, are predictors of school climate in secondary schools

Hypothesis 1 was partially supported. Two of the four factors in talking with teachers to encourage reflection were found to be significant predictors of school climate in secondary schools. The two predictors were the behavior of principal giving feedback and giving praise. The other two factors: making suggestions, and using inquiry and soliciting advice and opinion failed to enter the equation as the predictors of school climate (p >.05)

Hypothesis 2: Factors in promoting teacher professional growth, namely emphasizing the study of teaching and learning, supporting collaboration effort, developing coaching relationship among teachers, encouraging and supporting diverse teaching and learning approach, initiating teamwork, and doing action research to inform decision making, are predictors of school climate in secondary schools

Hypothesis 2 was partially supported. Four of the six factors in promoting teacher professional growth namely, the behavior of principal encouraging and supporting diverse teaching and learning approach, emphasizing the study of teaching and learning, supporting collaboration effort, and initiating teamwork were significant predictors of school climate in secondary schools. The other two factors: doing action research to inform decision making and developing coaching relationships among teachers failed to be the predictors of school climate (p > .05).

Hypothesis 3: Factors in talking with teacher to encourage reflection, namely making suggestions, giving feedback, giving praise and using inquiry and soliciting advice/opinion, are predictors of teacher efficacy in secondary schools

Hypothesis 3 was partially supported. Two out of the four factors in talking with teachers to encourage reflection were significant predictors of teacher efficacy in secondary schools. The relevant factors were the behaviors of principal giving feedback, and making suggestions. Two other factors: giving praise and using inquiry and soliciting advice and opinion failed to be significant predictors of teacher efficacy (p >.05).

Hypothesis 4: Factors in promoting teacher professional growth, namely emphasizing the study of teaching and learning, supporting collaboration effort, developing coaching relationship among teachers, encouraging and supporting diverse teaching and learning approach, initiating teamwork, and doing action research to inform decision making, are predictors of teacher efficacy in secondary schools

Hypothesis 4 was partially supported. Three out of the six factors were found to be significant predictors of teacher efficacy. The factors were the behaviors of principal encouraging and supporting diverse teaching and learning approach, supporting collaboration effort and doing action research to inform decision making. The other three factors: emphasizing the study of teaching and learning, developing coaching

relationship, and initiating teamwork failed to be significant predictors of teacher efficacy.

Hypothesis 5: Factors in instructional leadership behavior, namely talking with teachers to encourage reflection and promoting teacher professional growth, are predictors of school climate in secondary schools

Hypothesis 5 was fully supported. Both factors in instructional leadership behavior: talking with teachers to encourage reflection and promoting teacher professional growth were found to be significant predictors of school climate in secondary schools.

Hypothesis 6: Factors in instructional leadership behavior, namely talking with teachers to encourage reflection and promoting teacher professional growth, are predictors of teacher efficacy in secondary schools

Hypothesis 6 was fully supported. The two factors in instructional leadership behavior: talking with teachers to encourage reflection and promoting teacher professional growth were found to be significant predictors of teacher efficacy in secondary schools.

Hypothesis 7: Factors in school climate, namely student relations, school resources, and collaboration are predictors of teacher efficacy in secondary schools

Hypothesis 7 was partially supported. Out of the three factors in school climate, only two of them were found to be significant predictors of teacher efficacy in secondary schools. The two significant predictors were student relations and collaboration. The third factor, school resources, was not significant predictor of teacher efficacy.

Hypothesis 8: School climate mediates the relationship between instructional leadership behavior and teacher efficacy

The hypothesized mediating effect of school climate in the relationship between instructional leadership behavior and teacher efficacy was not supported. Hierarchical multiple regression analysis results revealed that school climate was not a significant mediator for the relationship between instructional leadership behavior and teacher efficacy.

5.3 Discussion of Findings

This section discusses findings of the study. In doing so, the discussion is organized according to variables and issues addressed in the research questions. The discussion begins with instructional leadership behavior measure, followed by school climate and teacher efficacy measures respectively. It is then continued with discussion that focuses on answering the five research questions of the study.

5.3.1 Instructional Leadership Behavior Measure

Instructional leadership behavior was the independent variable of the study. In order to measure the construct, the researcher developed the questionnaire based on

findings of the qualitative study conducted by Blasé and Blasé (2000) which gathered information about the preferred principal instructional leadership behaviors from teachers' perspective. Initially 69 items were constructed to measure instructional leadership behavior. Factor analysis involving principal axis factoring and varimax rotation identified 48 items with factor loading greater than .5, grouped under 10 different factors in which each factor had a minimum of two items. The 10 factors emerged in the findings of this study as independent but inter-related factors. The correlation values of between .44 and .75 indicated that the 10 factors measure somehow similar yet different construct of instructional leadership behavior. The findings also suggested that instructional leadership behavior is a multi-dimension construct which is consistent with the findings of empirical studies (Alig-Mielcarek, 2003; Leithwood et al., 2008; Quah, 2010).

The 10 factors were placed under two different dimensions of instructional leadership behavior namely, talking with teachers to encourage reflection and promoting teacher professional growth (Blasé & Blasé, 2000). The first dimension consisted of four factors while the second dimension had six factors. Factors in the first dimension, talking with teachers to encourage reflection, illustrated the effort of principals to develop teachers' instructional skills through talking to them about classroom instruction behavior. In relation to this, the behaviors of principal encouraging teachers to reflect actually develop the teachers in the long run. Teachers were not prescribed what to do; instead they were given encouragement and thrown with questions to reflect to make decisions for the next cause of action. The more specific behaviors in this dimension include giving feedback, giving

praise, making suggestions, and using inquiry to solicit teacher advice and opinion but excluded modeling behavior (Blasé & Blasé, 2000).

The factors in talking with teachers to encourage reflection reflected the instructional leadership construct of other models (Andrews & Soder, 1987; Blasé, 1987; Hallinger & Murphy, 1985; Wan Roslina Wan Ismail, 2011). For example, giving feedback was mentioned in the instructional leadership models of Andrews and Soder (1987), and Hallinger and Murphy (1985). The instructional leadership model of Andrews and Soder (1987) was used by Quinn (2002) to examine the relationship between principal leadership behavior and student engagement. Example of item included "My principal provides frequent feedback regarding my class performance" (Quinn, 2002, p 465). Similarly, giving feedback was also found in the Hallinger and Murphy (1985) model. Example of item was "Principal point out specific strengths in teacher instructional practices in post-observation conferences" (p 241).

In the pilot study, all the five items that described modeling behavior failed to emerge in a factor. Example of item: "The principal demonstrates good teaching techniques in classroom" (Appendix 1, item 22). Such finding is consistent with the claims that secondary school principals in Malaysia do not model appropriate classroom instruction methods to the teachers during classroom observation (OECD, 2009; Quah, 2011). Similarly, study on instructional leadership among high school principals in Papua New Guinea entailed similar results (Lahui-Ako, 2001). Another possible reason for the non-emergence of the five items on modeling behavior was

the contextual difference between the current and the Blasé' studies (Dimmock & Walker, 2000).

Factors in the second dimension that described promoting teacher professional growth behaviors included doing action research to inform instructional decision making, encouraging and supporting diverse teaching and learning approach, supporting collaboration efforts, emphasizing the study of teaching and learning, developing coaching relationships among teachers and initiating teamwork. There were some differences between the emerged factors and the instructional leadership strategies proposed by Blasé and Blasé (2000). The factor named encouraging and supporting diverse teaching and learning approach was a combination of encouraging and supporting redesign of programs and applying the principles of adult learning, growth, and development to all phases of staff development (Blasé & Blasé, 2000). The placement of items which described the behaviors of principals developing a culture for lifelong learning and focused on student learning (Appendix 2, items 39-43) was consistent with the proposal of Murphy et al. (2007). Murphy et al. (2007) associated the behavior of principals providing the needed resources and developing lifelong learning culture with developing diverse instructional strategies that help students to succeed. Meanwhile initiating teamwork was not in the instructional leadership strategies list suggested by Blasé and Blasé (2000). The three items in initiating teamwork factor depicted the effort of principals getting teachers to co-operate and work with each other. Example of item: 'The principal supports collaboration among teachers by setting up study group for interested teachers" (Appendix 2, item 28). This factor was added to the promoting teacher professional

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growth dimension because teamwork among teachers was vital and it should be prioritized by effective instructional leaders (Crum et al., 2009; DuFour & Marzano, 2009; Gupton, 2003; Lambert, 2002; Robinson & Timperley, 2007).

To illustrate how widespread was the evidence in their support, the dimensions in instructional leadership behavior of the current study were compared to the established instructional leadership models developed by renowned researchers in the field of instructional leadership. Factors in the talking with teacher to encourage reflection dimension reflected and added to the existing instructional leadership behavior dimensions as follows: 1) giving feedback (Alig-Mielcarek, 2003; Blasé & Blasé, 2000; Hallinger & Murphy, 1985; Lahui-Ako,2001), 2) giving praise (Blasé, 1987; Blasé & Blasé, 2000; Hallinger & Murphy, 1985; Southworth, 2002), 3) making suggestions (Andrews & Soder, 1987; Blasé & Blasé, 2000; Hallinger & Murphy, 1985), 4) using inquiry and soliciting advice and opinion (Blasé, 1987; Blasé & Blasé, 2000; Hoerr, 2008). On top of that, factors in promoting teacher professional growth were also consistent with the instructional leadership behaviors of other models as follow: 1) doing action research to inform decision making (Blasé & Blasé, 2000; Crum et al., 2009; Lambert, 2002), 2) encouraging and supporting diverse teaching and learning approach (Blasé, 1987; Blasé & Blasé, 2000; DuFour & Marzano, 2009; Kythreotis et al., 2010), 3) supporting collaboration effort (Crum et al., 2009; Blasé & Blasé, 2000; DuFour & Marzano, 2009; Fullan, 2002; Lambert, 2002; Robinson & Timperley, 2007), 4) emphasizing the study of teaching and learning (Blasé & Blasé, 2000; Hallinger & Murphy, 1985; Quah, 2011; Robinson & Timperley, 2007), 5) developing coaching relationship among teachers (Blasé &

Blasé, 2000; DuFour & Marzano, 2009; Opdenakker & Damme, 2007), and 6) initiating teamwork (DuFour & Marzano, 2009; Glanz et al., 2007; Lambert, 2002; Southworth, 2002).

Factor analysis technique supported the validity of the instructional leadership behavior construct. Statistical analysis results revealed that the 10 factors explained 58.73% of the variance in instructional leadership behavior. Hair et al. (2005) regarded a factor solution with total variance explained of more than 50% as satisfactory. Apart from that, the reliability results revealed that the Cronbach alpha value for all factors in instructional leadership behavior ranged between .83 and .94 and for overall questionnaire was .97. These values indicated high internal consistency of the factors. However, this questionnaire is still very much at its infancy stage. Replication of the study involving sample from other types of school and locations outside the state of Kedah is necessary to further enhance its validity and reliability, and therefore applicability of this questionnaire.

5.3.2 School Climate Measure

This study adapted the Revised School Level Environment Questionnaire (SLEQ) to measure school climate construct (Johnson et al., 2007). School climate, the intervening variable of the study, was measured in terms of teacher-student relationships, availability of resources for teaching and learning activities and collaboration activities in school.

The questionnaire used to measure school climate in the study consisted of only three factors from the five factors in the SLEQ (Johnson et al., 2007). Factor analysis results revealed that only three out of the five school climate factors in the SLEQ - instructional innovation, collaboration, decision making, school resources and student relations, were supported. The items in two of the factors namely instructional innovation and decision making did not load on the expected factors. Consequently, these items were dropped from the school climate questionnaire used in the study, leaving 11 of the original 21 items arranged in three factors: student relations, school resources and collaboration.

All items in the SLEQ on student relations were retained while one of the items on school resources "Instructional equipment is not consistently accessible" (Appendix 1, item 3) had factor loading smaller than .5 and thus was dropped. The decision was made because the item was quite similar to two of the items which were retained (Appendix 2, item 8 and 9). Factor analysis only retained 3 of the 6 items in the collaboration factor. Three of the items which had factor loading smaller than .5 were excluded in the questionnaire. Despite retaining only three of the five factors, the questionnaire was a valid tool for measuring school climate as the total variance explained by the three factors for measure was 67.74%. This value was higher than the minimum satisfactory value of 50% as suggested by Hair et al. (2005).

These statistical results were not surprising considering that the school system in Malaysia is different from where the revised SLEQ was developed (Dimmock & Walker, 2000). The education system in Malaysia emphasizes on academic

achievement. Performance of all public primary and secondary schools is ranked on yearly basis and students' results in public examinations such as UPSR, PMR, SPM and STPM contributed significantly to the ranking (Kementerian Pelajaran Malaysia, 2012; Malaysia, 2010). Such practice caused school principals and teachers to concentrate on proven teaching and learning strategies that helps student to score well in the centralized public examinations (Ngiam & Pang, 2011). This could be the reason for the non-support of instructional innovation in factor analysis of the data. On top of that, teachers in Malaysia were not involved in making decisions about their schools. The education system is centralized and all decisions in the school including curriculum, textbooks, student enrolment and teacher posting are not decided by the school (Malaysia, 2010). At the school level, principals generally were reluctant to accept ideas and suggestions from the teachers (Quah, 2011; Rosnarizah Abdul Halim & Zulkifli Abdul Manaf, 2009). Therefore, the supposedly items in decision making from the SLEQ that read "Teachers are frequently asked to participate in decision making" and "I have very little to say in the running of the school" (Johnson et al., 2007. p 837) were not supported in the factor analysis.

Although the measure of school climate consisted of only three factors, but the factors – student relations, school resources and collaboration met the requirement of the Moo's general dimensions for all human environments which were relationships, personal development, and system maintenance and system change (Johnson et al., 2007). Items in the student relations factor described student behaviors in terms of discipline, mannerism and motivation to study. Student behavior and relationship with others in the school determined the psychosocial context of the school.

Meanwhile items in collaboration factor, such as "Classroom instruction is rarely coordinated across teachers" and "Good teamwork is not emphasized enough at my school" described the extent of collaboration among teachers in the school. Collaboration factor was related to personal development dimension in Moo's dimension. Items in the school resources, on the other hand, concerned the availability of resources for teachers to use in teaching and learning which was linked to system maintenance and system change in Moo's dimension.

The school climates factors derived in this study were supported by findings of empirical studies. The first factor, student relations, was consistent with other school climate models (Goleman, 1995; Lee et al., 1991; Williams, 2009). All these researchers opined that students' attitude towards their schools, teachers and study as important element of school climate. The second factor, school resources, supported school climate model of Alig-Mielcarek (2003), Hoy et al. (1991), and Sukarmin (2010). The third factor, collaboration as school climate factor was in line with the school climate model proposed by Firestone and Pennell (1993), Glickman et al. (2007) and Grizzard (2007). Correlation analysis showed the values of correlation between the factors ranged from .15 to .37; indicating small to medium relationships among the factors. The statistical results demonstrated that student relations, school resources and collaboration were three independent but inter-related factors of school climate.

5.3.3 Teacher Efficacy Measure

The teacher efficacy construct adapted in the current study measures teachers' belief in their competency to perform a task in light of the resources and constraints in the context (Tschannen-Moran et al., 1998). The model was developed from a combination of two competing strands which were Social Learning Theory (Rotter, 1966) and Social Cognitive Theory (Bandura, 1986). When assigned a task, a teacher would assess the task cognitively in terms of its requirements in relation to his or her personal capability and made an efficacy judgment about the ability to perform the task. Therefore, teacher efficacy was based on perception of ability instead of the actual ability. In view of this, the high validity and reliability of data provided empirical support that the model is a valid construct for teacher efficacy.

Factor analysis results revealed that teacher efficacy consisted of three factors namely student engagement, classroom management, and instructional strategies. Loading values of all 12 items in the measure were greater than .5. The total variance explained by the three factors was 77.13%. The Cronbach alpha values for the three factors ranged between .89 - .91 while and the overall measure was .94. Such statistical results were obtained despite the researcher has changed the scale rating of the questionnaire from the range of $1 - 9$ to $1 - 5$ and translated the measure to Bahasa Malaysia. These statistical results provided yet another support for the robustness of the Ohio State Teacher Efficacy Scale (OSTES) in terms of construct validity and reliability as well as its applicability in different geographical locations, including the Kedah secondary school context. Apart from that, these findings were also consistent with previous empirical studies which claimed that the OSTES was a

valid and reliable measure of teacher efficacy (e.g. Brown, 2009; Chong et al., 2010; Ryan, 2007; Sukarmin, 2010; Tschannen-Moran & Hoy, 2001; Zaidatol Akmaliah et al. 2008).

The validity and reliability of the three-factor model evident in the current study supported the usefulness of the OSTES as the measure of teacher efficacy. There were considerable disagreements in interpretation of the teacher efficacy models proposed by the researchers in the field of teacher efficacy (e.g. Bandura, 1986; 2006; Berman et al., 1977; Nir & Kranot, 2006). To cite an example, teacher efficacy model proposed by Bandura (1986) consists of efficacy expectancy and outcome expectancy while other model regarded them as personal teaching efficacy and general teaching efficacy (Gibson & Dembo, 1984; Nir & Kranot, 2006). Although there was agreement on one factor as teacher efficacy related factor, there was disagreement on the second factor. Berman et al. (1977) regarded the second factor as external control of reinforcement while other researchers labeled it as outcome expectancy (Bandura, 1986; Gibson & Dembo, 1984). The confusion arose with the claim of Bandura (1997) who mentioned that outcomes expectancy added little to learning motivation because it stemmed from efficacy belief. Comparatively, the OSTES could be a better alternative for teacher efficacy measure as it described typical tasks of teachers which were neither too general nor too specific (Chong et al., 2010; Ryan, 2007; Tschannen-Moran & Hoy, 2001).

5.3.4 Instructional Leadership Behavior as the Predictor of School Climate

Statistical analysis revealed that both talking with teachers to encourage reflection and promoting teacher professional growth were significant predictors of school climate. Both dimensions in instructional leadership behavior explained 15% of the variance in school climate. Between the two dimensions, the former dimension contributed 1% to the variance while the latter dimension 14%. These findings indicated that promoting teacher professional growth was a more significant instructional leadership behavior dimension that influences school climate. Its influence on school climate was a lot higher than talking with teachers to encourage reflection. Nevertheless, the influence of talking with teachers to encourage reflection on school climate cannot be ignored as it is also statistically significant albeit small in value. These findings supported previous studies which found that instructional leadership practices had positive influence on school climate (Alig-Mielcarek, 2003; Cheng, 1985; Hallinger & Murphy, 1985; Kelley et al., 2005; Leithwood et al., 2008; Opdenakker & Damme, 2007; Sukarmin, 2010).

All the 10 factors of instructional leadership behavior (4 factors in talking with teachers to promote reflection dimension and 6 factors in promoting teacher professional growth dimension) showed significant relationship with school climate. These results enabled regression analysis to be performed. Nevertheless, not all the factors were predictors of school climate. Only four factors in promoting teacher professional growth and two factors in talking with teachers to promote reflection were found to be predictors of school climate ($p < .05$). The relevant instructional leadership behaviors were encouraging and supporting diverse teaching and learning

approach, emphasizing the study of teaching and learning, supporting collaboration effort, initiating teamwork, giving feedback and giving praise.

The significant relationship between the behavior of principals promoting teacher professional growth and school climate is not at all surprising. School climate of the study was defined in terms student relations, school resources and collaboration. Instructional leadership behaviors such as encouraging and supporting diverse teaching and learning approach, emphasizing the study of teaching and learning, supporting collaboration effort, and initiating teamwork would have impact on these aspects that defined school climate because these behaviors of principals produced a work environment that facilitates teachers to do their jobs (Gu et al., 2008; House, 1971; Hoy & Miskel, 1991; Opdenakker & Damme, 2007). For example, by emphasizing the study of teaching and learning, principals would equip teachers with the up-to-date instructional knowledge and skills through the training they attended (Murphy et al., 2007). Teachers are encouraged to attend training as the needs arose. The training causes teachers to perceive their work environment as being more conducive and helping them to perform their tasks. That explains the influence of this principal's behavior on school climate.

Ross and Gray (2006) mentioned that leadership behavior that developed the capacity of organization had effects on teacher commitment to professional learning communities in schools. Leadership construct in the study such as "Leaders in this school do not encourage us to evaluate me to pursue my own goals for professional learning" (p 198). In relation to this, professional learning communities in school had

been linked to better work support for teachers in the areas of collaboration and school resources (Fullan, 2002; Lambert, 2002). The findings also supported previous empirical findings that there was a relationship between the behavior of principals encouraging teachers to develop themselves continuously and school climate (Alig-Mielcarek, 2003; Hallinger & Murphy, 1985; Kelley et al., 2005).

As for the behavior of principals supporting collaboration effort, it influences school climate because such behavior causes teachers to work together as a team. Principals who support collaboration encourage teachers to meet on regular basis (DuFour & Marzano, 2009). Subsequently, teachers could count on their colleagues for support in their endeavors. For example, teachers may come together and discuss instruction matters which may include skills of gaining student support and managing misbehavior among students. Apart from that, collaboration also causes teachers to agree on the accepted behaviors in school such as being polite to teachers and other students. Because of the teamwork spirit, students not exhibiting agreed upon behaviors would be reprimanded by all teachers. Actions of all teachers in the school are consistent. As a result, the school will have a climate where students portraying behaviors approved by everyone in the school (Day et al., 2008; Goleman, 1995). On top of that, the collaboration effort may see teachers producing and sharing their teaching and learning resources. The behavior of principal supporting collaboration effort therefore influences teachers' perception of school climate and such finding is consistent with the findings of previous empirical studies (Gu et al., 2008; Hallinger et al., 1996; Jones, 2009).

The third instructional leadership behavior factor which was found to influence school climate was encouraging and supporting diverse teaching and learning approach which was the strongest predictor of school climate. This finding supported the findings of previous empirical studies (Kelley et al., 2005; Mark & Printy, 2002; Nettles & Herrington, 2007). An examination of the construct of encouraging and supporting diverse teaching and learning approach revealed that the variable includes the behavior of principals encouraging new ways of doing things and providing the necessary resources for teachers. Principals encouraged their teachers to use varied instructional approaches in the classroom and provided them with the needed materials. This behavior was very helpful for teachers because teachers encountered various types of students with different ability in their teaching assignments. The encouragement to use diverse teaching and learning approach gave teachers the freedom and opportunity to use the approach that in their opinion matches their students' ability. The resources in the form of material and moral support caused teachers to perceive the work environment as being more conducive for them to perform their tasks (Hoy & Woolfolk, 1993; Johnson et al., 2007; Ross & Gray, 2006). This encouragement coupled with the provision of needed resources provided by the principals influenced teachers' perception of their work environment. Such kind of support caused teachers to perceive the work environment as being more positive in the areas of student relations, school resources and collaboration.

For giving feedback, the finding of this study suggested that principal who gave feedback to teachers on instruction matters influenced teachers' perception of their school climate. Feedback from principals may enlighten teachers in the areas of

student relations, school resources and collaboration which were the construct of school climate in this study. For example, feedback from principals may cause teachers to have a better understanding of the behavior of students of a different ethnic group which is typical in a Malaysian classroom setting. The feedback may cause teachers to have a more positive perception about their student behavior. Apart from that, this finding is consistent with the finding of Alig-Mielcarek (2003) who commented that the behavior of principals giving feedback on teaching and learning process influenced school climate. Other researchers who had similar argument included Blasé and Blasé (2000), and Lahui-Ako (2001).

The last instructional leadership behavior that influenced school climate positively is giving praise. The findings of this study suggested that principals who praised their teacher caused teachers to perceive their school climate more positively. This finding is parallel to the findings of other researchers. For example, Hallinger and Murphy (1985) found that praises from principals caused more positive climate in the schools. Besides them, another researcher, Charf (2009) related praises given to teachers with school climate. In the context of the current study, principals gave praises to teachers privately or publicly in front of other teachers, students and parents. Such form of praise emphasized what is valued in the school. The behavior may cause students in the school to behave according to what is valued in the areas of behaviors and motivation to study. Similarly, giving praise may cause teachers to collaborate more among themselves.

Conversely, the study found that the behavior of initiating teamwork had a significant negative impact on school climate. This statistical analysis result indicated that teachers in the study disliked the behavior of principal initiating teamwork. The plausible explanation for this negative relationship is teachers might regard such behavior as causing them extra work. In the study, initiating teamwork includes the behavior of principals forming structure in school such as study group and observation schedule to encourage teamwork among teachers (Murphy et al., 2007; Sanzo et al., 2010). Such initiative requires teachers to be involved in extra activities that take away their time. This is especially so at this time when teachers in schools are already burden with a lot of paper work such as school based assessment and online key-in marks (Kementerian Pelajaran Malaysia, 2011). When teachers disliked the initiative by their principals, it caused a negative realtiosnhip. From this, it can be inferred that if principals wish to improve teachers' perception of a more positive work environment, they should handle the issue of initiating teamwork in a more diplomatic manner.

This study found that making suggestions, using inquiry and soliciting advice and opinion, doing action research to inform decision making, and developing coaching relationships among teachers to have significant relationship with school climate. These findings were consistent with previous empirical studies (e.g. Alig-Mielcarek, 2003; Frederick, 2007; Johnson et al., 2007). Nevertheless, these four factors were found to be not predictors of school climate ($p > .05$).

There are a few possible explanations for such findings. The findings may be a result of teachers perceived these behaviors as of not important in relation to student relations, school resources and collaboration. For example, the behavior of making suggestions which concerned principals giving suggestions about instructional practices may be regarded as not important for establishing school climate by the teachers in this study. In order for the effect of a factor to be observed, a threshold must be crossed (Opdenakker & Damme, 2007). Apart from that, this finding is consistent with the finding of Grizzard (2007) who discovered that instructional leadership behavior of principals had no relationship with school climate.

In conclusion, these results showed that from the point of view of teachers, the behavior of principal talking with teachers to encourage reflection and promoting teacher professional growth were important in shaping school climate. Specifically, the behaviors of principal giving feedback, giving praise to teachers, supporting collaboration effort, encouraging and supporting diverse teaching and learning approach, emphasizing the study of teaching and learning and initiating teamwork were significant predictors of teachers' perception about their work environment. Therefore, principals who are interested to build positive climate in their schools should consider practicing the five behaviors that causing positive school climate more frequently and at the same time cautioned initiating teamwork as it contributed negatively to teachers' perception of their work environment.

5.3.5 Instructional Leadership Behavior as the Predictor of Teacher Efficacy

The statistical analysis results of the study indicated that both talking with teachers to encourage reflection and promoting teacher professional growth were significant predictors of teacher efficacy. Both dimensions contributed to 40% of variance in teacher efficacy. The former instructional leadership behavior contributed 37% while the latter 3%. These findings showed that talking with teachers to encourage reflection is a much more important predictor of teacher efficacy than promoting teacher professional growth. It suggested that between talking with teachers to encourage reflection and promoting teacher professional growth, principals should practice more of talking with teachers to encourage reflection if they intend to elevate the level of teacher efficacy. The reason for talking to teachers to encourage reflection being a more important predictor of teacher efficacy is perhaps due to the fact that principals' personal contact with teachers had a greater effect on teacher belief in their ability. Principals' personal contact with teachers in the form of talking to them may be influential because of their role as leader. Due to the respect teachers have on them, principals' verbal input could be a more significant source of efficacy for the teachers.

This evidence of the relationship between instructional leadership behavior and teacher efficacy is certainly desirable. The findings indicated that leadership behaviors have significant effects on the teachers, which is consistent with the findings of previous empirical study (Blasé & Blasé, 2000; Hipp, 1996; Marks & Printy, 2003; Ryan, 2007; Scurry, 2010; Sukarmin, 2010; Tschannen-Moran & McMaster, 2009). All these studies concluded that leadership behavior had influence

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on teacher efficacy. Instructional leadership behaviors would have influence on teacher efficacy belief because these behaviors of principals were related to the tasks performed by teachers. In relation to this, instructional leadership behaviors concerned what the principals do in managing student learning in schools while teachers were those who perform the teaching in classrooms. Therefore, instructional leadership behaviors could influence teachers' belief in their ability to perform a task at the designated types of performance. If the behavior is perceived by teachers as making their tasks easier, this behavior would have a positive effect on teacher efficacy and vice versa.

These significant relationships between instructional leadership behavior and teacher efficacy provided empirical support to Social Cognitive Theory (Bandura, 1997; Tschennan-Moran et al., 1998). Precisely, the Social Cognitive Theory proposed that teachers developed efficacy belief from their interaction with the people around them. These instructional leadership behaviors which had significant relationships with teacher efficacy acted as the sources of efficacy information advocated in the teacher efficacy theory. For this, the findings proposed that, based on the context of the current study, all the 10 factors of the instructional leadership are the sources of efficacy information.

The correlation analysis results showed that all the four factors of talking with teacher to encourage reflection namely giving feedback, giving praise, making suggestions and using inquiry and soliciting advice and opinion had significant relationship with teacher efficacy. These findings supported previous research

findings (Scurry, 2010; Tabbodi & Prahallada, 2009; Tschannen-Moran & McMaster, 2009). However, stepwise regression analysis results indicated that only two of the four factors: giving feedback and making suggestions were predictors of teacher efficacy.

How are these significant instructional leadership behaviors related to teacher efficacy? The behavior of giving feedback could have influence on teacher efficacy because feedback from the principal is an efficacy source for teacher (Bandura, 1997; Tschennan-Moran et al., 1998). When principals give feedback to their teachers, they were actually telling the teachers about their ability which they might not be aware of prior to that. The impact of these behaviors is significant because principals as the superior to the teachers would have persuasive influence over the teachers. Repeated feedback from the principals alters teacher belief about their abilities. Positive feedback and suggestions would subsequently enhance teachers' efficacy belief. This finding is consistent with previous studies by Blasé and Blasé (2000), Scurry (2010), and Tschannen-Moran and McMaster (2009).

Making suggestions was found to be a significant predicator of teacher efficacy could be explained as follows. In making suggestions to teachers, principals did not dictate teachers into doing something. Conversely, principals proposed some ideas for the teachers with the intention of helping them to accomplish their tasks. Examples of construct included "The principal makes suggestions on classroom instruction that considers teachers' input to them" and "The principal makes suggestions on classroom instruction to teachers that allow them to decide on the

options" (Appendix 2). In an environment like this, teachers were able to do their work without much negative emotions. Reduced negative emotion would ultimately lead to increased efficacy belief (Bandura, 1986; Tschennan-Moran et al., 1998). Besides that, through making suggestions, especially through sharing their own experiences, principals furnished teachers with vicarious experience on how to go about doing a task (Glickman et al., 2007; Quinn, 2002; Sanzo et al., 2011). These types of suggestion by principals were actually sources of efficacy information that developed teacher efficacy (Blasé & Blasé, 2000; Lahui-Ako, 2001).

Similarly, correlation analysis results also found that all six factors of promoting teacher professional growth, namely encouraging and supporting diverse teaching and learning approach, doing action research to inform decision making, emphasizing the study of teaching and learning, supporting collaboration effort, developing coaching relationship among teachers and initiating teamwork to have significant relationship with teacher efficacy. Such findings are consistent with previous studies (Blasé & Blasé, 2000; Quinn, 2002; Scurry, 2010). Only three of the six factors in promoting teacher professional growth: encouraging and supporting diverse teaching and learning approach, doing action research to inform decision making, and supporting collaboration effort were significant predictors of teacher efficacy.

The findings indicated that the more principal engaged in behavior of encouraging and supporting diverse teaching and learning approach, teachers become more efficacious. When principals encourage and support diverse teaching and learning

approach, they encourage teachers to use varied instruction approaches and strategies that suit their students so as to improve student learning. In the current study, principals showed their support by providing teachers with the necessary resources to carry out teaching and learning activities. The resources support caused teachers to believe that the assigned task has become easier (Quinn, 2002). Such belief has an impact on their efficacy belief. Bandura (1986) commented that teachers' efficacy will increase when they felt supported and were allowed to complete their tasks without being interfered by much negative emotions. Such finding supported previous studies which concluded that principals who encourage continuous improvement caused increased efficacy belief among the teachers (Hipp, 1996; Marks & Printy, 2003; Scurry, 2010).

The next significant predictor of teacher efficacy was supporting collaboration effort. Such behavior is connected with the initiatives of principals encouraging teachers to collaborate with others within the school as well as with teachers from other schools. Collaboration among teachers opens up opportunity for teachers to share and learn instructional practice on regular basis. The support of principals in this area will lead to establishing a culture in which teachers are willing to discuss and share knowledge with each other (Crum et al., 2009; DuFuor & Marzano, 2009; Sanzo et al., 2011). Through the interaction, teachers update their knowledge about instructional matters regularly. Such input makes teachers feel more equipped to handle teaching in terms of instructional strategies, classroom control and student engagement which explained the increase in efficacy belief.

The finding on doing action research to inform decision making as a significant predictor of teacher efficacy is consistent with Gupton's (2003) view that instructional leaders must depend on systematic, varied data and up-to-date research to make accurate judgment on suitable and effective staff development program. When principals perform action research and use the findings to make decision, they tend to make more accurate decision. For example, principals may conduct action research to find out the knowledge and skills needed by teachers for effective classroom instruction. The data from action research will furnish principals with information that enable them to plan for in-house training which are more relevant for the teachers. The right training, based on teachers' needs, makes the teachers to become more confident in their ability to accomplish a task at the designated level of performance (Day et al., 2008). Thus, the behavior of principal doing action research to inform decision making influences a teacher's efficacy belief.

On the other hand, this study found that the behavior of giving praise, using inquiry and soliciting advice and opinion, emphasizing the study of teaching and learning, encouraging coaching relationship, and initiating teamwork were not predictors of teacher efficacy. This may be due to the fact that the path between these instructional leadership behaviors and teacher efficacy is mediated by some variables not examined in this study (Baron & Kenny, 1986). To cite an example, Nir and Kranot (2006) commented that the influence of principals' behavior on teacher efficacy is mediated by teacher job satisfaction. Since teacher job satisfaction was not examined in this study, it is not known if this is the case. Similarly, Fancera (2009) also

discovered that instructional leadership behaviors do not have impact on teacher efficacy.

Hence, based on the findings of the study, instructional leadership behaviors showed significant relationship with teacher efficacy. However, principals could influence teacher efficacy by engaging in the following instructional leadership behaviors: giving feedback, making suggestions, encouraging and supporting diverse teaching and learning approach, doing action research to inform decision making, and supporting collaboration effort.

5.3.6 School Climate as the Predictor of Teacher Efficacy

Correlation analysis results showed that two school climate factors, namely student relations and collaboration had significant relationship with teacher efficacy. When regression analysis was performed, these two factors were found to be significant predictors of teacher efficacy. Such findings were consistent with previous research (Brown, 2009; Chong et al., 2010; Vari, 2011). Statistical analysis results indicated the influence of school climate on teacher efficacy was significant at 9%, in which student relations factor contributed 7% while collaboration factor 2%. The findings were consistent with previous studies which also reported low correlation value (r) between school climate and teacher efficacy (Chong et al., 2010; Hoy & Woolfolk, 1993). The contribution of the third factor, school resources, was not significant. Thus, the findings conceived that the significant predictors were student relations and collaboration while the availability of school resources did not influence teacher efficacy.

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The study found that student relations and collaboration were the predictors of teacher efficacy. Student relations reflected the cooperation and support rendered to the teachers by the students while collaboration indicated the supportive environment felt by the teachers. These findings should come as no surprise as teachers including their efficacy belief were influenced by their work environment as proposed by Social Cognitive Theory (Bandura, 2006). Teachers in schools with orderly student behavior and supportive human relationships felt more efficacious (Gresham, 1995; Lee et al., 1991). Student behaviors that were cooperative and motivated gave teachers a sense of control over the situation and this influenced their judgment with regard to assessment of teaching task and teaching competence (Hearn, 2010; Horton, 2013; Tschannen-Moran et al., 1998). This judgment in accomplishment subsequently made teachers feel more efficacious. If this is the case, this finding drove home a point on the importance of fostering positive student relations in school which include cultivating student respect for teachers, motivation in learning, and being helpful and cooperative (Goleman, 1995; Williams, 2009). Such initiatives would create an environment conducive for developing more efficacious teachers in the school.

Similarly, school climate that promotes collaboration among teachers could cause them to feel more efficacious. In a supportive environment characterized by teamwork, communication among teachers and regular coordination across teachers, teacher efficacy was evident because such supports were the sources of efficacy. Collaboration exposed teachers to sources of efficacy such as vicarious experience, verbal persuasion and psychological state which determines teacher efficacy

(Bandura, 1986; Tschennan-Moran et al., 1998). In schools that promote collaboration, teachers often interact and work with one another. Through the meetings, both formal and informal, the success of fellow colleagues established belief in the teachers that they too could be as successful in their teaching attempts. Regular communication and coordination activities among teachers opened up opportunity for teachers to convince each other about their capability which in turn develops efficacy beliefs. In the same manner, the feeling of being supported put teachers in a psychological state that nurtures efficacy beliefs. In other words, efficacy belief was developed when teachers watched others succeed in performing similar task, when they were convinced by others about their capability and when they were not disturbed by negative emotions. Such finding supported previous empirical studies that examined collaboration among teachers in school and teacher efficacy (Blasé & Blasé, 2000; Brown, 2009; Dinham, 2007; Lee et al., 1991).

The finding of the current study in which school resources was not a significant predictor of teacher efficacy was consistent with the findings of Hoy and Woolfolk (1993). Such result could also be explained using the sources of efficacy suggested by Bandura (1986). The four sources of efficacy, namely mastery experience, vicarious experiences, verbal persuasion and psychological states seemed to be related to human interaction but not material availability. This finding suggested that the availability of school resources does not predict teacher efficacy. To put it differently, teacher efficacy just like student learning could not be developed through providing more resources in the school (Coleman et al., 1966; Purkey & Smith, 1983). Despite these justifications, this finding contradicted the findings of previous

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research which argued that school resources to be important for teachers (Manthey, 2006; Tschannen-Moran & McMaster, 2009)

5.3.7 School Climate as the Mediator for the Relationship between Instructional Leadership Behavior and Teacher Efficacy

Hierarchical multiple regression analysis has shown that school climate failed to be a mediator for the relationship between instructional leadership behavior and teacher efficacy. This finding suggested that school principals need not pay much attention on developing a climate to facilitate the development of teacher efficacy. Instead, the principals should concentrate more on engaging in instructional leadership behaviors listed in the study which include talking with teacher to encourage reflection and promoting teacher professional growth.

A possible explanation for this finding is talking with teacher to encourage reflection and promoting teacher professional growth were powerful efficacy sources, thus causing the relationship between school climate and teacher efficacy to become not significant when instructional leadership behaviors were controlled (Baron & Kenny, 1986; Kurland, Peretz & Hertz-Lazorowitz, 2010). Instructional leadership behaviors in the current study could be powerful teacher efficacy sources which include mastery experience, vicarious experience, verbal persuasion and physiological state (Bandura, 1986; 2006; Tschannen-Moran et al., 1998). Some previous studies suggested that instructional leadership behaviors were powerful efficacy sources. For example, feedback from supervisor was a strong efficacy source (Blasé & Blasé, 2000; Scurry, 2010; Tschannen-Moran & McMaster, 2009); supporting collaboration

efforts caused elevated teacher efficacy (Raudenbush et al., 1992; Ross et al., 2004; Ryan, 2007). In relation to this, a single behavior, for example, giving feedback alone may not be a powerful source of efficacy; however, in partnership with other instructional leadership behaviors including making suggestions, encouraging and supporting diverse teaching and learning approach, supporting collaboration and doing action research to inform decision making, the collective effect may be powerful enough to influence teacher efficacy, to the extent that it overrode the mediating effect of school climate in the context of the current study.

The finding was in contrast with the claim that school climate is a perfect mediator for the relationship between instructional leadership behavior and teacher efficacy (Sukarmin, 2010). Sukarmin found that there was no relationship between instructional leadership behavior and teacher efficacy when school climate was removed from the equation. There are two possible reasons for the difference between the findings of this study and Sukarmin's. First, it could be due to the difference in construct of variables. Detailed examination of the variables found that the two studies used different constructs for instructional leadership behavior and school climate. Sukarmin viewed instructional leadership behavior in terms of what school principals did to establish school climate that promotes student learning while the current study defined instructional leadership behavior in terms of what principals did to develop teachers as individuals and professionals. Similarly, Sukarmin's study defined school climate in terms of institutional integrity, collegial leadership, teacher affiliation, resource influence and academic emphasis while

school climate of the current study involved student relations, school resources and collaboration. Secondly, it could be due to the difference in context in terms of level of study and locality. The climate of primary schools is different from secondary schools (Hoy et al., 1991; Ryan, 2007). Similarly, other researchers cautioned about the practice of adopting theories developed in one context to another context (Dimmock & Walker; 2000; Leithwood et al., 2008; Tabbodi & Prahallada, 2009). In view of this, findings of the current study can be expected to be in contrast with the study of Sukarmin's due to the difference in level of study and geographical location.

5.4 Implications for Theory and Practice

The findings of the study suggested that there is significant relationship between instructional leadership behavior, climate and teacher efficacy when pairs of variable are examined separately. Nevertheless, school climate failed to be a mediator for the relationship between instructional leadership behavior and teacher efficacy. This section discusses the theoretical and practical implications of the study.

5.4.1 Theoretical Implications

The findings contributed to theory in the following areas – first, it provided empirical support for the Path-Goal Theory and Social Cognitive Theory. Next, it introduced a new measure for instructional leadership behavior in the context of secondary schools in the state of Kedah. Finally, it provided evidence for the construct validity of the instruments used in the study.

5.4.1.1 Empirical Evidence in Support of the Underpinning Theories of the Study

The model of the current study was constructed based on the findings of previous empirical study (Blasé & Blasé, 2000), with Path-Goal Theory (House, 1971; Hoy & Miskel, 1991), and Social Cognitive Theory (Bandura, 1986; 1997; Tschennan-Moran et al., 1998) as the underpinning theories. The findings of this study supported the Path-Goal Theory which posits that the behaviors of leaders providing guidance, support and coaching to subordinates assist them accomplishing tasks and obtaining designated goals. The behavior of principals was found to influence subordinate. On top of that, the list of instructional leadership behaviors in this study complemented and added to the categories of leadership behaviors in the Path-Goal Theory (Alig-Mielcarek, 2003; House, 1971; Hoy & Miskel, 1991; 2005). Specifically, this study found that school leaders could influence teacher efficacy (which impacts teacher job behavior) by engaging in the instructional leadership behavior in these two dimensions – talking with teachers to encourage reflection and promoting teacher professional growth.

This study also provided support for Social Cognitive Theory which proposes that human beings learned their behaviors from four sources of efficacy involving the use of cognition from the environment (Bandura, 2006; Tschennan-Moran et al., 1998). Statistical analysis results proposed that all instructional leadership behaviors examined in the study had significant relationship with teacher efficacy. Such findings provided empirical support to the claim that environmental factor influences

personal factor (Bandura, 1986). In relation to this, instructional leadership behavior is an example of environmental factor while teacher efficacy is a personal factor.

Apart from that, the significant relationship between instructional leadership behaviors and teacher efficacy substantiated the role of cognition in human functioning. Teachers made decisions about behavior cognitively whereby verbal input from others caused teachers to reflect and make decisions (Bandura, 1986; Tschannen-Moran et al., 1998). Talking with teachers to encourage reflection is not a form of tangible external stimuli for people action. The significant relationship between the variables simply proved that thinking process has taken place.

5.4.1.2 New Measure for Instructional Leadership Behavior

The study has birthed a new addition of instrument to the existing instructional leadership behavior measures. This instrument which was developed by the researcher encompasses the behaviors of instructional leaders in human resource management − management of teachers. Most existing measures of instructional leadership behavior do not pay much attention to the management of this key resource in the school. For example, human resource management named under the dimension of promoting teacher professional growth is but one of the 10 factors in the widely used Principal Instructional Management Rating Scale (PIMRS) (Hallinger & Murphy, 1985; Sukarmin, 2010; Wan Roslina Wan Ismail, 2011). In actual fact, human resource management is the key factor in school management because it determines the quality of classroom instruction and student learning. The instructional leadership behavior instrument used in the current study should be able

to provide solution for the gap. Nevertheless, the instrument certainly needs further testing and refinement.

5.4.1.3 Evidence for the Construct Validity of the Instruments

This study has provided support for construct validation of the instruments used in measuring school climate (Johnson et al., 2007) and teacher efficacy (Tschannen-Moran & Hoy, 2001) in Malaysian school setting. These two instruments, which were developed abroad, were adapted and translated to Bahasa Malaysia. Statistical analyses (factor analysis and reliability analysis) were performed on the data dan the results showed that the adapted instrument for measuring school climate consists of only three scales as compared to the original which had five scales. The same analysis performed on teacher efficacy measure found the results supported the existence of three different factors as the original questionnaire (Tschannen-Moran & Hoy, 2001). Factor analysis and reliability results suggested both translated instruments were good tools for measuring school climate and teacher efficacy as they exhibited high validity and reliability values.

5.4.2 Practical Implications

The discussion now moves on to the practical implications of the study which includes supervision practices and teacher professional development. The findings enable the proposal of some suggestions on how human resources could be managed in the school.

5.4.2.1 Supervision Practices

The findings of the study which found direct significant influence of instructional leadership behavior on teacher efficacy could be used for improving classroom supervision practices in the future. Classroom supervision, which is carried out according to the Ministry of Education Professional Circular No. 3/1987, is compulsory in all Malaysian classrooms. School principals were mentioned as the personnel responsible for carrying out the task. The findings of this study suggested that principals should incorporate the behaviors of talking to teachers to encourage reflection in the process of the supervising the teachers as a mean to improve classroom instruction. This means that the post-conference with the teachers of the supervision structure should be given its due attention (Glickman et al., 2007; Hearn, 2010; Scurry, 2010). During the meeting, principals should practice more talking to the teachers to encourage them doing reflection. Such behaviors if practice often by the principals will develop teacher efficacy and subsequently improved classroom instruction (Blasé & Blasé, 2000; 2004).

5.4.2.2 Teacher Professional Development Program

The significant influence of instructional leadership behaviors on teacher efficacy proposed the need to re-look at the teacher professional development program in schools. Professional development of teachers is an important aspect in the Malaysian school context whereby all teachers have to attend a minimum of 7-day training per year and the training is recorded (Kementerian Pelajaran Malaysia, 2005). In order to fulfill the minimum days of training for all teachers, most principals would work out some form of in-house training to cater to the training

needs among the teachers. Apart from that, teachers are also allowed to attend courses outside their schools. The aim of such development program is to equip teachers with the up-to-date knowledge and skills for effective instruction. Teachers in Malaysia reported high percentage of attendance in professional development courses but student academic performance has dropped consistently over the years (Kementerian Pelajaran Malaysia, 2012). Such trend sent forth concern that teacher professional development might not bring benefit to student learning.

The findings of this study suggested the possibility of developing school-based teacher professional development by encouraging principals to practice more of these instructional leadership behaviors – giving feedback, making suggestions, encouraging and supporting diverse teaching and learning approach, doing action research to inform decision making, and supporting collaboration effort as these behaviors were found to influence teacher efficacy and teacher efficacy was related to student learning (Chong et al., 2010; Leithwood et al., 2008; Ross, 1992; Ryan, 2007). To cite an example, when principals engage in the behavior of supporting collaboration effort, teachers are encouraged to work with each other on professional matters (Blasé & Blasé, 2004). Such teacher interaction facilitated teacher instruction and it could be more effective as the school-based trainings were based on context and embedded in the job (Dinham, 2007; Fullan, 2002; Kementerian Pelajaran Malaysia, 2012; Timperley, 2005). Therefore, instead of inviting experts from outside the school to conduct training for teachers or to send teachers outside the school for training, the findings of this study suggested that such teacher

development needs could be met by principals engaging more of talking to teachers to encourage reflection and promoting teacher professional growth behaviors.

5.5 Recommendations for Future Research

This study has obtained substantial findings about the relationships between instructional leadership behaviors, school climate and teacher efficacy in secondary schools in the state of Kedah. Nevertheless, the findings have also opened up doors for future research as recommended below:

1. The questionnaires used in the study need further validation. The instrument used to measure instructional leadership behavior, which is developed by the researcher, is very much still at its infancy stage. The instrument has to be used in other studies to strengthen its validity. Besides, the adapted Revised School Level Environment Questionnaire (SLEQ) used in the study needs to be replicated in other studies as well. Only three out of the five factors in the Revised SLEQ appeared when factor analysis was conducted on the data of current study. Repeated use of the instrument will confirm the validity of the instrument in the Malaysian context.

2. This study involved only secondary schools in the state of Kedah. Future research should consider other types of school such as primary schools, fully residential schools and high performing schools in the state of Kedah. On top of that, the replication could also be done with a larger target population, including teachers from the whole country. The study that involves samples

from the whole country will make it possible for the findings to be generalized to all Malaysian teachers.

3. Future research could consider using Structural Equation Modeling (SEM) in statistical analysis. This study utilizes multiple regression analysis to identify the predictors for school climate and teacher efficacy. Although the analysis has identified some significant predictors but it did not take into consideration the unobserved concepts in the relationship as well as did not account for measurement error in the estimation process. The use of SEM in analysis would address this issue.

4. Purely quantitative method was used to gather data in the current study. Future research should include the use of qualitative method in data gathering. This is because when more than one method is used to collect data, data from two different sources lend support to the interpretation of the findings. Data gathered from qualitative method such as interview, would provide further evidence in the interpretation of the findings derived from the quantitative data.

5. Future research could use the instructional leadership behavior questionnaire developed in the current study to examine the relationship between instructional leadership behavior and the development of professional learning community in schools. As an initiative to provide support for teachers to improve classroom instructions, selected Band Five schools in

Malaysia has been coached to introduce programs for developing professional learning community (Kementerian Pelajaran Malaysia, 2012). Since professional learning community is mentioned in the National Educational Development Blueprint 2013-2025 as school-based teacher professional development means (Kementerian Pelajaran Malaysia, 2012) and has been linked to improved student learning (e.g. DuFour & Marzano, 2009; Lambert, 2002), it would be important to find out how the relationship between these two variables is like.

5.6 Summary

As a whole, this study has achieved its objectives in which all the five research questions raised have been answered. Apart from that, it has developed an instructional leadership behavior measure that exhibited satisfactory validity and reliability. Correlation analysis found that all factors of instructional leadership behavior had significant relationship with school climate and teacher efficacy as expected. Regression analysis concluded the following findings: 1) instructional leadership behaviors namely, giving feedback, giving praise, encouraging and supporting diverse teaching and learning approach, emphasizing the study of teaching and learning, supporting collaboration efforts and initiating teamwork were predictors of school climate, 2) instructional leadership behaviors namely, giving feedback, making suggestions, encouraging and supporting diverse teaching and learning approach, doing action research to inform decision making, and supporting collaboration efforts were predictors of teacher efficacy, 3) school climate namely, student relations and collaboration were predictors of teacher efficacy, 4)

instructional leadership behaviors had a direct influence on teacher efficacy in which school climate failed to be a significant mediator in the relationship between these two variables.

The study has provided significant contributions to the body of knowledge in the field of educational leadership and management. Three theoretical implications and two practical implications were elaborated. The study has added a new instrument for measuring instructional leadership behavior besides supporting the construct validity and reliability of the other two instruments for measuring school climate and teacher efficacy in the Malaysian school setting. In terms of practical contribution, this study found evidence for better way of instructional supervision and teacher professional development that could lead to improved teacher efficacy.

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