Science and Mathematics Education Centre

Principal Leadership Style and Its Impact on School Climate and Teacher Self-Efficacy in Indonesian Schools

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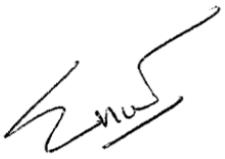
DECLARATION

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university. To the best of my knowledge and belief, this thesis contains no material previously published by any person except where due acknowledgement has been made.

Signature: 

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ABSTRACT

Principals' leadership behaviour has been identified as instrumental in terms of school effectiveness and a school's capacity for improvement. The lack of research in Indonesia related to the influence of the principal's leadership style on the school climate (a major factor that contributes to school effectiveness) and teachers' self-efficacy (influential in terms of organisational achievement) provided the impetus for the research reported in this thesis.

Given that there were no instruments available to assess principal leadership behaviour that were considered to be either psychometrically sound or met the needs of principals in the Indonesian context, my first imperative was to develop and validate a suitable instrument. The development of the instrument involved identifying key behaviours related to transformational leadership, based on sound theoretical and research underpinnings. During the development of the instrument, an expert panel made up of 25 principals was used to ensure that the items were culturally relevant and a good reflection of each construct. Once the new survey was developed, a pilot study involving 12 teachers from one high school was used to ensure the face value of individual items.

The main sample involved 604 teachers from 27 schools selected from across three Indonesian provinces (North Sumatra, West Sumatra and Middle Java). Data were collected using the newly-developed survey as well as two existing surveys (one to assess teachers' perceptions of the school climate and another to assess teachers' self-efficacy) that were modified to suit the Indonesian context. The data were analysed to establish the convergent, discriminant and concurrent validity of the three instruments. The results suggested that the surveys were valid and reliable when used with high school teachers in Indonesia.

To examine the hypothesised relationships between variables, structural equation modelling (SEM) using LISREL 8.30 was used. The first step involved an analysis of the measurement model (which specifies the relationships between the instrument properties). This step found that 10 of the 12 scales within the three questionnaires had good fit properties and that the research design had sound model fitness.

The second step involved testing the hypothesised relationships, which specified the correlation between latent variables employing path coefficient and *t*-value indices. The results of this step indicated statistically significant and positive relationships between the dimensions of the principal's leadership style, school climate and teacher self-efficacy; and between the school climate and teachers' self-efficacy. Specifically, the results indicated that two of the principal leadership scales (Professional Interaction and Intellectual Stimulation) influenced teachers' perceptions of Affiliation (collaboration and trust amongst teachers). Three principal leadership scales (Professional Interaction, Intellectual Stimulation and Moral Perspective) influenced teachers' perceptions of Goal Consensus (agreement on the school's mission and vision). Further, all of the principal's leadership scales influenced teachers' self-efficacy either directly or indirectly.

The present study made distinctive contributions as it is one of the first to be undertaken in Indonesia to examine the influence of the principals' behaviour on the school climate and teachers' self-efficacy. Methodologically, the study developed and validated an instrument for use in Indonesia to assess principals' leadership behaviour. In practical terms, the newly-developed survey could provide an expedient tool for gathering information that may guide principals in refocusing their behaviours. The results of the study provides opportunities for principals to plan, and to put into practice, effective transformational leadership behaviours aimed at improving the school climate and teachers' self-efficacy – both of which are strongly linked to successful school improvement.

DEDICATION

This thesis is dedicated to:

Rahmila Dapa, Elsya Nur Dapa, Anju Pritia Dapa and Winamora Dapa

My girls, my jewels

For all your understanding, sacrifice and encouragement

Adsondri Syofyan

My husband, my sweetheart

For replacing my role as a mother for much of the time

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The completion of this thesis is a great accomplishment in my life and, as with all things great, it is something that is not completed alone. Therefore, I wish to thank the many people who have been involved in my journey to complete it.

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RATIONALE FOR THE STUDY

1.1 INTRODUCTION

The 21st century has been hailed as an important era of school reform in Indonesia, during which new regulations and policies have been put in place to improve the Indonesian education system. Recent studies, however, have indicated that the implementation of the new system has been less successful than anticipated and that school leadership may be a contributing factor (Sofo, Fitzgerald, & Jawas, 2012). The importance of an effective school principal in promoting school reform is well documented in countries around the world; however, research related to the role of principal leadership would appear to have received limited attention in Indonesia. As a result, Indonesian policy-makers have relied on results and practices related to Western school systems, rather than learning from Indonesian-specific research and literature (Bjork, 2005). In many cases, the tendency to adopt research findings related to educational practices of Western systems has ignored the context and cultural differences (Chan & Sam, 2007; Hadiyanto, 2004). It is this lack of research, and the need for information relevant to the needs of Indonesia, that has provided the impetus for the present study. This chapter introduces the research using the following headings:

- Background to the Study (Section 1.2);
- Research Objectives (Section 1.3);
- Significance of the Study (Section 1.4); and
- Overview of the Thesis (Section 1.5).

1.2 BACKGROUND TO THE STUDY

This section provides information related to the education reform efforts in Indonesia and the role of school principals in leading schools to respond to this reform, including information about: the school reform taking place in Indonesia (discussed in Section 1.2.1); and the role and challenges of school principals in Indonesia (discussed in Section 1.2.2).

1.2.1 School Reform in Indonesia

As with many developing countries, Indonesia is determined to improve the performance of its schools. Before 1999, the Indonesian education system was highly centralised at the central government level. Decisions about the course content, selection of textbooks, teaching hours and other matters associated with public school governance were centrally determined by the Ministry of Education and Culture. School principals and teachers were afforded limited autonomy with respect to making decisions, including those concerning curriculum design and teaching methods (Jawas, 2008). The decision to decentralise the education sector was made as part of the wider structural changes taking place in Indonesia and was promoted by international agencies, such as, the World Bank and Asian Development Bank.

After the collapse of the Suharto regime in 1998, Law Number 22, 1999 (relating to regional governance), was enacted to bring about the decentralisation of the Indonesian Government. To support this decentralisation and subsequent autonomy within the education sector, two further laws were enacted; namely, Law Number 20, 2003 (known as the *Sistim Pendidikan Nasional* or the National Education System) and Government Regulation Number 19, 2005 (known as the *Standar Nasional Pendidikan* or the National Standard of Education) (Peraturan Pemerintah Nomor 19 Tahun 2005, 2005).

These two laws were designed to promote the autonomy of the education sector under the direction of local government at the district level. Given that autonomy is widely considered to be an important factor in influencing school effectiveness (Hariri, 2011; Heyward, Cannon, & Sarjono, 2011; Sofo et al., 2012; Suyanto, 2008), it was anticipated that the introduction of this law would speed up the process of improving education quality. By decentralising the education sector, it would be possible for school and community members to be involved in the decision making process, thereby ensuring that schools accommodated local needs (Amirrachman, Syafi'i, & Welch, 2009). As such, it was anticipated that schools would be better equipped to respond efficiently, effectively and flexibly to the needs of their students (Abu-Duhou, 2003; Azra, 2002; Sagala, 2004).

Autonomy is an important factor in influencing school effectiveness (Hariri, 2011; Heyward et al., 2011; Sofo et al., 2012; Suyanto, 2008). The following sections discuss two further regulations that have been introduced to aid the reform process: Government Regulation Number 19, 2005 (the National Standard of Education) (discussed in Section 1.2.1.1); and Law Number 20, 2003 (the introduction of the school-based management approach that was used to bring about the required changes within individual schools). This is discussed in Section 1.2.1.2.

1.2.1.1 The National Standard of Education

The National Standard of Education (Peraturan Pemerintah Nomor 19 Tahun 2005, 2005) was enacted as a guide for practitioners to support the autonomy provided to schools within the new education system. This regulation outlined quality benchmarks that were required to be met by each school and university, and was popularly referred to as *Delapan Standar Pendidikan* or the Eight Standards of Education. The eight areas that the national standard addressed were curriculum, passing grade of mastery, school process, assessment, human resources, facilities, management and funding. Given that my study was carried out at the high school level, this section refers only to the policy implementation and reform effort at this level.

The eight standards of education were developed to help schools to clearly understand their role as the primary decision-making units within the educational system. As such, each school was given the capacity and authority to identify its strengths and limitations as they responded to the new policies.

As a means of monitoring the reform efforts, local governments were made responsible for ensuring that all of the schools in their district achieved the benchmarks that were required by the national standards. At the time of writing this thesis, schools were evaluated every four years using a school accreditation assessment process, to determine the extent to which the eight standards had been met. Those schools that did not achieve the standards were given help and guidance by either the local or the central government. Those schools that achieved the eight national standards were given special treatment, in the form of additional funding

and assistance, to help them to achieve even higher standards and to become what was termed "an excellent standard school".

This policy was expected to have a positive impact on educational practice, as every school would be motivated to achieve accreditation. The involvement of school members and the community was considered to be central to the success of the school in terms of achieving accreditation. As such, it was anticipated that a school would be more likely to involve school members and the community if a school-based management (SBM) approach was adopted (Jawas, 2008). Research findings have suggested that gains in school decentralisation are likely to accrue when decentralisation reaches the 'last step in the chain', namely the school and the community of parents and teachers (Heyward et al., 2011). Therefore, in response to the anticipated decentralisation in 2001, school-based management (SBM) was introduced to schools throughout Indonesia, although it was not mandated at this time.

1.2.1.2 The Introduction of School-Based Management

The enactment of the National Education System (Law Number 20, 2003) can be viewed as a fundamental redefinition and restructuring of the Indonesian education system. The law provided schools with a degree of autonomy, in which local governments managed the schools within their geographical locations. Stipulations were also introduced to confirm the school's authority and its role in bringing about the reform efforts. For example, Law Number 20, 2003, Chapter 50 outlines that each local government was responsible for the primary and secondary schools' establishments, based on the site's excellence, and Chapter 51 outlines that the establishment of each individual educational organisation: pre-primary, primary and high schools are to be conducted by the principles of minimum service standard and school-based management (Peraturan Pemerintah Nomor 19 Tahun 2005, 2005). In this sense, this stipulation orders that Indonesian schools adopt a SBM approach (Sofo et al., 2012).

SBM is a management framework in which the school establishment becomes more school-based, student-centred and quality-focused, as a result of transferring the decision-making power to the school-level (Jin Li, November 2010). SBM involves

the devolution of responsibilities to schools to provide them with enhanced flexibility and autonomy in managing their own operations, resources and planning for school development. The implementation of SBM aims to encourage the decentralisation of authority and school self-management, which were seen as important in promoting school effectiveness. As such, the SBM approach allows a school to develop a management system that ensures the quality of learning and teaching (Shoraku, 2008; Sofo et al., 2012).

The reasons for implementing SBM, in response to the Indonesian school reform, were two-fold. First, the decision to implement SBM was political, as it was seen to provide a structure through which the decentralisation of the education system could be realised. Second, geographically, Indonesia consists of thousands of islands, hundreds of ethnic groups and very varied social lives and economic backgrounds. SBM has several strengths when used in an education system with different social or geographical backgrounds including: allowing teachers and parents to make decisions about education; making education more relevant by locating the decision-making power closer to where problems are being experienced; being less bureaucratic; and allowing decisions to be made more quickly (rather than being made through a long bureaucratic process) with greater accountability, as the school community has greater participation and authority (Jin Li, November 2010).

Along with the new policy, managerial and financial authority also was delegated to education boards at the district level. The school budget, derived from government subsidies, was determined by its immediate education board at the district level rather than at the central level. As part of the autonomy, schools were required to formulate their own annual plans and to implement appropriate programmes. The annual plans that were initially submitted to the central education board, were, under the new policy, submitted to the district government (Shoraku, 2008). In this sense, the role of school principal in leading the school plan and its implementation became more critical than it was under the old system.

Although the benefits of SBM have been well documented in other countries, its implementation across schools in Indonesia has not always met with success. Jawas (2008) purports many Indonesian school principals faced difficulties in implementing the SBM because they lacked the required leadership skills. In addition, Bjork (2005)

argued that the power and efficacy of the SBM approach, when implemented in Indonesia, was reduced because of the lack of skills not only at local school levels, but also at the local government level.

Past research has highlighted significant barriers that have challenged school principals as they moved to implement an SBM approach in Indonesia (Irawanto, 2009; Jin Li, November 2010; Usman, 2001). The lack of success in introducing SBM in schools in Indonesia has been attributed to the principal's leadership style, which is largely autocratic (Usman, 2001). The shift of power and responsibility and the change in management patterns have, according to Jin Li (November 2010), created uncertainties that have affected the behaviours, attitudes and beliefs of the school principals. Studies that have examined the challenges faced by principals when implementing SBM in Indonesia are reviewed below.

A study in Lombok found that principals were not given information that was either practical or reliable with respect to the implementation of SBM (Sumintono, 2007). Further, the principals tended to dominate information related to SBM, leaving teachers less knowledgeable about how and to what extent they could exercise the autonomy that they were given. To implement SBM successfully, both the principal and the teachers need to be informed of their rights and obligations with respect to the authority to formulate school plans and to develop curricula. However, for the most part, the principals and teachers involved lacked the practical skills and knowledge to exercise this authority, resulting in confusion (Shoraku, 2008).

Irawanto (2009) found that school principals often did not trust or allow their teachers to participate in decision making. Some lacked the ability to be involved in the administration of SBM and others were anxious that they were losing authority. Affected by the increased accountability, principals also were reluctant to lose personal power and control, especially in situations where they ultimately were held accountable for the school. This reluctance to lose control was, according to Usman (2001), also aggravated by the traditional, autocratic leadership style that was, at the time of writing this thesis, prevalent in Indonesia.

Given that the working relationship between teachers and school principals in Indonesian schools has, traditionally, involved a bureaucratic hierarchy rather than a

professional colleague relationship (Tilaar, 1988); the competition for power and resources between principals and teachers was, according to Jin Li (November 2010), inevitable. The strong traditional roles, involving the administrative control of Indonesian school principals, contradict the SBM paradigm. Therefore, the principals were expected to adopt new roles, as change agents, that would empower others to recognise and contribute their potential to increase organisational capacity in response to the new policies (Chen, 2008; Hallinger & Heck, 2010).

Bjork (2005) found that the local authorities in Indonesia, including school principals, did not have sufficient expertise or experience to handle the consequences of education autonomy (which requires public participation and shared decision-making). The former Minister of National Education, Mr Fadjar, agreed that the Indonesian government had not educated the school leaders to be independent in many aspects of school administration, such as in school leadership, instructional and curriculum development, school resource allocation and school stakeholder empowerment (Silverius, 2002).

Given the nature of the SBM, successful leadership required the principal to engage and encourage school members to become active and committed participants in evaluating and improving their school culture through shared decision making and developing school-based solutions to challenges (Leithwood & Jantzi, 1997). The findings of recent studies have suggested that the objectives of the national education reform and the reform processes in Indonesia were not reflected in the actual implementation (Sofo et al., 2012; Suyanto, 2008); and that this was due in part to the lack of capacity of the school principals to manage the changes required by the new regulations.

1.2.2 Role and Challenges of School Principals in Indonesia

The principal in Indonesian schools, as with other schools around the world, is the highest-ranking administrator and his or her role is fundamental to how well the teaching learning process is conducted (Kurland, Peretz, & Hertz-Lazarowits, 2010). According to the Departemen Pendidikan Nasional (2007), the responsibilities of a school principal include: ensuring that the teaching and learning activities are appropriate; guiding and assessing staff members; overseeing the administration of

the school; planning the development of the school's teaching and learning process; maintaining the facilities and infrastructure; and building good relationships within the school's environment, including the parents and wider community.

In carrying out his or her tasks, the role of school principal in Indonesia includes being a leader, manager, educator, administrator, entrepreneur, supervisor and the designer of the school's work climate (Peraturan Menteri Pendidikan Nasional Nomor 28 Tahun 2010, 2010). However, the roles that distinguish the principal from other staff members are that of manager and leader (Sudarya & Suratno, 2012). These roles are like two sides of a coin, each complementing the other. As a leader, the principal is required to expand the school's vision and mission and to articulate and communicate these in ways that motivate staff members to achieve them. Further, the principal's role as the leader is to understand the various strengths and shortcomings of the school, its resources and its particular conditions in reaching its vision (Peraturan Pemerintah Nomor 19 Tahun 2005, 2005).

As a manager, the principal has different responsibilities, including: planning and budgeting (for example, allocating the resources required for the schools' goals to be realised); organising and arranging staff (for example, delegating responsibility and authority to carry out the school improvement plan or creating policies and procedures that guide employees); handling and solving problems (for example, monitoring the school's achievement and results, identifying problems arising and organising ways to solve the problems) (Peraturan Pemerintah Nomor 19 Tahun 2005, 2005).

To effectively respond to the new education reform efforts, a school principal is expected to exercise leadership skills to develop the school's capacity for reform. However, according to Sudarya and Suratno (2012), Indonesian school principals are more likely to put their energies into the role of manager rather than the role of leader. The failure to adopt a leadership role would appear to be because many of the principals lack capacity as leaders (exacerbated by a recruitment system that selects principals on a political basis rather than on exhibited leadership skills).

The nature of change is significantly influenced by the practice of leadership (Leithwood, 1994). In Indonesia, to date, the principal's leadership style has been

largely autocratic or paternalistic which, according to Suryani, Vijver, Poortinga and Setiadi (2012) and Usman (2001), could account for the slow adoption of the new policies in Indonesia. It is possible that transformational approaches might provide an alternative leadership style, as practices associated with this approach foster autonomy and challenge work, both of which are required by the new system.

Setting school visions and goals and making the effort to achieve these visions and goals are important aspects in facilitating school improvement and change. Transformational leadership involves principals' behaviours that engage and encourage school members to become active and committed participants in evaluating and improving their school culture through shared vision and missions and developing school-based solutions to challenges (Leithwood & Jantzi, 1997). In response to the new policy, transformational leadership practices such as, holding high expectation of the teachers' ability to adopt the new system; demonstrating appropriate practices for teachers to follow; building and sharing the school visions; taking the initiative to support teachers; and valuing beliefs and attitude towards the implementation of change, might well be an effective means of leading the school to make changes (Heyward et al., 2011).

One of the principal's duties, as outlined by the Education Ministry in Indonesia, is to develop an appropriate work climate at the school (Peraturan Menteri Pendidikan Nasional Nomor 28 Tahun 2010, 2010). According to Dellar (1998), the school climate not only contributes to the understanding of a school's functioning, but it also can be an indicator of a school's preparedness for change and reform. As such, the school climate is likely to influence the extent to which new policies are operationalised in order to make a change. Fullan (2010) cites numerous studies that support the importance of climate in influencing the success of a school's efforts to change. Further, a focus on the school environment or climate has been advocated as one of the key ingredients in research into school effectiveness and school improvement (Gottfredson & Gottfredson, 1987; Miller & Lieberman, 1988).

To increase the organisational capacity and to allow the adoption of the changes required to bring about school improvement, principals are required to adopt a new role – as change agents. As a change agent, the principal should seek to empower others to recognise and contribute their potential (Fullan, 2010; Hallinger & Heck,

2010). Given that many Indonesian principals lack the ability to use the new authority to manage their schools and, in many cases, are afraid to make changes, it would seem unlikely that this will come about (see, for example; Amirachman, Syafi'i, & Welch, 2009; Kristiansen & Pratikno, 2006; and Silverius, 2002). The present study took place during this era of school reform, during which principals were expected to make changes in their leadership style to realise the reform efforts.

Within this backdrop, research has provided evidence to suggest that the principals of Indonesian schools lacked the capacity and skills to be able to bring about the required changes, which subsequently has impacted on the reform efforts (Silverius, 2002; Sumintono, 2007). This study sought to investigate, from an Indonesian perspective, the leadership behaviours that were most likely to influence the development of a positive school climate and promote teacher self-efficacy, both of which are important to effective school improvement.

1.3 RESEARCH OBJECTIVES

The overarching purpose of this study was to provide information related to the extent to which the principal's leadership style influenced elements of the school climate and teachers' self-efficacy, both of which were considered to influence a school's capacity to implement change. As such, the principal's leadership style was viewed as an independent variable that influences factors related to both the school climate and teachers' self-efficacy. Three research objectives were delineated to address this aim.

First, because past studies have not provided a sound questionnaire to be used to assess principal's leadership style in Indonesia, the present study sought to develop an instrument that was valid and suited to the Indonesian context. Therefore the first objective was:

Research Objective 1

To develop and validate a questionnaire to assess teachers' perceptions of the principal's leadership style.

As this study involved the use of two existing questionnaires which are originally from Western countries, it was important to ensure their suitability for use in Indonesian schools. To this end, the instruments were modified and translated into Indonesian to make them suitable for use in this context. To ensure that these versions were reliable and valid, the second research objective was:

Research Objective 2

To modify, translate and validate two existing questionnaires for use in Indonesia, to assess:

a. Teachers' perceptions of the school climate; and
b. Teachers' self-efficacy.

Finally, to provide insights into the associations between school leadership style, school climate and teachers' self-efficacy in Indonesian senior high schools, hypothesised relationships between the scales of each questionnaire, as illustrated in Figure 1.1, were examined.

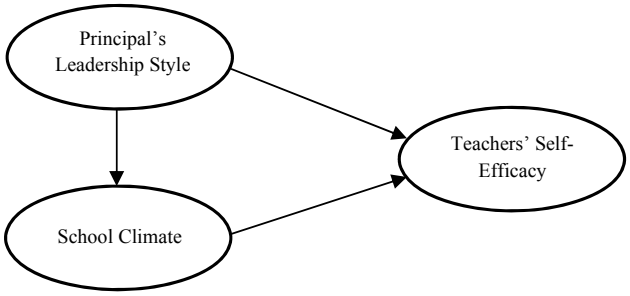

Figure 1-1: Hypothesised Relationships

To this end, the third research objective was:

Research Objective 3

To investigate whether associations exist between:

a. Teachers' perceptions of the principal's leadership style and the school climate;
b. Teachers' perceptions of the principal's leadership style and their self-efficacy; and,
c. Teachers' perceptions of the school climate and their self-efficacy.

These hypothesised relationships are expanded upon and justified in Chapter 3.

1.4 SIGNIFICANCE OF THE STUDY

Literature related to Indonesian leadership studies has indicated that the principal's leadership is pivotal to the success of new policy implementation at the school level. The implementation of the new policies and the programmes developed to help the schools to attain the eight national standards were, at the time of writing this thesis, being challenged by the capacity of the school principal's leadership (Irawanto, 2009; Sofo et al., 2012; Usman, 2001). Therefore, the result of the proposed study could be significant for several reasons, as outlined below.

This is the first study that develops and validates a questionnaire to assess teachers' perceptions of their principal's leadership style for use in Indonesia. During the questionnaire development, a comprehensive and rigorous construct validity framework was used to establish the reliability of the newly-developed survey. Using this framework, the questionnaire found to have high content, face, convergent, discriminant, predictive and concurrent validity, which could be replicated by other researchers.

The results of the study could provide information to the Ministry of Education and Culture (MOEC) of the Republic of Indonesia about existing school leadership styles and how they influence the school climate and teachers' self-efficacy. The results could be used to guide decisions to improve policies related to the school principal's role and professional development.

The result of this study may be useful to the 'Badan Akreditasi Nasional Sekolah/Madrasah (BANSM)' or the National Accreditation Body for Schools/Madrasah. The newly-developed questionnaire could be used by BANSM as a tool that would enable individual school principals to assess their leadership style

with a view to improving self-awareness of his or her behaviour (Church, 1997). This attribute is important as a principal who is more likely to assess his or her competencies accurately is generally one who is more aware of the job that he or she is doing as a principal (Yancey, 2002).

Finally, as the study investigated the influence of the principal's leadership style on the school climate and teachers' self-efficacy, it provides implications about elements of leadership that are likely to improve a school's effectiveness.

1.5 OVERVIEW OF THE THESIS

This first chapter provides an introduction and background to the present study. The chapter provides an overview of the reform efforts currently taking place in Indonesia and the role of the principal in realising these efforts. The chapter includes a rationale and outlines the purpose and the objectives of the study. Included in this chapter is information about how the results of the research reported in this thesis might be of significance to a range of stakeholders within the Indonesian education system, particularly with respect to the success of the new reform efforts.

Chapter 2 reviews the literature relevant to the present study. It reviews pertinent literature related to educational leadership, school climate and teachers' self-efficacy; highlighting the theory, the past research and instruments that have been developed to assess each. It introduces more widely recognised leadership styles, and provides a rationale as to why this study particularly chose transformational leadership style to be applied to school situations in Indonesia. A range of past instruments to assess principal leadership style, school climate and teacher's self-efficacy are explained and give the rationale for the development of a new questionnaire to assess principal leadership style, and selected existing instruments to assess school climate and teacher's self-efficacy.

Chapter 3 describes the research methods involved in the present study and details its procedural aspects. It describes the steps taken in the development of the new principal leadership style questionnaire. Also included in this chapter are details related to the sample and sampling techniques and the existing surveys that were used to collect data relating to the school climate, and teacher self-efficacy. This

chapter ends with a description of the data analysis used to address each of the research questions and details the ethical considerations made throughout the study.

Chapter 4 reports the results for Research Objectives 1 and 2. It reports the development of the new principal leadership questionnaire, providing a justification for each of the selected scales and the results of data collected to examine the face validity of the new survey. The results of the exploratory factor analysis, internal consistency reliability, discriminant validity and one-way analysis of variance (used to examine the ability of the individual scales to differentiate between the perceptions of teachers in different schools) are then reported. The chapter then reports the results of the analysis used to examine the reliability and validity of the two existing surveys used in the study.

Chapter 5 provides the analysis and results of testing the three research hypotheses. This chapter introduces the confirmatory factor analysis to test whether the three instruments used in the study were valid and reliable for SEM purposes. The process of structural equation modelling is explained to investigate whether associations exists between teachers' perceptions of the principal's leadership style, the school climate and their self-efficacy. The *t*-value and path coefficient assessment were used to test hypothesised relationships between the three main variables, and the chapter presents the final results of statistically significant relationships between leadership styles, school climates and teachers' self-efficacy.

Chapter 6 provides a summary and discussion of the study's findings. The implications of the study, in terms of how the principal's leadership style influences school climate and teachers' self-efficacy; and how school climate influences teachers' self-efficacy for Indonesian schools are highlighted, and practical suggestions for principals are provided. The chapter expands on the study contributions outlined in Chapter 1 and provides cautions with respect to the limitations of the study. This chapter concludes the study by offering suggestions for possible future studies.

Chapter 2

REVIEW OF THE LITERATURE

2.1 INTRODUCTION

This chapter reviews literature relevant to my study, which investigates the impact of leadership style on school climate and teacher self-efficacy. The review is organised using the following headings:

- School Leadership (Section 2.2);
- School Climate (Section 2.3);
- Teachers' Self-Efficacy (Section 2.4); and
- Chapter Summary (Section 2.5).

2.2 SCHOOL LEADERSHIP

This section reviews theory and research related to leadership and is divided into five parts, these being: the changing role of the school principal (Section 2.2.1); defining the term 'leadership' (Section 2.2.2); leadership styles (Section 2.2.3); and past instruments used to assess leadership (Section 2.2.4).

2.2.1 The Changing Role of the School Principal

As the highest-ranking administrator at either a primary or secondary school, the principal's role is fundamental to how well teachers teach and how much students learn (Kurland et al., 2010). The role of a school principal has become increasingly complex as the nature of society; political expectations; and schools, as organisations, have changed (Valentine & Prater, 2011). From the 1920s until the 1970s in countries around the world, the predominant role of school principals was that of an administrative leader. For example, as a nationwide trend of school consolidation, the desire was to imitate corporate management, and to ensure the political nature of schools so, during this era, the majority of school principals maintained the status quo (Hallinger, 1992). This managerial approach to leadership focused on the functions, tasks or behaviours of the principal and assumed that, if

this managerial approach were carried out competently, then schools would operate effectively (Leithwood & Duke, 1999).

During the 1980's, educators became disenchanted with many of the proposals coming from psychologists: for example, proposals for more testing, increased emphasis on basic skills, and refinement of pedagogical techniques; and they began to listen more carefully to the thoughts of sociologists (Owens, 2004). During this era, the role of the school principal was concerned largely with dealing with policy, daily operations and decision making that was guided by the functional needs of the school (Glasman, 1984). The measures of an effective school principal during this period included the ability to: communicate a vision of school goals and priorities to the school community; build parent and community support for the school; build a school culture conducive to learning; and develop curriculum and instruction objectives (Blum, Butler, & Olson, 1987).

During the 1990's, there was a move towards structuring schools to achieve school reform. The role of the principal during this period emanated largely from an organisational school of thought, driven by sociologists. The school was required to reflect a renewed understanding that interfaced with people within the school. Thus, the vernacular of school reform in the 1990s resounded with calls of empowerment and power sharing, 'reinventing' the school, school site management, restructuring the school, participative decision making, and humanising the school. These efforts required major changes within the organisation of the school to improve the growth-enhancing characteristics of its environment (Owens, 2004). The principal's roles during this period were identified by Myers and Murphy (1995) in terms of organisational control mechanisms, and included: supervision and input controls (e.g., hiring and firing personnel, teacher transfers, and budgeting); behaviour controls (e.g., job descriptions and textbook adoption) and output controls (e.g., student testing).

According to Hoerr (2005), a key component of the current role of the principal includes making changes, particularly with respect to school improvement and reform. As such, the school principal is required to develop a school strategic plan in which he or she sets the vision of the school and increases teachers' productivity by helping everyone within the school community to become more effective. It is

generally agreed that a principal who does not have a vision that is clear and well developed will find it difficult or impossible to be an effective leader (Owens, 2004).

Despite the complexity of the school principal's role, literature related to educational leadership provides implications for the school leadership in terms of school effectiveness (Leithwood & Jantzi, 2006; Owens, 2004; Retna & Tee, 2008; Sergiovanni, 2000). For example, the findings of past research indicate that to enable principals to know whether staff members function effectively in schools, a school principal has to stay abreast of emergent relevant studies of staff behaviour in a school (Owens, 2004).

Research is constantly modifying our understanding of the human experience of educational organisations around the world, including Indonesia (Bjork, 2005; Owens, 2004). As a developing country, Indonesia is subject to external influences in its educational development. For example, the World Bank and Asian Development Bank have recommended that the education sector move from a centralised system to a decentralised system (in line with other developing countries), in a bid to increase the quality, equality and efficiency of the education system (Amirrachman et al., 2009).

Over the past 25 years, United States Agency for International Development has provided millions of dollars in funding to improve the quality of basic education in Indonesia (Heyward et al., 2011). Further, Indonesia has introduced a curriculum that was developed by Western countries and uses Western standards to decide the level at which schools are functioning (known as 'high standard' or 'excellent' schools) (Sofo et al., 2012). Therefore, as a school leader, a school principal in Indonesia inevitably faces a career in which his or her responses are required to meet challenges that are affected by Western education achievement (Bjork, 2005). In view of this unyielding progression, a school principal needs to develop a set of values, beliefs, and principles to guide him or her in developing effective strategies and actions in an ever-uncertain future (Owens, 2004).

In relation to making changes, many studies agree that leadership is a key component of successful school improvement and reform, because the success of policy implementation, at the school level, has much to do with the nature and quality of

principal leadership (Engels et al., 2008; Kurland et al., 2010; Leithwood & Jantzi, 2006; Sergiovanni, 2000). According to Silcox, Cavanagh and MacNeill (2004) the disposition of the school principal leadership has a significant effect on school improvements or changes and therein lies the need for strong, on-going leadership for changes to be effective. It is with this in mind, along with the push for reform in Indonesia, that the present study emerged.

2.2.2 Defining the Term 'Leadership'

A review of the literature related to leadership indicates that there are a number of theoretical approaches that have been used to explain the complexities of the leadership process (e.g. Bass, 1990, Bryman, 1992 and Rost, 1991). Numerous definitions of leadership have been proposed over the years and Bass (1990) used these to create a rough scheme of classification. This scheme included nine concepts of leadership, these being: as a focus of group processes; as a matter of personality; as a matter of inducing compliances; as an exercise of influence; as a particular behaviour; as a form of persuasion; as a power relation; as an instrument to achieve goals; and as a combination of these definitions (Bass, 1990).

When viewed as the combination of concepts of leadership, some scholars have used several definitions of leadership to provide a larger set of meanings. Bogardus (1928), for example, described leadership as the creation and setting forth of exceptional behavioural patterns in such a way that other people respond to them. Jago (1982), on the other hand, described leadership as the exercise of non-coercive influence to coordinate the members of an organised group to accomplish the group's objectives. Bass (1985) described leadership as a person's ability to influence others to perform at a high level of commitment.

Despite the multitude of ways in which leadership can be conceptualised, the following components can be identified as central to the phenomenon, as described below (Northouse, 2010):

- Leadership is a process or a transactional event that occurs between the leader and the followers. The process implies that a leader affects, and is

affected by, his or her followers and that leadership is not a linear, one-way event but, rather, an interactive event.

- Leadership involves influence and is concerned with how the leader affects the followers. Without influence, leadership does not exist.
- Leadership occurs in groups, in which leadership takes place.
- Leadership includes attention to common goals. That is, a leader directs his or her energy towards individuals who are trying to achieve something together. Therefore the leader and the followers have a mutual purpose.

Throughout this thesis, the people who engage in leadership will be called *leaders* or *principals*, and those toward whom leadership is directed will be called *followers, teachers* or *staff members*. Leaders and followers must be understood in relation toward each other as well as collectively (Burns, 1978). They are in the leadership relationship together and, as such, are like two sides of the same coin (Rost, 1991).

2.2.3 Leadership Styles

Whereas the concept of leadership involves influencing others, leadership style can be defined as the art of influencing fellow human beings towards a direction which is of common good (Neumann & Neumann, 1999). Therefore, leadership style involves the traits, behavioural tendencies and characteristic methods of a person in a position of leadership (Neumann & Neumann, 1999). In the 1980s, researchers became interested in the way in which the leader transforms and revitalises organisations (Yukl, 1994). Many of these early studies demonstrated strong and consistent relationships between leadership style and an organisation's performance (see, for example: Pepper & Thomas, 2002; Valentine & Prater, 2011; and Yukl, 1999).

Different studies have examined effective leadership styles and attempted to classify them. Based on my review of the literature, this section provides a description of some of the more common leadership styles. In explaining these leadership styles, my emphasis is on how theory can inform the practice of leadership.

The more widely recognised leadership styles of which a comparison can be made to assess how they might be applied to school situations include: servant leadership (described in Section 2.2.3.1); authentic leadership (described in Section 2.2.3.2);

transactional leadership (described in Section 2.2.3.3); and transformational leadership (described in Section 2.2.3.4).

2.2.3.1 Servant Leadership

The notion of servant leadership was popularised by Greenleaf (1977) and has emerged in literature related to leadership studies (Stone, Russell, & Patterson, 2004). Servant leadership involves leading others from a perspective of placing the organisational purpose, the organisation's needs and the followers' needs over the needs and desire of the leader (Woodruff, 2004). Therefore, a servant leader often focuses on building the capacity of the followers with the intention of increasing the creativity and responsibilities of the followers (Stone & Patterson, 2005). According to Greenleaf (1977), the servant leader is often not initially motivated to be a leader, but assumes this position in response to the need for group success (Patterson, 2003).

Laub (1999) described six characteristics of a servant leader, these being: valuing people (listening respectfully, serving the needs of others first and believing in people); developing people (providing opportunities for learning, modelling appropriate behaviour and building up others through encouragement); building community (building strong relationships, working collaboratively and valuing individual differences); displaying authenticity (integrity and trust, openness and accountability, and a willingness to learn from others); providing leadership (envisioning the future, taking initiative and clarifying goals); and sharing leadership (creating a shared vision, sharing decision making power and sharing status and privilege with all levels of the organisation).

Even though the notion of servant leadership emerged more than four decades ago, efforts to measure the construct and study its effect on organisational outcomes have appeared only in the last decade (for example: Reed, Vidaver-Cohen, & Colwell, 2011; Liden, Wayne, Zhao, & Henderson, 2008; and Walumbwa, Hartnell, & Oke, 2010). Hunter et al. (2013) examined the utility of servant leadership across multiple organisational levels. They had expected that servant leadership would effectively enhance the organisation, particularly in a profit organisation. Jaramillo, Grisaffe, Chonko and Roberts (2009) maintained that servant leadership may be a particularly

effective style of leadership for instilling in and modelling to followers a genuine motivation to serve customers in a profit-making organisation.

Literature related to servant leadership indicates that although this leadership style has been found to be effective in a commercial setting, there is a lack of rigorous theory or research that has examined its usefulness in the school setting. Leithwood and Sun (2012) considered servant leadership as promising for school leaders even though the origin of this style of leadership was largely in non-school contexts. The notion of servant leadership has been met with varying, but usually limited, degrees of success in school settings.

2.2.3.2 Authentic Leadership

A review of the literature reveals that there is no single accepted definition of authentic leadership and that different authors use the term in somewhat different ways (see, for example: Bennis, 2003; Bennis & Thomas, 2002; George, 2003; Luthans & Avolio, 2003; and Terry, 1993). Certain elements, however, are shared by all writers with the notion that an authentic leader is portrayed as possessing self-knowledge and a personal point of view, which reflects their values and convictions.

The notion of authentic leadership was popularised by Shamir and Eilam (2005) who described it as an incorporation of a leader's knowledge, self-regulation and self-concept. They suggested that an authentic leader exhibits genuine leadership, leads from conviction and is original (not a copy of others). According to Shamir and Eilam (2005), an authentic leader does not employ his or her authority as a leader simply because he or she is in a leadership position. Indeed, for an authentic leader, the function of leadership and the related activities are self-expressive acts because he or she feels that these tasks are his or her duty. They further state that an authentic leader does not take on a leadership role or engage in leadership activities for status, honour or other personal rewards. Rather, he or she leads from a conviction that involves a value-based cause or a mission that he or she wants to promote. As a result, an authentic leader is interested not only in being all that he or she can be, but also in making a difference.

Finally, an authentic leader is original. That is, the process through which he or she has arrived at these convictions is not a process of imitation. His or her actions are based on his or her values and convictions. Therefore, what the leader says is consistent with what he or she believes. This suggests that an authentic leader has a high level of integrity and makes a point of being transparent.

Although authentic leadership has some strength and is intuitively appealing, there is limited research that examines whether this approach is effective, in what context it is effective and whether such a style results in productive outcomes in an educational setting. George (2003) argued that it was unclear how concepts and ideas related to authentic leadership have been presented in practical approaches. Similarly, Northouse (2010) criticised the theory in which an authentic leader is motivated by high values, justice and community; as it was not clear how authentic leadership could result in positive organisational outcomes.

2.2.3.3 Transactional Leadership

The notion of transactional leadership was popularised by Bass (1985), who viewed this style of leadership as an exchange relationship between a leader and his or her followers to meet the self-interests of those involved. In a transactional process, the leader and the followers reinforce each other's behaviour with either rewards or punishments, preferably rewards, which are contingent upon fulfilling the transacted role arrangement. Therefore, a transactional leader generally grants his or her followers rewards that satisfy immediate personal interests (Bass, 1999).

Avolio, Bass and Jung (1999) maintained that transactional leadership as attributes of contingent reward and management-by-exception. The contingent reward attribute is based on active and positive transactions between leaders and followers. There should, therefore, be clarification about what the follower should do to be rewarded. The management-by-exception attribute includes monitoring employee performance and taking corrective action when problems arise. Effective transactional leadership develops understanding and agreement about the leaders' and employees' roles in the process.

Research findings have indicated that transactional leadership in school settings may have a negative effect on teachers' creative behaviour because it focuses more on facilitating teachers' performance and less on stimulating innovation (Bass, 1985; Kim & Lee, 2011). The findings of studies that have compared transformational and transactional leadership suggest that transactional leaders are less likely to emphasise innovation than transformational leaders (Bogler, 2001; Bolkan & Goodboy, 2009; Kurland et al., 2010; Valentine & Prater, 2011).

Despite the probable negative effect of transactional leadership, Kim and Lee (2011) found that transactional leadership, with its practice of contingent rewards, can have a positive impact on job satisfaction and performance. For example, when leaders set clearly defined expectations and agreed-upon levels of performance, followers were more likely to achieve their goals. It was suggested, therefore, that leaders should consider the positive side of transactional leadership by including contingent rewards to foster their followers' job satisfaction and creativity (Kim & Lee, 2011).

2.2.3.4 Transformational Leadership

The concept of transformational leadership is based, for the most part, on the work of Bass (1985), who defines it as the synthesis of four dimensions or characteristics related to leadership, these being: charisma or idealised influence; individualised consideration; intellectual stimulation; and inspiration. The notion of charisma, as a leadership characteristic, is related to the followers' belief in a leader and the mission or vision that he or she has. As well, charisma is about the followers' admiration for, trust in, and devotion to that leader. A charismatic leader is considered to be one who is dynamic, hardworking, confident, competent and successful.

The individualised consideration dimension of leadership is related to the way in which a leader treats his or her followers, that is, whether the leader treats the followers differently based on their needs and capabilities. This leadership dimension is related to whether the leader is considerate of others and whether they display strong coaching behaviour and mentorship.

The intellectual stimulation dimension of transformational leadership refers to a leader who stimulates extra effort among his or her followers to rethink ideas,

challenge existing situations and to reframe problems. This dimension of leadership is displayed when the leader helps followers to become more innovative and creative (Bass, 1999).

Finally, the inspirational dimension of transformational leadership refers to practice that envisions a desirable future, articulates how it can be reached, sets an example to be followed, sets high standards of performance and shows determination and confidence (Bass & Avolio, 1990; 1993). This dimension is related to the leader's belief in his or her ability to make a difference by envisioning the future and creating an image of what the organisation can become. He or she inspires such a vision in their followers with a positive and hopeful outlook (Kouzes & Posner, 2002).

In addition to the leadership dimensions described above, Avolio et al. (1999) maintained that an effective transformational leader should include elements associated with a transactional style as part of his or her transformational approach. The full range of transformational leadership implies that every leader displays frequency of both transactional and transformational facets, however, each leader's profile will tend to involve more of one and fewer of the other. According to Avolio et al. (1999), leaders who are more satisfying to his or her followers and are more effective as leaders tend to display more transformational characteristics and less transactional characteristics (Avolio et al., 1999). As such, a transformational leader moves the followers beyond their immediate self-interests by stimulating their intellect, inspiring them and treating them individually. As such, a transformational leadership style makes allowances for the follower's level of maturity and ideals in order to promote achievement, self-actualisation, and the well-being of others, the organisation and society in general (Bass, 1990).

Although other researchers have delineated a variety of transformational leadership dimensions, some would appear to be more central than others (Hughes, Ginnett, & Curphy, 1996). Yukl (1999) described a transformational leadership as having the capacity to: emphasise values; share the fundamental aim of fostering capacity development; and enhance followers' levels of personal commitment to organisational goals.

The transformational leadership dimensions espoused by Jantzi and Leithwood (1996) would appear to be a combination of these previously described dimensions. They proposed that a transformational leader has the capacity to:

- build the organisation's vision and goals (behaviour on the part of the leader aimed at identifying new opportunities for his or her school, developing, articulating, and inspiring others with his or her vision of the future and building consensus on organisational goals and priorities);
- provide intellectual stimulation (behaviour that challenges staff to re-examine some of the assumptions about their work and to rethink how it can be performed);
- offer individual support (behaviour that indicates respect for staff and concern about their personal feelings and needs);
- symbolise professional practices and values (behaviour that sets examples for staff to follow in interactions with staff and students, and to demonstrate openness to change based on new understandings);
- demonstrate high performance expectations (behaviour that demonstrates the principal's expectations for excellence, quality and high performance on the part of staff); and
- develop structures to foster participation in decision-making (behaviour aimed at promoting staff involvement in decision making; and facilitating the distribution of leadership among staff).

The development of a survey for use in the present study was challenged by the literature on effective leadership and drew on the six key dimensions espoused by Jantzi and Leithwood (1996) outlined above. The explanation of how these dimensions were used in the development of the new survey is presented in Chapter 4.

Pereira and Gomes (2012) examined the effectiveness of transformational leadership by exploring the relationships between the capacity of the human resource, leadership, organisational climate and performance. The results suggested that a transformational leader: promotes group spirit by fostering identification with the organisation and promoting a collective identity among the followers; communicates

expectations and thus enhance the followers' feeling of self-efficacy; and acts as a behavioural model, that demonstrates the behaviours that are desired by the organisation.

Transformational leadership is different from other styles of leadership with respect to the leader's effect on his or her followers and the behaviour that is used to achieve this effect. The transformational leader influences and motivates followers by making them more aware of the importance of task outcomes and inducing them to transcend their own self-interest for the sake of the organisation. As a consequence, the followers feel trust, admiration, loyalty and respect toward the leader and they are motivated to do more than they originally expected to do (Yukl, 1999).

Past studies have compared different leadership styles to determine which is most effective. For example, the work of Kurland et al. (2010) examined the influence of the principal's leadership style on school learning organisation by using the school vision as a mediating factor. In this study, three categories of leadership style were examined, these being; transformational (focusing on instilling belief in the ability of others and generating positive emotions); transactional (focusing on granting followers rewards that satisfy immediate personal interests); and Laissez-Faire (representing the absence of transaction of any sort with respect to leadership and, as such, the leader avoids making decisions or using their authority). The findings reports in this study suggest that a transformational leader takes vision as a component of leadership that motivates people to higher levels of performance.

Similarly, other studies have compared transformational leadership with transactional leadership (Bogler, 2001; Bolkan & Goodboy, 2009; Leithwood, Patten, & Jantzi, 2010; Leithwood & Wahlstrom, 2008; Valentine & Prater, 2011). The findings of these studies suggest that in transformational leadership, the followers and their leader inspire each other to achieve higher levels of morality and motivation (Bass, 1985; Bogler, 2001; Bolkan & Goodboy, 2009). Transactional leadership, on the other hand, involves an exchange in which a leader and his or her followers enter the transaction because of an expectation to fulfil self-interest (Fullan, 2001; Hinkin & Schriesheim, 2008). A comparison of these two leadership styles indicates that a transformational leader bonds with his or her followers in a collaborative exchange process, thereby contributing to the organisation's performance as a whole.

A review of the literature related to leadership style indicates that transformational leadership is generally more favourable than transactional leadership and, therefore, is more preferable when bringing about and administering school improvement and change (Leithwood, Begley, & Cousins, 1992; Ross & Gray, 2006). Further, past research provides evidence to support strong links between transformational leadership and school effectiveness (Valentine & Prater, 2011).

As a result, the concept of transformational leadership has gradually moved to centre-stage in terms of educational leadership and is viewed as necessary for school improvement. Its concepts are considered to be relevant for educational leaders in the 21st century because, in this era, school leadership should primarily manifest itself for changes (Leithwood et al., 1992). In an era of school change, reform and restructuring, the view of the principal as a transformational leader has emerged as an effective approach (Leithwood, 1994).

Past research has examined relationships between transformational leadership and a range of student outcomes and the findings indicate that: the principal's leadership style has a significant influence on school conditions and a moderately significant influence on student engagement (Leithwood & Jantzi, 1999; Retna & Tee, 2008); and that there are nine principal leadership factors (Instructional Improvement, Curricular Improvement, Identifying a Vision, Providing a Model, Fostering Group Goals, Providing Support, Providing Stimulation, High Expectations, and Interactive Processes) that are statistically significantly associated with high achievement by students (Valentine & Prater, 2011).

Research has also examined whether relationships exist between transformational leadership and a range of outcomes related to staff members. The findings suggest that: the principal's leadership style affected teachers' job satisfaction, both directly and indirectly (Bogler, 2001); transformational leadership style had a more positive effect on the working environment of the teachers and staff members at the school than an authoritarian leadership style (Pepper & Thomas, 2002); the practice of transformational leadership had a positive influence upon the school community in shaping its culture, atmosphere and effectiveness; and there was a significant relationship between the principal's transformational leadership and teachers' self-efficacy (Kurt, Duyar, & Calik, 2012).

In summary, numerous studies have found strong and consistent relationships between the practice of transformational leadership and a range of outcomes at a variety of school levels (Bennis & Nanus, 1985; Bogler, 2001; Cerit, 2009; Engels et al., 2008; Leithwood & Jantzi, 2006; Leithwood & Wahlstrom, 2008; Tichy & Devanna, 1986; Valentine & Prater, 2011). It was this consistent relationship that encouraged me to examine the associations between principals' transformational leadership, school climate and teachers' self-efficacy in Indonesian schools.

The present study builds on and extends past studies of leadership style by developing a survey to assess the extent to which teachers in Indonesia perceive their principal to have a transformational leadership style. Given that, in Indonesia, the new policy requires that principals effect changes within the school and need to implement a school-based management approach, the transformational leadership style was considered to be the most appropriate style for use in the present study. The next section, therefore, reviews literature related to transformational leadership style and is effective in facilitating school-level change.

2.2.4 Past Instruments Used to Assess Leadership

There has been much progress in the conceptualisation and measurement of school leadership. Past studies have identified dimensions associated with different types of leadership and, to this end, a number of instruments have been developed. The following sections review five instruments that were drawn upon in the development of the new instrument used in the present study, these being: Leadership Practices Inventory (described in Section 2.2.4.1); Neuroticism Extraversion Openness Personality Inventory (described in Section 2.2.4.2); Leadership Trait Questionnaire (described in Section 2.2.4.3); Multifactor Leadership Questionnaire (described in Section 2.2.4.4); and Measure of Transformational Leadership (described in Section 2.2.4.5).

2.2.4.1 Leadership Practices Inventory

The Leadership Practices Inventory (LPI) was developed in 1993 by Kouzes and Posner. The LPI was designed to assess five leadership qualities: challenging the process; inspiring a shared vision; enabling others to act; modelling the way; and

encouraging the heart. The survey is available in two parallel forms; one that is responded to by the principal (Leadership Practices Self-Inventory) and the other that is responded to by the followers (Leadership Practices Inventory-Observer). The LPI has 30 items, with six items in each of the five scales developed to represent each of the five leadership qualities. The items are responded to using a five-point scale ranging from 'very seldom' to 'almost always'.

To provide evidence of construct validity for the 30-item LPI, the survey was administered to two groups, one involving a sample of 2,168 teachers and the other a sample of 30,913 teachers (Kouzes & Posner, 1993). The results indicated that the LPI has high face and predictive validity, meaning that the results not only made sense to people but also predicted whether a leader's performance was high, moderate, or low. Scores on the LPI were positively correlated with measures of a leader's credibility, effectiveness with upper management, team-building skills, work-group norms and actual levels of output (Kouzes & Posner, 1993). The reliability of the LPI was also determined by using test-retest reliability and Cronbach's coefficient alpha. The test-retest reliability for the five leadership scales was 0.93 or above, and the coefficient alphas for each of the five leadership scales ranged from 0.81 to 0.92.

Since its development, the LPI has been widely used to assess leadership traits within organisations, within both the business and education sectors (see example, Carless, 1998; and Jantzi & Leithwood, 1996). However, in a study of school settings by Abu-Tineh, Khasawneh and Al-Omari (2008) with a sample of 550 Jordanian public school teachers, the results indicated that the LPI could not differentiate between the experience levels of teachers. It was questioned if there might be a substantial gap in teachers' understanding of the influence of societal culture and context on educational leadership. This gap was considered to be particularly important for researchers in non-Western countries, such as Jordan, that were struggling to apply new knowledge and technology from the Western world and, at the same time, attempting to preserve its own cultural identity.

Despite the wide use of the LPI, its factor structure has not been established. Furthermore, the poor ability of LPI in differentiating the groups of Jordanian teachers in their perceptions of LPI dimensions led me to conclude that the LPI may

not be suitable in its entirety. However, some aspects of the LPI were drawn upon in the development of the new survey for use in Indonesia (see Chapter 4 for details).

2.2.4.2 Neuroticism Extraversion Openness Personality Inventory

The Neuroticism Extraversion Openness Personality Inventory (NEO-PI) was developed by McCrae and Costa (1987) to assess a five-factor model of a leader's personality: neuroticism, extraversion, openness, agreeableness, and conscientiousness. In general, these personality traits provide the following information about an individual (Silverthorne, 2001):

- a low score on the neuroticism scale indicates that the individual has emotional stability;
- a high score on the extraversion scale indicates that the individual is extraverted, while a low score indicates that the individual is more introverted;
- a high score on the openness scale indicates that the individual is open to experience, and is related to the individual's creativity and intellect;
- a high score on the agreeableness scale indicates that the individual is fundamentally agreeable and cooperative; and
- a high score on the conscientiousness scale indicates that the individual is conscientious with a strong sense of achievement.

The NEO-PI has 240 items, each responded to on a seven-point rating scale ranging from 'strongly disagree' to 'strongly agree'. According to Judge and Bono (2000), this instrument is the most widely used and extensively validated measure of personalities. A number of studies attest to the strong reliability and validity of the NEO-PI, which exhibits relatively high internal consistency, high test-retest reliability, and strong convergent and discriminant validity (see, for example: Gorostiaga, Balluerka, Alonso-Arbiol, & Haranburu, 2011; McCrae, 1982; and McCrae & Costa, 1987).

Although the NEO-PI has been used primarily to assess the personality of individuals in organisations, it has also been used to assess leadership effectiveness (Judge & Bono, 2000; Silverthorne, 2001; Wold, Esbensen, & Geladi, 1987). For example,

Judge and Bono (2000) used the NEO-PI to examine the links between five personality traits and transformational leadership with a sample of 316 leaders from over 200 organisations. It was found that the NEO-PI could predict a number of outcomes that reflected leader effectiveness. Judge, Bono, Ilies and Gerhardt's (2002) meta-analysis of 222 correlations from 73 studies involving the NEO-PI examined whether a correlation existed between a personality measure for leaders, and a criterion measure. The results showed that, overall, extraversion, conscientiousness, openness, and neuroticism were useful traits in relation to leadership and suggested the relevance of the five-factor model in leadership research.

The NEO-PI is available in variety of languages, including Portuguese, Hebrew, Chinese, Korean, Japanese, English and German (Judge et al., 2002). Furthermore, the NEO-PI has been used in many studies and in a variety of formats and names, for example, McCrae and Costa's Five-Factor Model (FFM, 1987), the Big-Five Questionnaire (BFQ, Caprara, Barbaranelli, & Borgogni, 1995); and the Hogan Personality Inventory (HPI: Hogan, 1986).

Although the NEO-PI relates more to personality than to leadership style, I drew on elements of this instrument in my newly-developed questionnaire (discussed in Section 4.2.1).

2.2.4.3 The Leadership Trait Questionnaire

The Leadership Trait Questionnaire (LTQ) was developed by Stogdill (1948) to assess traits or personal characteristics that contribute towards effective leadership. Stogdill identified eight traits held by individuals in various groups who became leaders: intelligence, alertness, insight, responsibility, initiative, persistence, self-confidence and sociability. Stogdill (1974) developed a second surveyand compared the findings of this study to the findings he had reported in his first survey. Whilst the first survey implied that leadership was determined principally by situational, rather than personality, factors; the second survey took the more moderate view that both personality and situational factors were determinants of leadership. In essence, the second survey validated the traits identified in the original survey, supporting the notion that personal characteristics are indeed important components of leadership.

Numorous studies related to leadership characteristics have identified traits considered important, with some traits appearing in several of the studies and others appearing in only one or two (see, for example: Kirkpatrick & Locke, 1991; Lord, Vader, & Alliger, 1986; Mann, 1959; Stogdill, 1974; and Zaccaro, Kemp, & Bader, 2004). These studies have demonstrated the difficulty involved in identifying and selecting definitive leadership traits.

The latest version of the LTQ involves 14 items in one scale (Zaccaro et al., 2004). Items are responded to using a five-point Likert scale ranging from 'strongly disagree' to 'strongly agree'. This version of the LTQ fits with the notion that a leader is an individual who is out in front and leading the way in his or her society. The instrument has a strong theory and research base and, according to the developers, the longevity and strength of this line of research gives the LTQ a measure of credibility (Zaccaro et al., 2004).

Northouse (2010), on the other hand, criticised the LTQ for failing to delimit a definitive list of leadership traits. Although, according to Northouse (2010), numerous studies related to leadership traits have been conducted over the past 100 years, the findings have been ambiguous and, at times, uncertain. futhermore, research related to leadership traits has failed to examine these traits with respect to leadership outcomes. Whilst research has emphasised the identification of leadership traits, it has not addressed how these traits affect group members and their work. Finally, the study of leadership traits has not proven to be a useful approach for either the training or the development of leaders. That is, even if definitive traits can be identified, teaching these traits is not an easy process, because traits are not easily changed. Despite these shortcomings, elements of the LTQ were drawn upon in the development of an instrument to assess teachers' perceptions of their principal's leadership behaviour in Indonesia.

2.2.4.4 Multifactor Leadership Questionnaire

The Multifactor Leadership Questionnaire (MLQ) was originally developed by Bass (1985), to assess leadership style and included seven scales: Charisma, Inspirational, Intellectual Stimulation, Individual Consideration, Contingent Reward, Management by Exception and Laissez-Faire Leadership. After a comprehensive analysis and

numerous reviews and critiques, Bass and Avolio (1993) modified the MLQ (subsequently named the MLQ 5X) to involve three scales: Transformational Leadership, Transactional Leadership, and Laissez-Faire Leadership. Each of these scales is described below.

The Transformational Leadership scale has five subscales: Attributed Charisma (the extent to which the leader makes personal sacrifices, deals with crises and obstacles, and exhibits self-confidence); Idealised Influence (the degree to which a leader is perceived as espousing important values, beliefs and a sense of mission); Inspirational Leadership (the degree to which a leader sets high standards and orients goals toward the future); Intellectual Stimulation (the degree to which a leader accepts the followers' ideas and encourages them to challenge the status quo by re-examining critical assumptions); and Individual Consideration (the extent to which followers perceive their leader as treating them as individuals, rather than as part of a group, and invests in their learning process).

The Transactional Leadership scale has three sub-scales: Contingent Reward (the extent to which a leader exhibits exchange related behaviour, in which rewards are contingent upon the followers' agreement to task performance); Management by Exception – Active (the degree to which a leader actively searches for followers' mistakes); Management by Exception – Passive (the degree to which a leader does not get involved in the followers' work, unless problems attract the leader's attention).

The Laissez-Faire scale has one scale, Laissez-Faire (the extent to which a leader exhibits 'non-leadership' behaviour or the perception of leadership inaction).

The 78 items of the MLQ 5X, distributed among the nine subscales, were pooled from several sources: selected items that provided the best convergent and discriminant validities after series of factor analyses from the MLQ (Bass & Avolio, 1990); selected items from an earlier version of the MLQ, developed by Howell and Avolio (1993); and new items that were developed by using recent literature that distinguished charismatic from transformational leadership. The items were responded to using a five-point frequency response scale ranging from frequently to not at all.

Based on its usefulness in a variety of settings, the MLQ 5X has been hailed as the most widely-used measure of transformational leadership (Hinkin & Schriesheim, 2008; Yukl, 1999). It has been used to investigate relationships between leadership style and followers' satisfaction (Bass, 1985; Bogler, 2001); school climate (Barnett, 2003, December; Pepper & Thomas, 2002); teachers' commitment (Ross & Gray, 2006); school reform (Sillins, 1992); and performance effectiveness (Bass & Avolio, 1994; Bryman, 1992).

Despite the use of the MLQ 5X across a number of studies, the factor structure has not been established. For example, in some versions of the MLQ four out of the five factors of transformational leadership: Idealised Influence, Inspirational Motivation, Intellectual Stimulation and Individualised Consideration, were found to be highly correlated to each other (Northouse, 2010). Another study by Tejeda, Scandura and Pillai (2001) involving 199 middle managers failed to support the hypothesised structure of the MLQ using both first- and second-order Confirmatory Factor Analyses (CFA).

Schriesheim, Wu and Scandura (2009) claimed that the MLQ 5X revealed problems related to both the construct validity and the level of analysis at which it measures its underlying constructs; that is, items within the instrument assess both the personal and group perceptions of teachers within the same construct. These findings were similar to Carless' (1998) study which presented evidence that the MLQ 5X assessed only a single construct of transformational leadership and that there was little evidence to support the contention that the MLQ 5X measured distinct transformational leadership behaviour. Given these underlying weaknesses, the MLQ was not considered suitable for my study. However, because the MLQ was based on sound theoretical and conceptual underpinnings, my study drew on elements of the MLQ in the development of the new questionnaire.

2.2.4.5 Measure of Transformational Leadership

The Measure of Transformational Leadership (MTL) was developed by Jantzi and Leithwood (1996) to assess the extent to which the school principal showed transformational leadership. The development of this instrument was based on empirical research by Leithwood (1994) and Leithwood and Steinbach (1995), and

aimed at adapting models of transformational leadership, developed in non-school contexts, for use in school contexts (Bass, 1985; Burns, 1978; Yukl, 1999). This instrument has six scales, developed to reflect transformational leadership dimensions: Identifying Vision, Providing a Model, Fostering Goal, Providing Support, Providing Stimulation and High Expectation. Items were responded to using a Likert scale ranging from 'strongly disagree' to 'strongly agree'.

The internal consistency reliability of the MTL across a number of studies was found to be high. Jantzi and Leithwood (1996) administered the MTL to 423 teachers in 147 elementary and secondary schools in Canada and reported alpha reliabilities ranging from 0.73 to 0.91 for different scales. In another study, they administered the MTL to 2,290 teachers from 655 primary schools and reported alpha reliabilities that range from 0.81 to 0. 85. A study by Valentine and Prater (2011) administrated the MLT to a sample of 443 teachers from 131 high schools in Missouri and reported alpha reliabilities ranging from 0.73 to 0.88. It is interesting to note that none of these studies reported the factor structure of the MTL.

The MTL has been used in a number of studies related to transformational leadership to test the effects of a school-specific model of transformational leadership on teachers (motivation, capacities and work settings) and their classroom practices. These studies found that transformational leadership has a positive impact on a teacher's motivation and classroom practices (Leithwood & Jantzi, 2006) and on students' achievements (Valentine & Prater, 2011).

Valentine and Prater (2011) used the MTL to investigate relationships between principal managerial, instructional and transformational leadership and student achievement. In this study, the MTL identified that principals' transformational leadership qualities were significantly related to student achievement. The result of the regression analyses suggested that increased levels of transformational leadership were positively related to student achievement.

The MTL has been field tested and refined over several stages (see, for example: Leithwood & Jantzi, 2000; 2006; Leithwood, Jantzi, & McElheron-Hopkins, 2006; and Leithwood & Wahlstrom, 2008). Despite the high internal consistency reliability reported across a number of studies, the lack of evidence related to the factorial

validity made this instrument unsuitable for use in my study. I did, however, use elements of this survey in the development of my own leadership questionnaire.

2.3 SCHOOL CLIMATE

Given that my study examined whether the principal's leadership style influenced the school-level environment or school climate, I reviewed literature related to: defining school climate (Section 2.3.1); past research on school climate (Section 2.3.2); and past instruments used to assess school climate (Section 2.3.3)

2.3.1 Defining School Climate

The terms school climate and school culture have often been described as overlapping concepts (Aldridge, Laugksch, & Fraser, 2006); however, as my study involved the assessment of the school climate, as perceived by teachers, it is worth distinguishing between the two. Hoy, Tarter and Bliss (1990) maintained that school climate is viewed from a psychological perspective whereas the school culture is viewed from an anthropological perspective. With respect to organisational studies, school climate is different from school culture, with the climate being viewed in terms of behaviour and culture as comprising the values and norms of the school or organisation (Heck & Marcoulides, 1996; Hoy et al., 1990).

The school climate has been defined in various ways, including: a social system of shared norms and expectations (Brookover et al., 1978); an environment of the school as indicated by the amount of students' negative or positive behaviour at school (Johnson, Johnson, & Zimmerman, 1996); a shared and enduring moral perception of psychologically important aspects of the school (Asif, 2011); and things that happen every day at school and the reactions that people have to those things (Manvell, 2012). The school climate, as discussed in the present study, is limited to school-level environment or psychosocial context, based on the teachers' perceptions of their work and teaching (Fisher & Fraser, 1990).

To guide my review of the literature and to examine the instruments that may have been useful to the present study, it was important to distinguish between the terms school-level environment and classroom-level environment (Rentoul & Fraser, 1983). The school-level environment was considered to be more global than

classroom-level environment. The school-level environment might involve a teacher's relationships with other teachers, the school administrators and the school principal; whereas classroom-level environment might involve relationships between teachers and their students or relationships among students. The school-level environment is commonly measured by assessing teachers' perceptions, as the teachers tend to know many aspects of the school-level environment; whereas classroom-level environment is commonly measured by using students' perceptions. As a further distinction, it was noted that school-level environment research tends to be associated with the field of educational administration, whereas classroom-level environment research generally examines students' perceptions of the characteristics of their classrooms. As such, school environment research is based on the assumption that schools are formal organisations and, therefore, draws on work environment scales to measure teachers' perceptions of aspects related to their school environment.

2.3.2 Past Research on School Climate

Past research has identified the school climate as a major factor that contributes to school effectiveness (Creemers & Reezigt, 1999; Dellar, 1998; Fisher & Fraser, 1990). Research findings indicate that improvement may be achieved by develop positive school climate, improving teachers' practice, and strong leadership by principals (Leithwood, 1999). Therefore, a positive school climate has become a goal of many programs aimed at school improvement (Wilson & Lipsey, 2007). Further, research has indicated that the prevailing school climate is valuable in determining the school's willingness and capacity to embark on improvement initiatives (Dellar, 1998).

Past research related to organisational climate has examined whether associations exist between the school-level environment and the classroom-level environment. The findings have been mixed with some reporting that links between the two environments do exist and that school organisation and management are important at the classroom-level (Rentoul & Fraser, 1983) and others reporting that the school-level environment does not necessarily influence the classroom-level environment (Aldridge, Fraser, & Laugksch, 2011; Dorman, Fraser, & McRobbie, 1995).

Past research has also indicated that a positive school climate is strongly associated with a number of important outcomes, including: students' self-concept (Cairns, 1987); lower levels of absenteeism (deJung & Duckworth, 1986); effective risk prevention and health promotion efforts (Cohen, 2001); and teaching and learning practice (Fisher & Fraser, 1991). Other studies have examined relationships between the school climate and the principal's leadership style (Lohwithee, 2010; Pepper & Thomas, 2002) and have found school climate to be related to a wide range of academic, behavioural, and socio-emotional outcomes, including academic achievement and students' personal attitudes (Anderson, 1982; Manvell, 2012).

The following reviews are examples of individual studies related to school climate and how they affect important outcomes. Macneil, Prater and Busch (2009) investigated the impact of the school-level environment on students' outcomes. A sample of 24,684 students and 1,727 teachers in 29 schools was used to examine whether relationships exist between the health of the school, as assessed by the Organizational Health Inventory, and student achievement. The findings suggested that students achieve higher scores on standardised tests in schools with healthy school-level environments.

Fisher and Grady (1998) investigated relationships between teachers' images of their schools and their perceptions of the work environment. Analysis of the data collected from 162 teachers in 48 schools in Australia revealed a strong relationship between the images that teachers have of their school and the perceptions that they have of their work environment.

Wahyudi (2004) examined the climate of schools in Indonesia using a sample of 131 teachers in urban, suburban and rural junior secondary schools and found that teachers viewed their school environment positively on all scales except for Staff Freedom. Urban school teachers viewed their school environment less favourably than did their counterparts in rural and suburban schools.

Collie, Shapka and Perry (2012) investigated relationships between teachers' perceptions of school climate (Collaboration, Student Relations, School Resources and Decision Making) and their social-emotional learning with a sample of 664 elementary and secondary school teachers. The results indicated that teachers'

perceptions of their school climate were strongly related to their social-emotional learning. The findings suggested that teachers' perceptions of students' motivation and behaviour were strong predictors of teachers' stress, efficacy and job satisfaction.

My review of the literature indicated that there was a paucity of research related to principals' leadership style and organisational climate in Indonesia (Bjork & Tsuneyoshi, 2005; Sofo et al., 2012). Therefore, this study aimed to fill this research gap and extend past research by examining whether those relationships exist in schools in Indonesia.

2.3.3 Instruments Used to Assess the School Climate

There has been considerable progress over the past sixty years in the conceptualisation, assessment and measurement of the school climate. My review of the literature indicates that a number of instruments have been developed to assess it. This section provides an overview of some historically important and contemporary instruments including: College Characteristics Index (Section 2.3.3.1); High School Characteristics Index (Section 2.3.3.2); Organizational Climate Description Questionnaire (Section 2.3.3.3); Work Environment Scale (Section 2.3.3.4); and School-Level Environment Questionnaire (Section 2.3.3.5).

2.3.3.1 College Characteristics Index

The College Characteristics Index (CCI) was developed by Pace and Stern (1958) to assess students' or teachers' perceptions of 30 environment characteristics of colleges or universities. Each of these characteristics, such as affiliation, aggression, deference, impulsiveness and order, was based on Murray's (1938) taxonomy which argued that motivation directs human behaviour and that personality could be understood only as the complex interaction of numerous interrelated processes (Triplet, 1992).

Parallel CCI scales were developed to examine environmental conditions that were likely to facilitate or impede students' or staff members' expression of their environment characteristics. Stern (1970) reported that, for a sample of 4,196 students and staff in 51 institutions in the US, the CCI scale reliabilities (KR-20

coefficients) ranged from 0.40 to 0.78. Despite the high scale reliabilities reported in these previous studies, the 30 scale factor structure had not been established and, therefore, this instrument was not considered suitable for the present study.

2.3.3.2 High School Characteristics Index

The High School Characteristics Index (HSCI) developed by Stern (1970) was an adaptation of the CCI to make it suitable for use with either students or staff members at the Grade 9 to 12 level. The HSCI used the same 30 environment characteristics as the CCI. When administered to 947 high school students in 12 schools in the US, the scale reliabilities of the HSCI (calculated using Kuder-Richardson Formula 20 coefficients) ranged from 0.28 to 0.77, and each scale differentiated significantly between the perceptions of students in different schools (Stern, 1970). A factor analysis of the 30 HSCI scales for the same sample revealed that seven factors accounted for 59 per cent of the variance: Intellectual Climate, Expressiveness, Group Life, Personal Dignity, Achievement Standards, Orderliness and Practicality. Examples of studies employing the HSCI include Herr (1965), Mitchell (1968) and Gardner (1976). It is noteworthy that the 300-item HSCI has been shortened to become the 61-item Elementary and Secondary School Index (ESI) which is suitable for the Grade 4-12 levels (Richman & Stern, 1979).

2.3.3.3 Organizational Climate Description Questionnaire

Halpin and Croft's (1963) Organizational Climate Description Questionnaire (OCDQ) was originally developed to describe the school climate from the teacher's perspective (Thomas & Slater, 1972). The original version consisted of eight dimensions, four of which described the characteristics of the faculty group and four that described the teacher-principal interaction (Hoy et al., 1990). The final version of the OCDQ contained 64 items that were responded to using a four-point frequency scale that ranged from 'rarely occurs' to 'very frequently occurs', to indicate the extent to which the behaviour described by each item was perceived as characterising a school.

Although the OCDQ was designed initially for use in elementary schools, it has been used in numerous studies at the secondary school level (Rentoul & Fraser, 1983).

The OCDQ has formed the focus for a number of factor analytic studies which have either replicated its original structure or have a new structure (Thomas & Slater, 1972). When it was administered to a sample of 1457 students and 359 teachers in 10 secondary schools in New South Wales, the alpha reliability coefficients for the 13 scales ranged from 0.71 to 0.92.

The OCDQ has been used in over 200 studies in at least eight different countries, making it possibly the most widely-used school climate survey. As such, it achieved bandwagon status in research in the field of educational administration (Thomas & Slater, 1972). Despite such widespread use of the OCDQ, few attempts have been made to validate it. Thomas (1976) reported that studies investigating the 'global' concept of climate have generally been critical of Halpin and Croft's prototypic profiles. There has been virtually no support for the factor structure of school climate categories that was first outlined by Halpin and Croft. One exception is a study with a sample of Canadian elementary and secondary schools by Morris (1964). Further, Smith (1966) and Vanderlain (1968) queried the value of the information the profiles purport to convey. In addition, the use of similarity scores in classifying school climate was criticised, as this method of classification seldom seemed to fit Halpin and Croft's profile description.

2.3.3.4 Work Environment Scale

The Work Environment Scale (WES) developed by Moos (1974a) was designed for use in any work milieu. However, the 10 scales of work environment have been used successfully to describe salient features of the school-level environment experienced by teachers. Its 10 scales represent Moos' three dimensions of human environment: the Relationship Dimension (Involvement, Peer Cohesion and Staff Support); the Personal Growth Dimension (Autonomy and Task Orientation); and the System Maintenance and System Change Dimension (Work Pressure, Clarity, Control, Innovation and Physical Comfort). The WES has a total of 90 items and is responded to using a true-false response format, with nine items in each of the 10 scales.

Analysis of data collected from 624 employees across 44 work groups in the US indicated that the internal consistency reliabilities for different WES scales ranged from 0.70 to 0.91 and that the magnitudes of the scales' inter-correlations ranged

from 0.05 to 0.59 (Moos, 1974b). It was reported in another study involving 154 teachers in 12 secondary schools from four Australian States, that three factor-analytic scales (Flexibility, School Rules and Assessment) were derived to measure teachers' perceptions of school environment. The alpha coefficients for these three scales ranged from 0.54 to 0.77 for the different scales (Bardsley, 1976).

In a study at a hospital setting, Røssberg, Eiring and Friis (2004) examined the psychometric properties of the WES with a sample of 640 staff members on 42 wards. Factor analysis identified that the psychometric properties of four out of the 10 scales of the WES were acceptable (Self-Realization, Workload, Conflict and Nervousness). The internal consistency reliability of the four scales using Cronbach's alpha coefficient ranged from 0.66 to 0.85. All of the scales were statistically significantly correlated with at least one satisfaction item. Despite the high reliability scores found in various studies, the 10-scale factor structure of the WES has not been established (Rentoul & Fraser, 1983), therefore this survey was not used in my study.

2.3.3.5 School-Level Environment Questionnaire

The School-Level Environment Questionnaire (SLEQ) was designed by Rentoul and Fraser (1983) to assess school teachers' perceptions of psychological dimensions of the school environment. It included eight scales: Affiliation, Student Supportiveness, Professional Interest, Achievement Orientation, Staff Freedom (originally named Formalisation), Participatory Decision-Making (originally named Centralisation), Innovativeness and Resource Adequacy. This instrument has 56 items that are responded to using a five-point scale ranging from 'strongly agree' to 'strongly disagree'.

The SLEQ satisfied several criteria to overcome potential problems associated with existing instruments. Past research has successfully modified, refined and validated the SLEQ, providing researchers with a widely-applicable, parsimonious and valid instrument to assess teachers' perceptions of the school-level environment. Modified versions of the SLEQ have been shown to be reliable in a wide range of studies in countries such as South Africa (Aldridge et al., 2006), Australia (Fisher & Grady, 1998), Taiwan (Huang & Fraser, 2009) and the US (Johnson, Stevens, & Zvoch,

2007). The results of these studies have indicated that the SLEQ scales have satisfactory internal consistency and discriminant validity.

The SLEQ has been used for a range of purposes including examining: relationships between pre-service teachers' attitudes and their perceptions of the school environment (Rentoul & Fraser, 1983); perception differences between students and teachers with different levels of experience (Huang & Waxman, 1995); differences between the perceptions of teachers in government and Catholic schools (Dorman & Fraser, 1996); patterns of transition from primary to middle school (Chung, Elias, & Schneider, 1998); teachers' perceptions of their work environment (Fisher & Grady, 1998); associations between outcomes and the school-level environment (Webster & Fisher, 2003); and associations between school-level and classroom-level environment (Aldridge et al., 2011; Dorman & Fraser, 1996).

Given that the SLEQ (Fisher & Fraser, 1990) has been used in a range of countries, and that studies have reported a strong factor structure and satisfactory internal consistency and discriminant validity (Johnson & Stevens, 2001), a modified version was used to examine the teachers' perceptions of their school-level environment in the present study.

2.4 TEACHERS' SELF-EFFICACY

Social learning theorists have described self-efficacy as a sense of confidence regarding a person's performance of specific tasks (Lorsbach & Jinks, 1999). Schwarzer, Mueller and Greenglass (1999) maintained that self-efficacy is the set of beliefs that a person holds about their ability to cope with life problems or stress. Bandura (1986) defined self-efficacy as people's judgement of their capability, and their ability to organise and execute a course of action required to attain a desired performance. Based on these definitions, self-efficacy is concerned not with the skills one has, but rather the judgement of what one can do with the skills that one possesses. As such, self-efficacy is a dynamic personal factor that influences a person's ability to act, and is a mediating factor between knowledge and behaviour. It is argued, therefore, that individuals develop general anticipation regarding cause and effect based upon their experience, and that individuals develop particular beliefs about their ability to cope with specific situations (Bandura, 1997).

Self-efficacy theory was derived from Bandura's (1986) social cognitive theory which provides an explanation of the complexity of human behaviour. This theory gives particular attention to the notion of cognitive processes which include how and what a person thinks, feels and believes and how these affect the person's behaviour. In terms of 'feeling', a low sense of self-efficacy is often associated with depression, anxiety and despair. Such individuals tend to have low self-esteem and a pessimistic outlook about their own accomplishments and personal development. In terms of 'thinking', self-efficacy is associated with a strong sense of competence and performance, including the quality of decision-making and academic achievement. In terms of 'actions', self-efficacy is associated with self-awareness, which is a major ingredient of motivation.

Bandura (1997) introduced the 'outcome expectancies' notion, which refers to the perception of the possible consequences of one's own actions. Someone who believes in his or her ability to produce a desired result is likely to have a more effective and self-determined life course. Therefore, a high sense of self-efficacy can enhance motivation. Individuals who have a high sense of self-efficacy are more likely to choose more challenging tasks, to set themselves higher goals and to commit to reaching those goals; than those who do not.

According to Bandura's (1986, 1997) social cognitive theory, individuals can develop their self-efficacy through four sources of capability-related information:

- their own actions, where successes are often interpreted as mastery experiences that can boost self-efficacy, and failure typically can lower self-efficacy;
- vicarious experiences, where individuals have an opportunity to witness the successes and failures of others and may thereby alter their self-efficacy;
- through social persuasions, where they may receive efficacy-relevant information from others, for example, evaluative feedback can be particularly useful when a task is ill defined or lacks objective criteria; and
- through physiological and affective states, for example, stress, fatigue, anxiety and mood can influence an individual's perceived capability.

Bandura (1986) argued that in educational settings teachers can exercise some influence over their own self-efficacy. He conceptualised teachers' self-efficacy as an individual teacher's belief in his or her own ability to plan, organise and carry out activities that are required to attain teaching and learning goals. Therefore, teachers with high academic self-efficacy would demonstrate greater success in teaching. Similarly, Skaalvik and Skaalvik (2010) argued that a teacher with a high sense of self-efficacy is more likely to trust in his or her own capability to master different types of environmental demands than a teacher who does not.

In the literature, the notion of 'teacher efficacy' is often used synonymously with 'teacher self-efficacy'. To avoid confusion, it is important that these two notions are distinguished as they are distinctively different constructs and should be defined and measured differently (Dellinger, Bobbet, Olivier, & Ellet, 2008). Teacher efficacy is a teacher's belief in his or her ability to affect students' performance or outcome, whereas teachers' self-efficacy belief is a teacher's individual belief in his or her capabilities to perform specific teaching tasks at a level of quality in a certain situation. This study examined teachers' self-efficacy as a significant measure for understanding and predicting teacher's behaviour and its consequences (Bandura, 1986).

Because self-efficacy is a motivational construct based on a self-perception of competence rather than the actual level of competence, a teacher's self-perceived level of competence may be either higher or lower than an external assessment of teaching skill. That is, a teacher who slightly overestimates his or her actual teaching skills can be effective, as their motivation to expend effort and to persist in the face of setbacks will help them to do their best with the skills and capabilities that they possess. The standards that teachers hold for what constitutes good teaching also will influence their sense of self-efficacy (Bandura, 1977).

These next two sections review literature related to research on teachers' self-efficacy (Section 2.4.1); and instruments used to assess teachers' self-efficacy (Section 2.4.2).

2.4.1 Past Research on Teachers' Self-Efficacy

The construct of self-efficacy has been studied extensively in the domain of education (Klassen et al., 2009). As discussed in the previous section, it has been well documented that self-efficacy beliefs influence a person's capability to interpret task demand and that a strong sense of personal efficacy is related to better health, higher achievement and more social integration (Bandura, 1997). The following are reviews of individual studies related to teachers' self-efficacy.

Lee, Cawthon and Dawson (2013) investigated the relationship between teachers' self-efficacy and pedagogical change using a sample of 11 primary teachers and 18 secondary teachers. This study involved a mixed-method approach, where the participating teachers were involved in a professional development programme that specifically sought to facilitate pedagogical conceptual change. The findings indicated that there were significant differences between elementary and secondary teachers in terms of self-efficacy for both teaching and pedagogical change. Further, the findings suggested that efficacious teachers positively impacted on students' outcomes across multiple disciplines and contexts.

Skaalvik and Skaalvik (2010) examined relationships between teachers' self-efficacy and burnout (emotional exhaustion and depersonalization). They examined the teachers' perceptions of the school context (time pressure, autonomy, relationship with parents, discipline problems, supervisory support) and their job satisfaction. Using a sample of 2249 Norwegian teachers in elementary and middle schools they found that teachers' self-efficacy was negatively related to both dimensions of burnout; and that the teachers' relationships with parents was the strongest predictor of both self-efficacy and burnout. Time pressure, on the other hand, was the strongest predictor of emotional exhaustion. All school context scales were indirectly related to job satisfaction through self-efficacy and burnout.

Guo, Justice, Sawyer and Tompkins (2011) examined how teacher characteristics (teaching experience, perceptions of teacher collaboration and teacher influence) and classroom characteristics (student engagement) predicted teachers' self-efficacy using a sample of 48 preschool teachers. The results found a significant interaction effect between teachers' perceptions of collaboration, and students' engagement in

predicting teachers' self-efficacy. Specifically, a higher level of students' engagement was associated with a higher level of teacher self-efficacy.

My study drew on Bandura's (1986) social cognitive theory, as it provides an expansive and well-established structure on which understandings about psychological functioning can be underpinned. My study related to self-efficacy research by examining the impact of principal's leadership style and school climate on teachers' self-efficacy in Indonesian schools.

2.4.2 Past Instruments Used to Assess Teachers' Self-Efficacy

This section reviews three instruments that have been used to assess teachers' self-efficacy: Teacher's Sense of Efficacy Scale (described in 2.4.2.1); Teacher Efficacy Scale (described in 2.4.2.2); and General Self-Efficacy Scale (described in 2.4.2.3).

2.4.2.1 Teacher's Sense of Efficacy Scale

The Teacher's Sense of Efficacy Scale (TSES) was developed by Tschannen-Moran and Hoy (2001) and was based on Bandura's (1977) theory to assess teachers' self-efficacy factors. The survey assessed three subscales Instructional Strategies (the extent to which teachers help their students to learn the material) these being; Classroom Management (teacher's strategies when working with a group of students) and; Student Engagement (the extent to which teachers can create a learning environment in which the students are motivated to be present, both physically and psychologically).

Tschannen-Moran and Hoy (2001) argued that there have been persistent measurement problems that have plagued those who have sought to study teacher efficacy. Therefore, they reviewed many of the major measures that have been used to capture the construct, noting problems that have arisen. The reliability and validity of the TSES was established in three separate studies. The first and second studies used the original version of the 18-item TSES with 217 teachers. They found that this 18-item instrument had good validity and the factors were conceptually sound representations of the various tasks of teaching. However, the weakness of the management factor as well as the strength of the instructional strategies and student

engagement factors led them to design a third study that would bolster these weaknesses and enhance the strengths of the instrument.

In the third study they designed two versions of the TSES, one with 12 items (short form) and the other with 24 items (full form) (Tschannen-Moran & Hoy, 2001). To further examine the appropriateness of calculating a total score for the 24 items (N = 111 teachers) and 12 items (N= 255 teachers), they conducted a principal-axis factor analysis specifying one factor. All items were loaded on this factor, with loadings ranging from 0.49 to 0.76 for the long form and from 0.49 to 0.75 for the short form. The reliability for the 24-item form was 0.94 and for the 12-item form was 0.90.

Lee et al. (2013) validated the TSES with a sample of 18 secondary and 12 primary school teachers. The internal consistency ranged from 0.84 to 0.89, and had an internal consistency reliability of 0.84 for individual subscales.

Although the Teacher's Sense of Efficacy Scale, validated by Lee et al. (2013), showed strong internal consistency reliability, it was developed to assess teachers' efficacy rather than teachers' self-efficacy. Therefore, this scale was not considered to be the right choice for my study which sought to assess teachers' perceptions of their self-efficacy.

2.4.2.2 Teacher Efficacy Scale

The Teacher Efficacy Scale (TES) was developed by Gibson and Dembo (1984) to assess teachers' self-efficacy beliefs. This scale was developed in accordance with Bandura's (1977) theory of self-efficacy. The TES consists of 30 items that were responded to using a Likert scale ranging from 'strongly disagree' to 'strongly agree' to indicate teachers' level of agreement with each individual statement.

Gibson and Dembo (1984) validated the 30-item TES with 208 teachers in 13 elementary schools. Factor analysis confirmed that it yielded the two subscales which corresponded to Bandura's theoretical model of self-efficacy. It was suggested that the TES had both convergent and discriminant validity and was able to differentiate between high- and low-efficacy teachers.

The TES is one of the most frequently used measures of teacher efficacy. Despite the extent of its use, however, studies have suggested that it has theoretical and psychometric issues (Dellinger et al., 2008). Some of these are: a lack of distinction between teacher efficacy and teachers' self-efficacy beliefs, resulting in various and discordant operational definitions of the construct (including confusion with stable self-constructs such as self-esteem, locus of control, self-concept, and outcome expectancy); a lack of consideration of specificity and generality of task behaviour; a failure to consider the context or situation specific nature of efficacy beliefs; and a failure to conceptualise and measure teachers' self-efficacy in terms of the multidimensional task requirements of teaching (Brouwers & Tomic, 2000; Dellinger et al., 2008).

Although the TES has been used frequently in international studies, this popularity was partly because of the use of the revised version that improved upon its shortcomings. For example, Neumann and Neumann (1999) used total scale scores created by combining all items, or both subscale scores. Also, Henson (2001), Housego (1992), Hoy and Woolfolk (1990), Soodak (1997) and Tournaki and Podell (2005) used both factors separately. Ross, Cousins and Gadalla (1996) and Scribner (1998 October-November), on the other hand, used only one of the factors.

Although there is a degree of confidence in the TES as a valid and reliable measure of teacher efficacy and teachers' self-efficacy, Heck and Marcoulides (1996) found that the TES had issues related to the lack of conceptualisation between teacher efficacy or teachers' self-efficacy and a lack of grounding in self-efficacy theory.

2.4.2.3 General Self-Efficacy Scale

The General Self-Efficacy Scale (GSES) was developed by Schwarzer and Jerusalem (1995) to assess a person's self-efficacy pertaining to his or her optimistic beliefs to cope with a variety of stressors. This scale was originally developed in Germany with 20 items and was later reduced to a 10-item version (Schwarzer & Jerusalem, 1995). The 10-item scale has proven useful in cross-cultural research, suggesting that the construct is universal and applies to a number of the cultures worldwide (Schwarzer et al., 1999). Further, studies have provided evidence to suggest that the instrument is reliable and valid across various field studies (Bandura, 1997; Maddux,

1995; Schwarzer & Jerusalem, 1994; Schwarzer & Jerusalem, 1995). The GSES is parsimonious and reliable and past studies have provided evidence of its predictive validity: for example, it correlates positively with self-esteem and optimism; and negatively with anxiety, depression and physical symptoms.

Rimm and Jerusalem (1999) validated an Estonian version of the GSES (ESES) with a sample of 670 participants (378 women and 292 men) consisting of three subgroups (290 healthy individuals, 228 mentally ill and 152 physically ill patients) and used it to assess relationships with psycho-emotional variables such as depression, anxiety, stress, affectivity, self-control and irrational beliefs. The psychometric properties of this Estonian version were satisfactory. A principal component factor analysis revealed a factor solution that explained 46% of variance and an Eigenvalue of 4.7, confirming the unidimensionality of the scale.

The GSES has been used in numerous research projects, where it has typically yielded internal consistencies between 0.75 and 0.91. Its stability has been examined in several longitudinal studies. For example, in a sample of 246 German cardiac surgery patients who filled out the measure once before surgery and once six months after recovery, the retest-reliability (r) was 0.67 (Schwarzer & Schroder, 1997). In a sample of 140 teachers in Germany, a stability coefficient (r) of 0.75 was found after one year (Taormina & Selvarajah, 2005). Over the same time period, 2,846 students in Germany filled out the scale twice, and a retest-reliability (r) of 0.55 was found. Finally, for a two-year period there were coefficients (r) of 0.47 for East German male migrants and 0.63 for their female counterparts (Schwarzer & Jerusalem, 1994).

Schwarzer et al. (1999) used the GSES to investigate perceived self-efficacy during an interactive computer session while surfing the Internet. A total of 1,437 computer users responded to the survey on the web, half of them below the age of 26. The factor analysis for the 10 items showed that the item loadings ranged from 0.75 to 0.87 and the internal consistency was 0.87.

Given previous and recent findings which report strong reliability and validity results for the GSES (Schwarzer et al., 1999), this instrument was selected to assess teachers' self-efficacy in the present study. To ensure contextual relevance, some modifications were made, and these are discussed in Chapter 4 (Section 4.5.1).

2.5 CHAPTER SUMMARY

This chapter provides a review of literature pertinent to the present study, including sections on school leadership, school climate and teachers' self-efficacy. A review of literature indicates that there are different theoretical approaches that have been used to explain the notion of leadership. Numerous definitions of leadership have emerged, they are: a focus of group processes; a matter of personality; a matter of inducing compliances; the exercise of influence; a particular behaviour; a form of persuasion; a power relation; an instrument to achieve goals; and that combinations of these definitions, have appeared. One popular definition of leadership is a person's ability to influence others to perform at a high level of commitment (Bass, 1985).

Leadership style can be defined as the art of influencing fellow human beings towards a direction which is for the common good. Some of the more common leadership styles in school settings are: servant, authentic, transactional and transformational leadership. The review suggested that transformational leadership was viewed as preferable for effective school improvement.

The study of leadership style has emerged as an important field of research since the 1980's. Early studies have demonstrated strong and consistent relationships between leadership style and an organisation's performance, including in educational settings. For example, associations between transformational principal's leadership style and school effectiveness (Bogler, 2001) and between transformational leadership style and the self-efficacy of teachers (Kurt et al., 2012; Pepper & Thomas, 2002) have been documented. Other studies have examined the impact of the principals' leadership styles (specifically transformational and transactional) on decision-making strategies (Bogler, 2001); teacher's job satisfaction (Kurt et al., 2012); and on students' achievement (Leithwood & Jantzi, 1999; Valentine & Prater, 2011). The findings have been relatively similar, indicating that the practice of transformational leadership has a positive influence upon the school community in shaping culture, atmosphere and effectiveness.

The school principal's leadership style is a key component of a school's effectiveness. Past studies have examined the roles of school principal and revealed that these have changed over time. The principal's role before the 1970s was mainly

as administrative leader, after which the role changed to one that became involved in policy and decision making for daily school operations. Currently, the role of school principals is viewed as the leader of school planning and as an agent of school change. To increase the effectiveness of a school, numerous studies have found a transformational leadership style to be most effective in terms of promoting change and school improvement (Bennis & Nanus, 1985; Bogler, 2001; Engels et al., 2008; Leithwood & Jantzi, 2006; Valentine & Prater, 2011).

Although scholars have described a range of features related to transformational leaders, it is widely recognised that this style of leadership is centred on the concept of a school leader engaging and encouraging school members to become active and committed participants in evaluating and improving their school culture through shared decision making and developing school-based solutions to challenges (Leithwood & Jantzi, 1997).

Transformational leadership has, in school contexts, occupied a central place in leadership research over the past three decades (Northouse, 2010). Jantzi and Leithwood (1996), purport that the most important features of transformational leadership involve: building a school vision and goals; providing intellectual stimulation; offering individual support; embodying professional practices and values; demonstrating high performance expectations; and developing structures to foster participation in decision-making. I used these dimensions, for the most part, as the theoretical base to develop a new questionnaire to assess transformational leadership style in Indonesian high schools.

A number of instruments have been developed to assess leadership style, these being:

- the Leadership Practices Inventory (Kouzes & Posner, 1993) (to assess leadership qualities considered to be important);
- the Neuroticism Extraversion Openness Personality Inventory (McCrae & Costa, 1987) (to assess the five leadership personality factors of neuroticism, extraversion, openness, agreeableness and conscientiousness);
- the Leadership Trait Questionnaire (Stogdill, 1948) (to assess the traits or personal characteristics that contribute to the leadership process);

- the Multifactor Leadership Questionnaire (Bass, 1985) (to assess the seven leadership factors of charisma, inspirational, intellectual stimulation, individual consideration, contingent reward, management by exception and Laissez-Faire);
- and the Measure of Transformational Leadership (Jantzi & Leithwood, 1996) (to assess transformational leadership).

Because past studies have not provided a clear indication of the reliability and validity of instruments used to assess leadership style, this study sought to develop an instrument to assess principals' leadership style that was valid and suited to the Indonesian context. The new instrument was based on this review of transformational leadership studies and drew upon dimensions from previously developed surveys as a starting point.

As this study also examined relationships between the principal's leadership style and the school climate, it was important to review literature related to school climate. The school climate is defined as the school-level environment or psychosocial context as seen through teachers' perceptions. The findings of past research suggest that school climate is a major factor that contributes to school effectiveness (Creemers & Reezigt, 1999; Dellar, 1998; Fisher & Grady, 1998; Fisher & Fraser, 1990; Johnston & Deer, 1984; Macneil et al., 2009). Past studies reveal that the school climate is related to: the school's willingness and capacity to embark on school improvement initiatives (Dellar, 1998); student self-concept (Cairns, 1987); lower levels of absenteeism (deJung & Duckworth, 1986); effective risk prevention and health promotion efforts (Cohen, 2001), teaching and learning practices (Fisher & Fraser, 1991); and a wide range of academic, behavioural and socio-emotional outcomes (Anderson, 1982).

A number of instruments have been developed to assess perceptions (generally the teachers') of the climate in educational settings, these being: the College Characteristics Index (Pace & Stern, 1958); the High School Characteristics Index (Stern, 1970); the Organizational Climate Description Questionnaire (Halpin & Croft, 1963; Thomas & Slater, 1972); the Work Environment Scale (Moos, 1974a); and the School-Level Environment Questionnaire (Rentoul & Fraser, 1983). My review of literature identified the School-Level Environment Questionnaire (SLEQ)

to be the most appropriate survey for my study. It has been used and validated for different occasions, and provided satisfactory internal consistency and discriminant validity (Johnson & Stevens, 2001). This study used a modified version of the SLEQ to examine teachers' perceptions of their school-level environment in Indonesia.

Finally, literature related to teachers' self-efficacy was reviewed. Self-efficacy theory is based on Bandura's (1986) social cognitive theory. Teachers' self-efficacy belief is defined as a teacher's individual belief in his or her capabilities to perform specific teaching tasks at certain situations. The findings of past research on teachers' self-efficacy indicated that teachers with high academic self-efficacy demonstrated greater success in teaching. Past research has also proven the impact of teachers' self-efficacy on many school factors, such as teachers' social integration (Bandura, 1997), on pedagogical change (Lee et al., 2013), on teachers' burnout (Skaalvik & Skaalvik, 2010) and on school climate (Fernet, Guay, Senécal, & Austin, 2012).

A number of instruments have been developed to assess teachers' self-efficacy, including the Teacher's Sense of Efficacy Scale (Tschannen-Moran & Hoy, 2001); the Teacher Efficacy Scale (Gibson & Dembo, 1984); and the General Self-Efficacy Scale (Schwarzer & Jerusalem, 1995). A review of the literature related to these instruments led me to select the GSES to assess teachers' self-efficacy in Indonesian schools (Schwarzer & Jerusalem, 1995). This instrument has been reported to have strong reliability and validity and has been used in many countries around the world.

The following chapter presents the research methods used to collect and analyse data in this study.

Chapter 3

RESEARCH METHODS

3.1 INTRODUCTION

Whereas the last chapter reviewed literature pertinent to the present study, this chapter details the research methods used to investigate whether relationships exist between teachers' perceptions of their principal's leadership style, the school climate, and their self-efficacy. Given that my review of the literature indicated a dearth of valid and reliable instruments to assess principal's leadership styles in the Indonesian school context, the development of such a questionnaire was pivotal to this study. This chapter describes the steps taken to develop the new instrument, and the methods used to collect and analyse the data to address each of the research objectives, using the following headings:

- Research Objectives (Section 3.2);
- Development of the Research Model (Section 3.3);
- Sample (Section 3.4);
- Development of the New Questionnaire (Section 3.5);
- Instruments (Section 3.6);
- Translation of the Instruments (Section 3.7);
- Data Collection (Section 3.8);
- Data Analysis (Section 3.9);
- Ethical Considerations (Section 3.10); and
- Chapter Summary (Section 3.11).

3.2 RESEARCH OBJECTIVES

The research objectives, introduced in Chapter 1, are reiterated here.

Research Objective 1

To develop and validate a questionnaire to assess teachers' perceptions of the principal's leadership style.

Research Objective 2

To modify, translate and validate two existing questionnaires for use in Indonesia, to assess:

a. Teachers' perceptions of the school climate; and
b. Teachers' self-efficacy.

Research Objective 3

To investigate whether associations exist between:

a. Teachers' perceptions of the principal's leadership style and the school climate;
b. Teachers' perceptions of the principal's leadership style and their self-efficacy; and,
c. Teachers' perceptions of the school climate and their self-efficacy.

The following section outlines the research model used in the study and the hypotheses that were delineated.

3.3 DEVELOPMENT OF THE RESEARCH MODEL

Based on the review of the literature presented in Chapter 2, the underlying assumptions of this study were that the principal's leadership style would influence both the school climate and teachers' self-efficacy, and that the school climate would influence teachers' self-efficacy.

Transformational leadership can be defined as the process of pursuing collective goals through the mutual understanding of the leader's and follower's motives towards the achievement of the intended change (Pawar & Eastman, 1997). Given that numerous studies have evidenced the positive effects of transformational leadership on school effectiveness (for example: Bogler, 2001; Cerit, 2009; Engels, Hotton, Devos, Bouckenooghe, & Aelterman, 2008; Leithwood, Begley, & Cousins, 1992; Leithwood & Jantzi, 2006 and Valentine & Prater, 2011); transformational leadership, rather than other styles of leadership, was examined.

More recent research has suggested that principal leadership is one of the most critical influences on school climate (Dellar, 1998; Kim & Lee, 2011; Pepper & Thomas, 2002). Given the importance of transformational leadership and the findings of past research, I hypothesised that:

Hypothesis 1:

> Transformational leadership would be positively associated with school climate. That is, the more the teachers perceived their principal to demonstrate practices associated with transformational leadership, the more favourable the school climate would be.

Past studies have found that transformational leadership has positive influences over organisational results through employees' behaviour, attitudes and performance (Ross & Gray, 2006; Yukl, 1999). In particular, research has found that transformational leadership contributes to improved teachers' self-efficacy (Kurt et al., 2012; Pereira & Gomes, 2012). It was hypothesised, therefore, that:

Hypothesis 2:

> The principal's leadership style would be positively related to teachers' self-efficacy. That is, the more the teachers perceive the principal's leadership style to be associated with transformational leadership behaviours, the more positive the teachers' self-efficacy would be.

Teachers perceptions of their working context influences their belief about their outcomes and social-emotional learning (Collie et al., 2012). In particular, past research has found the school climate to be related to a wide range of academic, behavioural, and socio-emotional outcomes, including teachers' self-efficacy (Anderson, 1982; Ashton & Webb, 1986; Fernet et al., 2012; Huang & Fraser, 2009; Manvell, 2012). Furthermore, research has indicated that the prevailing school climate influences the teachers' willingness and capacity to embark on school improvement initiatives (Dellar, 1998).

Therefore, this study hypothesised that:

Hypothesis 3:

> The school climate would be positively related to teachers' self-efficacy. That is, the more favourable teachers' perceptions of their school climate, the more positive their self-efficacy would be.

Based on these three hypotheses, Figure 3.1 depicts how each of the six psychosocial constructs of transformational leadership style (Professional Interaction, Participatory Decision Making, Individual Support, Intellectual Stimulation, Vision and Goals and Moral Perspective) individually influence each of the five school climate constructs (Affiliation, Work Pressure, Staff Freedom, Resource Adequacy and Goal Consensus) (Hypothesis 1) and teachers' self-efficacy beliefs (Hypothesis 2). Further, each of the five school climate construct was predicted to influence teachers' self-efficacy (Hypothesis 3).

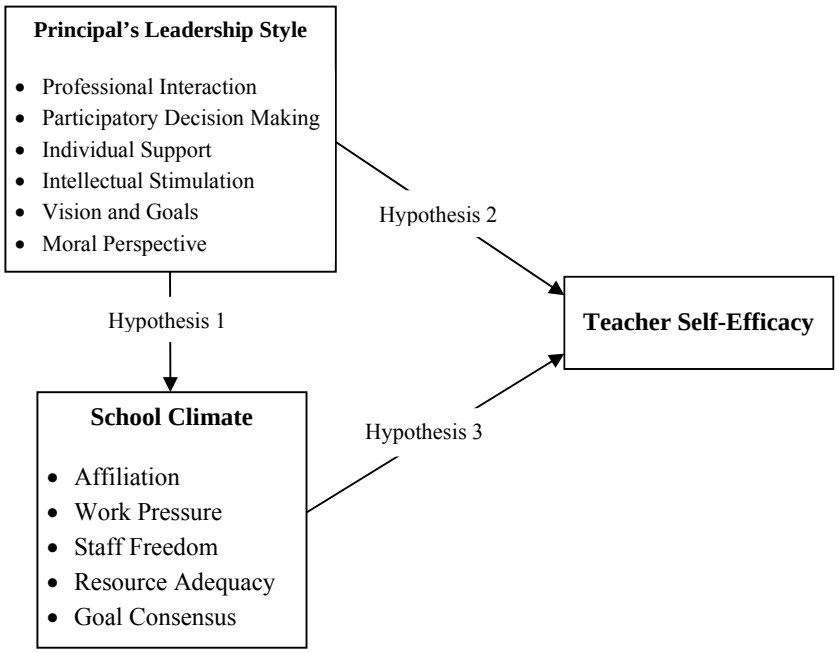

Figure 3-1: Research Model

3.4 SAMPLE

The sample for the main administration of the questionnaires involved 618 teachers from 27 public high schools in three provinces in Indonesia. The following subsections describe how the sample was selected in terms of: country and provinces (Section 3.4.1); districts and schools (Section 3.4.2); and teachers (Section 3.4.3).

3.4.1 Country and Provinces

The sample for the present study was selected from Indonesia because, firstly, it is the country where the author of this study was from; and, secondly, where the funding for the study originated. This choice of country was politically strategic, as I work for an educational institution in Indonesia and was expected to contribute to the understanding of the reform efforts being undertaken by my local government.

It was important to select a sample that included the most dominant ethnic groups in Indonesia, among them were Javanese (Java Island), Minangese, Batakese and Melayunese (Sumatera Island) (Suryadinata, Arifin, & Ananta, 2003). To ensure that each of these groups was represented, the sample was drawn from nine districts that were located across three Indonesian provinces: North Sumatra, West Sumatra and Middle Java. These provinces were selected for two reasons. First, selecting schools from these provinces was likely to increase the generalisability of the results of the study, as the selection of schools from diverse areas would ensure a range of social and ethnic groups. Second, the educational staff and schools in these provinces were familiar to me. Therefore, the possibility of access to the sites was increased.

3.4.2 Districts and Schools

To increase the variability of the sample, my study included schools from three districts within each of the three provinces. The selection of the districts was based on convenience, to ensure that the distances that needed to be travelled were minimised.

A range of schools was selected across the provinces and districts, taking the following points into consideration. First, given that the challenges for upper and lower high school principals are somewhat different, it was considered prudent to include only upper schools. Second, the size of the school was considered, to ensure that both large and small schools were included. Third, all of the schools were required to be within reasonable proximity to the capital of the three provinces (to enable access in a timely manner). Fourth, all of the schools needed to be at least five years old, to avoid schools that were not well established. Fifth, only schools whose principal had been in place for a minimum of two years were selected, to ensure that teachers were sufficiently familiar with his or her leadership style. Finally, only schools with accreditation were selected, having attained at least national standardised accreditation.

To further increase the generalisability of the results, the school's socio-economic background was considered, to ensure that samples from a range of both low and high socio-economic background were included. At the time of survey administration, those schools with 'international standardised' or 'international standard piloted' accreditations were considered to be of a high socio-economic background. Such schools were expected to improve the quality of national education by equipping their graduates with 'international competitiveness' in facing globalisation challenges (MONE 2007). To achieve the main objective of enhancing 'international competitiveness', these types of schools had to borrow and adopt the models of accreditation, curriculum, learning process, assessment, and school management from OECD member countries and were encouraged to create sister-school programmes with one of these countries' schools (Sakhiyya, 2011). Therefore, these schools were generally populated with students whose parents were able to afford to support the school programs.

A total of 27 schools were involved in the present study, of which seven schools were selected from North Sumatra (two of which were considered to have students from high socio-economic backgrounds and five with students from low socio-economic backgrounds); 15 were selected from West Sumatra (six of which were considered to have students from high socio-economic backgrounds and nine with students from low socio-economic backgrounds); and five schools were selected

from Middle Java (all of which were considered to have a high socio-economic background). Table 3-1 provides a break-down of the sample based on province, district, school and number of teachers in each.

Table 3-1: Sample Distribution of Schools and Teachers in the Three Indonesian Provinces

Province	Number of Districts	Social-Economic Background		Total Number of Schools	Number of teachers
		High	Low		
North Sumatra	3	2	5	7	181
West Sumatra	3	6	9	15	203
Middle Java	3	5	0	5	220
Total	9	13	14	27	604

3.4.3 Teachers

In each of the 27 schools, all of the permanent teachers who had been actively teaching at their school for a minimum of 12 months and were present on the day of administration were asked to respond to the questionnaires. The permanency of the teachers was considered to be an important factor as this would affect their knowledge of the principal's leadership style. This sample provided a total of 618 teachers, of whose 604 provided questionnaires that were complete and usable.

3.5 DEVELOPMENT OF THE NEW QUESTIONNAIRE

As discussed earlier, a review of the literature revealed that there were no questionnaires suitable for assessing principal's leadership style in the Indonesian context. Therefore, an important contribution of the present study was the development of a questionnaire to assess teachers' perceptions of their principal's leadership style (Research Objective 1) for use in Indonesia. This involved a three-stage approach, used successfully by Velayutham, Aldridge and Fraser (2011) of: (1) identifying and developing salient scales (described in Section 3.5.1); (2) modifying and writing individual items within the scales (described in Section 3.5.2); and (3) seeking advice from experts (described in Section 3.5.3).

3.5.1 Identification and Development of Salient Scales

The first stage, the identification and development of salient scales, involved three steps. The first was an extensive review of the literature related to principal's leadership styles to identify key components that were considered to be essential in elucidating factors related to the school principal as a leader of change for school improvement. This stage was undertaken to maximise content validity by basing the instrument on a sound theoretical framework. My review of the literature elucidated six key transformational leadership components identified for use in the present study and described in Section 2.2.3.4 on page 23-24 of this thesis.

The second step involved examining previously-developed instruments to determine whether their scales were useful for inclusion in the new instrument. The selection of salient scales from previous questionnaires was based on their pertinence to the key components identified in the literature review. This process included the examination of various transformational leadership instruments, including, but not limited to, the Multifactor Leadership Questionnaire (Bass & Avolio, 1990); the Principal Style Questionnaire (Stogdill, 1974), the School-Level Environment Questionnaire (Fisher & Fraser, 1990), the Transformational Leadership Questionnaire (Leithwood & Jantzi, 1999), and the Leadership Trait Questionnaire (Zaccaro et al., 2004).

The third step involved developing a set of preliminary transformational leadership scales based on steps one and two. The transformational dimensions, argued by Bass (1985) and developed by Leithwood and Jantzi (1999), were drawn upon for the new instrument. A description of the newly-developed instrument, along with a justification for each of the scales, is provided in Chapter 4.

3.5.2 Modifying and Writing Individual Items within the Scales

The second stage, writing of individual items within the scales, involved three steps. The first step was to adapt items used in past questionnaires and to develop items for the new scales, that were identified in the previous stage. Relevant scales and items from different instruments were selected according to their suitability for assessing teachers' perceptions of their principal's leadership style. Items were modified and refined from several leadership questionnaires pertaining to transformational

leadership. To ensure that all of the scales had at least eight items, additional items for each scale were developed.

The second step was to modify the existing items identified in step one. The wording of individual items was changed in ways that made them more concise, grammatically consistent, or culturally acceptable to Indonesian teachers. The last step was to compile these individual items into a single questionnaire. Care was taken to ensure that, within a given scale, items measured only the construct that the scale purported to assess and none of the other scales; and that items were conceptually similar to each other. Care was also taken with respect to time constraints to answer the questionnaire, to ensure that the number of items was acceptable. Finally, the instructions for how to respond to the questionnaire were written.

3.5.3 Seeking Advice from Experts

Once the individual scales and items had been translated into Indonesian (see Section 3.7 for information about the translation process), the expert opinions of 25 Indonesian school principals (with varying leadership styles) was sought. The principals, gathered at the time at a principals' professional development opportunity, were asked to read the definition of the scales and the individual items and to complete an evaluation form. The principals were asked to consider the adequacy of each of the items used to assess the scale, using a four-point rating scale of: very appropriate, appropriate but needs minor alteration, needs major alteration and inappropriate. If an item was considered to be appropriate but required minor or major alteration, then the principals were asked to provide suggestions for improvement. These evaluations were used to guide important decisions as to whether an item would be retained, revised or discarded. Appendix A provides a copy of the evaluation form given to the principals.

The final version of the newly-developed questionnaire, subsequently named the Principal Leadership Questionnaire (PLQ), is described in Chapter 4 along with information pertaining to the reliability and validity of the instrument. (See Appendix C and D, respectively, for a copy of the English and Indonesian versions of the PLQ.)

3.6 INSTRUMENTS

In addition to the newly-developed PLQ, two existing instruments were used to collect the data for the present study: the School-Level Environment Questionnaire, to assess teachers' perceptions of the school climate (described in Section 3.6.1); and the Teacher Self-Efficacy Scale, to assess teachers' perceptions of their self-efficacy beliefs (described in Section 3.6.2).

3.6.1 The School-Level Environment Questionnaire

To assess teachers' perceptions of their school climate, the modified version of School-Level Environment Questionnaire (SLEQ), developed by Fisher and Fraser (1990), was used. The SLEQ has eight scales, each of which has eight items. A review of the literature (see Chapter 2), indicated that the SLEQ was a reliable and economic tool to measure school climate (Huang & Fraser, 2009; Johnson et al., 2007). The reliability of the SLEQ when used in a range of countries including South Africa (Aldridge et al., 2006), Taiwan (Huang & Fraser, 2009) and the US (Johnson & Stevens, 2001) made it a suitable choice for the present study.

Before using the SLEQ to collect data for the main study, it was important to ensure that it was suitable for use with teachers in Indonesian secondary schools. First, the number of scales was reduced. This served to ensure that the time constraints experienced by teachers were less likely to influence the responses. Second, it ensured that they were meaningful in the Indonesian context. Care was taken to ensure that the remaining scales still covered the three dimensions outlined by Moos (1974a), these being the Relationship Dimension (Affiliation), Personal Development Dimension (Staff Freedom and Goal Consensus), and System Maintenance and System Change Dimension (Research Adequacy and Work Pressure) (see Chapter 2 for more information related to Moos's dimensions). Five out of eight original SLEQ scales (Fisher & Fraser, 1990) were selected to assess teachers' perceptions of their school climate in Indonesian schools, these being: Affiliation, Work Pressure, Staff Freedom, Resource Adequacy and Goal Consensus. A brief description of each of the SLEQ scales and a sample item is provided in Table 3-2. The modified version of the SLEQ used in this study had 40 items, with eight items in each of the five scales.

Table 3-2: Description and Sample Item for Each SLEQ Scale

Scale	Description	Sample Item
	The extent to which…	
Affiliation	Teachers can obtain assistance, advice and encouragement and are made to feel accepted by colleagues.	At this school I receive encouragement from colleagues.
Work Pressure	Work pressure dominates the school environment.	At this school I am under pressure to keep working.
Staff Freedom	Teachers are expected to comply with set rules, guidelines and procedures, and are supervised to ensure rule compliance.	At this school I am encouraged to be innovative.
Resource Adequacy	Facilities, equipment and resources are suitable and adequate.	At this school equipment and resources are adequate.
Goal Consensus	Teachers agree with and are committed to the mission and goals of the school.	At this school I am committed to the schools' goals and values.

Finally, changes were made to those items within the SLEQ that were negatively-worded (Work Pressure and Resource Adequacy). Although, historically, negatively-worded items have been used to guard against passive responses, Barnette (2000) argues that negatively-worded items are not direct opposites of their positively-worded counterparts. Furthermore, studies have revealed that using positively-worded items improves response accuracy and internal consistency (Chamberlain & Cummings, 1984; Schriesheim, Eisenbach, & Hill, 1991; Schriesheim & Hill, 1981). Therefore, the negatively-worded items were reworded to ensure that only positively-worded items were included.

To provide contextual cues and to minimise teachers' confusion, items were grouped together in blocks with all of the items that belong to the same scale grouped together rather than arranging them randomly or cyclically (as advised by Aldridge & Fraser, 2008). To give teachers confidence when completing questionnaires, the scales were sequenced so that more familiar issues (such as Affiliation) were placed before less familiar issues (such as Work Pressure). Teachers responded to each of the items using a five-point frequency format of Almost Never, Seldom, Sometimes, Often, and Almost Always. Copies of both the English and Indonesian versions of the modified SLEQ can be found in Appendix E and F, respectively.

3.6.2 The Teacher Self-Efficacy Scale

To assess teachers' self-efficacy, a modified version of the General Self-Efficacy Scale (GSES) based on Schwarzer and Jerusalem's (1995) scale was used. This scale has been shown to have satisfactory criterion-related validity and has been used in numerous correlation studies (Rimm & Jerusalem, 1999; Schwarzer, Bäßler, Kwiatek, Schröder, & Zhang, 1997; Schwarzer et al., 1999). For my study, individual items of the GSES were reworded to ensure their relevance to the Indonesian context and the scale was renamed the Teacher Self-Efficacy Scale (TSES). Whilst the original version of the GSES (Schwarzer & Jerusalem, 1995) assessed a teacher's ability to cope with life problems or stress in general; the TSES assessed teachers' perceptions of their self-efficacy within a school context. In addition the original items, which were considered to be long, were shortened to reduce confusion and provide a more economical instrument.

The TSES consisted of 10 items which were responded to using a five-point frequency response format of Almost Never, Seldom, Sometimes, Often and Almost Always. Copies of both the English and Indonesian versions of the modified TSES can be found in Appendix G and H, respectively.

3.7 TRANSLATION OF THE INSTRUMENTS

Given that the majority of teachers were not conversant with the English language, it was necessary to translate all of the instruments into Bahasa Indonesia, the national language. The questionnaires were translated using the rigorous process of back-translation to ensure accuracy, as recommended by Brislin (1970). The following steps were used in the translation of all three instruments.

First, each item of each of the questionnaire was translated from English into Indonesian by me. As the researcher and a native of the area, I could ensure that the terms and grammar were consistent with those used by teachers in the area. Next, the Indonesian versions were translated back into English by a Masters graduate in Indonesia, who was not familiar with the questionnaires but was fluent in both Indonesian and English. Finally, the original items were compared with the items that had been back-translated. Items that were found to have changed in meaning

were modified to ensure that the Indonesian translation had the same meaning as the original English ones. For example, one of the original English items read: "*I feel that I can rely on my colleagues for assistance if I need it*." My translation into Indonesian read: *"Saya merasa saya bisa* ***mengharapkan*** *bantuan teman sekolega kalau saya butuh"*. When back translated into English, the item read: *"I feel I can expect my colleagues to help me when I need."* The word *"mengharapkan"*, used in the original translation was interpreted to mean *hope*, which was changed to *"menghandalkan"*, which means *rely on*. The final Indonesian translation read: *"Saya merasa bisa* ***menghandalkan*** *bantuan teman sekolah ketika saya butuh"*, which was translated to: "*I feel I can rely on my colleagues for assistance when I need to"*.

Once changes were made, the process of back-translation was repeated to ensure congruence.

3.8 DATA COLLECTION

Data collection was carried out in two phases. The first involved a pilot study during which both quantitative and qualitative data were collected, and the second involved data collection for the main study.

The three questionnaires (the newly-developed PLQ, SLEQ and TSES) were pilot tested with a group of 12 teachers at one school, the selection of whom was based on their availability and their willingness to be involved. The pilot test was conducted for three reasons. First, it was necessary to ensure that technical matters such as clarity of instructions, timing and length of the questionnaires, were acceptable (Cresswell & Clark, 2007). Second, it was desirable to ascertain whether the layout of the items and the frequency-response scale were user-friendly (Cohen, Manion, & Morrison, 2000). Finally, it was important to examine the face validity of individual items. Munby (1998) argued that the most salient component of face validity is to determine comprehension by using a representative sub-sample.

The selection of the teachers for the pilot study was made in consultation with the principal of one of the participating schools. 12 teachers volunteered to participate in the two-phased pilot study that involved responding to the questionnaire's

administration and then, afterwards, responding to questions during an in-depth semi-structured interview. During the administration of the questionnaire; attention was paid to the amount of time spent and the participants' body language, to determine whether they required help, and their attitudes, to determine whether they felt ill at ease.

The subsequent semi-structured interviews helped to determine whether teachers had interpreted the items in ways that were similar to the researchers' intentions. The results of the pilot study for the three instruments are presented in Chapter 4.

Once satisfied with the changes made in response to the pilot study, the administration of the main study was carried out. As discussed earlier, to anticipate bias, only teachers who were present, met the criteria, and were willing to be involved were asked to respond to the three questionnaires. A total of 618 teachers were involved, but only 604 responses were complete and considered to be suitable for data analysis. Since the questionnaires did not require any personal details of respondents, the questionnaire results were directly grouped and coded according to the school from which they were collected to avoid confusion during the data entry process.

3.9 DATA ANALYSIS

The data collected from 604 teachers in 27 schools were analysed in various ways to answer each of the research objectives. First, analyses were carried out to examine the reliability and validity of the newly-developed PLQ and the two existing questionnaires, SLEQ and TSES using SPSS (described in Section 3.9.1). To investigate the associations between leadership style, school climate and teachers' self-efficacy, structural equation modelling (SEM), LISREL 8.30 (Jöreskog & Sörbom, 1996) was used (described in Section 3.9.2)

3.9.1 Validity and Reliability of the Instruments

To validate the newly-developed PLQ and the two existing questionnaires, the SLEQ and the TSES (Research Objective 1 and 2), analysis of the data was performed to examine the factor structure, internal consistency reliability and ability to differentiate between the schools.

For the PLQ and SLEQ, factor and item analysis were used to refine the instruments and to provide evidence of their convergent validity. In this study, principal component analysis with varimax rotation was used to reduce the dimensionality of the data set (Jolliffe, 2002). The two criteria used for retaining any item were that it must have a factor loading of at least 0.40 on its own scale and less than 0.40 on any other scale, as recommended by Field (2005). Only items that met these criteria were retained for subsequent analysis.

For all three of the instruments (the newly-developed PLQ, the SLEQ and the TSES), the internal consistency reliability of each scale within the three instruments was calculated using Cronbach's alpha coefficient for two units of analysis, the individual teacher and the school mean. The Cronbach alpha coefficient, developed by Cronbach (1951), is a widely-used method for assessing the reliability of a questionnaire in which alpha value ranges from 0 (inconsistent) to 1 (perfectly consistent). The Cronbach alpha coefficient was used to describe the extent to which items in a scale assess the same construct. The closer the coefficient is to 1, the more reliable the scale is, however, an alpha coefficient of 0.70 is widely considered to be acceptable (Bland & Altman, 1997).

Theoretically, teachers within the same school should perceive the leadership style and the school-level environment in relatively similar ways, while the school mean should vary from one school to another. To examine whether the scales included in the three instruments were able to differentiate between teachers' perceptions in different schools, a one-way analysis of variance (ANOVA) with school membership as the main effect was used. Two indices, related to the ANOVA results, the significance level and eta^2 statistic (the proportion of 'between' to 'total' sums of squares), were used to examine the proportion of variance explained by school membership.

3.9.2 Investigating the Associations between Leadership Style, School Climate and Teachers' Self-Efficacy

Research Objective 3 sought to assess the research model (described in Section 3.3) to investigate whether relationships exist between: (1) teachers' perceptions of the principal's leadership style and the school climate; (2) teachers' perceptions of the

principal's leadership style and their self-efficacy; and (3) teachers' perceptions of the school climate and their self-efficacy. To examine these hypothesised relationships, a research model was developed based on the retained scales and items during the factor analysis. The next steps, involving SEM using LISREL 8.30 (Jöreskog & Sörbom, 1996) were the assessment of the research model's overall fit (described in Section 3.9.2.1) and the testing of the hypotheses (described in Section 3.9.2.2).

3.9.2.1 Assessment of the Research Model's Overall Fit

The purpose of assessing a model's overall fit was to determine the degree to which the model as a whole is consistent with the empirical data (Diamantopoulos & Siguaw, 2000). Using the refined version of the instruments, based on the result of exploratory factor analysis, I examined the goodness of fit or fitness of the research model, to ensure the confirmatory power of the proposed hypothesised relationships. To do this, confirmatory factor analysis (CFA) methods were used to indicate whether the hypothesised model provided a good fit to the data (Hu & Bentler, 1998).

CFA was used for three purposes. First, CFA was used to determine whether the data confirmed the proposed five-scaled PLQ, four-scaled SLEQ and one-scaled TSE. The factor structure of each instrument was tested by examining their convergent value and discriminant validity. Second, CFA was used to examine the scale fit (construct measurement fit) and research model fit (Bagozzi, Yi, & Phillips, 1991). To measure the scale fit, three fit indices, generated by LISREL 8.30, were used, these being: the Root Mean Square Error of Approximation (RMSEA), Goodness of Fit (GFI), and Comparative Fit Index (CFI) as advised by Jöreskog and Sörbom (1996). CFA was used to measure the research model fit using five fit indices: the Root Mean Square Residual (RMSR), the Root Mean Square Error of Approximation (RMSEA), Goodness of Fit (GFI), Comparative Fit Index (CFI) and the Normed Fit Index (NFI).

Finally, the research model was confirmed by examining the coefficient of determination to ensure the confirmatory power of the hypothesised relationships, the contribution of each item to its scale and the relationship between scales of the same

questionnaire. The explanatory powers of the model were assessed by calculating the coefficient of determination (R^2) of the endogenous scales (Santosa, Wei, & Chan, 2005). Diamantopoulos and Siguaw (2000) maintain that a high multiple square correlation value denotes high reliability for the indicator concerned, therefore the higher the squared multiple correlation, the greater the joint explanatory power of the hypothesised antecedents.

3.9.2.2 Testing the Hypotheses

To test the hypotheses, the path coefficient (γ) and the *t*-value (*p*) of each hypothesised correlation were calculated. The path coefficient was used to examine the relationships between the variables in the model which, according to Shipley (2000), is the standardised version of linear regression weights which can be used to examine possible causal links between statistical variables during the structural equation modelling approach.

The *t*-value was used to test whether a single parameter was equal to zero (Diamantopoulos & Siguaw, 2000). The use of *t*-values on parameters understates the overall Type I error rate and, therefore, multiple comparison procedures must be used (Fornell & Larker, 1981). Therefore, to be considered significant, a parameter needs its *t*-value to be bigger than 1.96 and smaller than -1.96.

3.10 ETHICAL CONSIDERATIONS

A number of protocols and procedures were implemented to address potential ethical concerns and to ensure the participants' safety and confidentiality throughout the research. As a first step, ethics approval was sought from the Human Research Ethics Committee of Curtin University. (A copy of the ethics approval letter can be found at Appendix I) This section outlines the ethical considerations that were made at each stage of the study to protect the individuals who participated in this study, including: informed consent (Section 3.10.1); confidentiality (Section 3.10.2); and consideration (Section 3.10.3).

3.10.1 Informed Consent

Initially, permission to conduct the study was requested from the heads of education departments at both the provincial and district levels. The heads of department were provided with written information about the study, including details related to: the nature of the research; the nature and types of data to be collected; the role of this department for the survey administration; and a copy of the instruments to be administered. (A copy of the letter sent to the heads of the education departments can be found in Appendix J.)

Once approval was provided by the education departments, the schools to be involved in the study were selected. The principal of each of the selected schools was approached and provided with written information about the study and, if he or she expressed a willingness to be involved, was asked to complete a consent form. (See Appendix K for information related to the consent provided by the principal.) Once approval was provided by the principals of the schools, the day, time of questionnaire administration and details of the teachers to be involved were negotiated.

To anticipate bias, only teachers who were present and willing to complete the teacher questionnaire were asked to do so. All participating teachers were provided with written information which clearly stated their role as participants and the nature of the intended research. On the day of survey administration, the research was also described verbally to those teachers who volunteered to participate. The participating teachers were given the opportunity to ask questions about the research and were provided with the contact numbers of my supervisor and myself in case they had further questions. The teachers were reassured, both verbally and in writing, that they had the right to withdraw from the research at any time without prejudice or negative consequences and that no aspect of the research would be used in determining the performance of their schoolwork. (Copies of the information sheet and consent form that were provided to the participating teachers are provided in Appendix L.)

3.10.2 Confidentiality

Confidentiality was guaranteed to all participants by ensuring that their responses remained anonymous. No information was sought that could identify individual

participants and schools. During the data collection stages, participants were not asked to write their names or provide any other personal identity on the questionnaire paper. As such, they could not be identified during the study or in the reporting of the study.

Data related to the schools were coded numerically and used only for data entry and analysis purposes. At all times, data that identified individual schools were stored separately to the main data set and were accessible only to my supervisor and me. It was also made clear to the participants that the data would only be used for research purposes and in subsequent publications and conference proceedings.

3.10.3 Consideration

At all stages, cultural issues were taken into consideration. For example, to ensure cultural appropriateness, site-based issues were addressed at all phases of data collection. Since this research elicited responses from school sites that were located in different regions, the various cultural and spiritual beliefs were respected. In schools in which the majority of students and teachers were Muslims, the data collection was conducted on days other than Friday, to avoid clashing with religious activities held on that day.

When I approached the school principals, I ensured that appropriate electronic contacts were provided to them should they require further information. I encouraged the principals and their teachers to contact me directly at all phases of the survey administration. All of the participants were respected individually and were treated sensitively.

The questionnaires were administered at a time suitable to the schools. Completion of each questionnaire was estimated during the pilot study to be not more than 30 minutes, however unlimited time was allowed for the teachers who required longer.

3.11 CHAPTER SUMMARY

This chapter detailed the research methods used to achieve the three research objectives: to develop and validate a questionnaire to assess teachers' perceptions of their principal's leadership style; to modify, translate and validate two existing

questionnaires to assess school climate and teachers' self-efficacy; and to investigate whether associations exist between teachers' perceptions of the principal's leadership style, the school climate and their self-efficacy.

As the aim of the study was to investigate correlations between the variables used in this study, three hypotheses were delineated: transformational leadership would be positively associated with school climate; the principal's leadership style would be positively related to teachers' self-efficacy; and the school climate would be positively related to teachers' self-efficacy.

As a first step (to address Research Objective 1), a new questionnaire was developed to assess teachers' perceptions of their principal's leadership style. The method used to develop the new questionnaire involved a three-stage approach (Velayutham et al., 2011): the identification of salient scales that purport transformational leadership; adopting and modifying scales and items from previous relevant studies; and seeking expert opinions about the usefulness of the constructs and suitability of the items.

There were three instruments that were used to collect data for this study: the newly-developed Principal Leadership Questionnaire (PLQ); and two existing surveys, the School-Level Environment Questionnaire (SLEQ) and the Teacher Self-Efficacy Scale (TSES). The existing surveys were both modified to ensure suitability for the Indonesian context. All three instruments were translated into Indonesian using a rigorous process of back-translation method advised by Brislin (1970) to ensure that the translated items retain their original meanings.

Before the questionnaires were administered to the main sample, they were pilot tested with 12 high school teachers in one school. This involved the administration of the three instruments, and interviews with the participants to ensure the clarity and the comprehensibility of each item.

Administration of the questionnaires for the main study was carried out over a three-month period. The sample involved 604 teachers from 27 public high schools in Indonesia. Indonesia was chosen because it is the country where I am from, where the study was funded and whose government the study would be dedicated for. To provide a representable sample, the schools were drawn from three Indonesian

provinces: North Sumatra, West Sumatra and Middle Java. The selection of the schools in each province was based on convenience sampling techniques to ensure a timely collection of data.

To examine the validity and reliability of the PLQ and the SLEQ (Research Objectives 1 and 2), exploratory factor analysis involving principal components analysis with varimax rotation was used. The Cronbach alpha coefficient was calculated to provide a measure of internal consistency for each of the scales and a one-way ANOVA was used to determine the ability of each scale to differentiate between the teachers' perceptions in different schools.

To examine the relationships between the principal's leadership style, the school climate and the teachers' self-efficacy (Research Objective 3), a research model was developed by deciding potential hypothesised correlations between retained scales of the PLQ, the SLEQ and the TSE. The hypothesised correlations between these variables were tested by using structural equation modelling (SEM) using two stages.

The first stage involved confirmatory factor analysis and aimed to determine the goodness of the research model. In this case, the factor structure of a measurement instrument was verified by assessing their convergent and discriminant validity to ensure the accuracy and precision of the measurement procedure. Then the Scale-Fit model and the Goodness-of-Fit research model were measured by using fit indices generated by LISREL 8.30, as advised by Jöreskog and Sörbom (1996): RMSR, RMSEA, GFI, CFI and NFI.

The second stage was to test the research hypotheses using SEM. The associations between PLQ, SLEQ and TSES were sought by examining the *t*-value and *p*-values to determine whether a particular parameter was able to statistically significantly estimate the potential relationships between the hypothetically correlated scales.

To ensure the participants' safety and confidentiality throughout the research, ethics approval was sought from the Human Research Ethics Committee of Curtin University. Ethical considerations were made at each stage of the study to protect the participating individuals including: informed consent, confidentiality and consideration of cultural issues. The following chapter provides data analysis and the

results pertaining to the development of a new questionnaire assessing principal leadership style and the validation and modification of the three questionnaires which were used in this study.

Chapter 4

DATA ANALYSIS AND RESULTS: DEVELOPMENT AND VALIDATION OF MEASUREMENTS

4.1 INTRODUCTION

Whilst Chapter 3 describes the research methods used in the present study, this chapter describes the data analysis and the results pertaining to Research Objectives 1 and 2. The first research objective sought to develop and validate a new questionnaire (to assess teachers' perceptions of their principal's leadership style) and the second research objective sought to modify and validate two existing questionnaires (one to assess teachers' perceptions of their school climate and the other to assess teachers' self-efficacy). The findings related to these research questions are organised under the following headings:

- The New Questionnaire (Section 4.2);
- Pilot Testing the New Questionnaire (Section 4.3);
- Validation of the New Questionnaire (Section 4.4); and
- Modification and Validation of the Existing Questionnaires (Section 4.5);
- Chapter Summary (Section 4.6).

4.2 THE NEW QUESTIONNAIRE

Whilst details related to the steps used in the development of the new questionnaire were described in Chapter 3, this section reports the selection of the salient scales (Section 4.2.1); and creating and modifying individual items in the new questionnaire (Section 4.2.2).

4.2.1 Selection of Salient Scales

My review of the literature related to principals' leadership styles and, in particular, transformational leadership, helped me to identify important constructs to be used to assess teachers' perceptions of their principal's leadership behaviours. The features of transformational leadership, used to help to develop my questionnaire, were

derived for the most part from the work of Bass (1985) and Jantzi and Leithwood (1996). Based on my review of the literature, six features of transformational leadership were found to be important: professional interaction, participatory decision making, providing individual support, providing intellectual stimulation, articulating the school vision and goals and demonstrating moral perspective. Later, these key features of transformational leadership were used as the basis for the development of the scales included in the new questionnaire. Each of these features, and their importance in terms of effective principal leadership, are discussed below.

4.2.1.1 Professional Interaction

Professional interaction refers to the practice of building trust and engaging with staff members. In particular, this behaviour focuses on how a principal sets examples for his or her staff members to follow in terms of his or her manner towards, and interactions with other staff members (Valentine & Prater, 2011). The practice of professional interaction is considered to be important as it serves to strengthen the school's structure and the social networks within the school. As such, this behaviour is likely to promote positive relationships among people and groups within the school and between the school and its external constituents (Hallinger & Heck, 1996). Positive relationships between the leader and his or her followers will contribute to school effectiveness. For example enhanced staff support, trust and collaboration will facilitate implementation of innovations for change.

Professional interaction is considered to be important as it stimulates creativity, promotes growth and facilitates problem solving. This practice is evidenced in a range of school routines such as communication, motivation, goal setting, decision making and evaluating (Owens, 2004).

4.2.1.2 Participatory Decision Making

Participatory decision making refers to principals' behaviour that aims to promote staff involvement in decision making and facilitates the distribution of leadership among the staff members (Leithwood & Jantzi, 1997). Effective decision making within the school is reliant on the principals' behaviour because it is he or she who is responsible for establishing the decision-making process (Nutt, 2008). By promoting

participatory decision making, the principal is likely to develop shared meanings and values among staff members, which can strengthen the school's organisational culture (its norms, values, beliefs and assumptions). Reynolds, Sammons, Stoll, Barber and Hilman (1996) argued that the extent to which these norms, values, beliefs, and assumptions are shared contributes significantly to school effectiveness, particularly with respect to visions and goals.

To involve the school staff in decision-making, a principal needs to provide the appropriate information and to consider the ways in which members of the school use that information and how they are involved in decision-making. Therefore, the more information available within the school, the more effective school staff participation in decision-making will be (Westhuizen, Pacheco, & Webber, 2012).

4.2.1.3 Providing Individual Support

Providing individual support refers to the extent to which a principal respects the staff and is concerned about their personal feelings and needs. The principal's consideration of individuals, such as thoughtfulness for individual staff, coaching behaviour and mentorship, is considered to be paramount (Bass, 1985; Jantzi & Leithwood, 1996; Valentine & Prater, 2011). An effective leader is more likely to consider the needs of his or her individual followers, for example, encouragement and support of innovation and alternative problem-solving techniques (Avolio et al., 1999).

Parry and Proctor-Thomson (2002) maintained that a transformational leader can pay special attention to each follower's needs and differences through effective listening, developing potential and personalised interaction with them. Tyler's (1985) study evidenced that an effective principal increased staff members' morale and performance by supporting rather than directing them.

4.2.1.4 Providing Intellectual Stimulation

Intellectual stimulation is the ability of a leader to stimulate thought and imagination, problem awareness, and problem solving; and is considered to be a function of a person's technical expertise and intellectual power (Bass, 1985). This aspect of principal leadership refers to the practice of challenging staff to re-examine some of

the assumptions about their work and to rethink how it can be performed (Leithwood & Jantzi, 1997). This behaviour provides support to staff members for innovations that are aimed at facilitating the implementation of new ideas within the school (Avolio et al., 1999). Intellectual stimulation in transformational leadership is used as a means of shaping the social context in which the teachers work, and contributes to the improvement of their teaching performance (Pereira & Gomes, 2012). In the school context, the intellectual stimulation provided by a principal inspires extra effort among staff members to rethink ideas, challenge existing situations and reframe problems (Edwards, Schyns, Gill, & Higgs, 2012; Hinkin & Schriesheim, 2008).

4.2.1.5 Articulating Vision and Goals

Articulating the vision and goals refers to the principal's ability to provide and articulate a compelling and challenging target for individual and collective improvement efforts. The principal's ability to effectively articulate the school's vision and goals contributes to school effectiveness as this practice ensures that school staff understand the school's targets, both explicitly and implicitly (Heyward et al., 2011; Leithwood et al., 2010; Valentine & Prater, 2011).

According to Leithwood and Jantzi (1997), a principal should identify new opportunities for his or her school, and then develop, articulate and inspire others with this vision of the future. As such, the principal, with others, builds consensus on the school goals and priorities (Leithwood & Jantzi, 1997). Hughes et al. (1996) purport that an effective school principal is able to communicate his or her feelings and ideas, actively solicit new ideas from others and effectively articulate arguments, advocate positions and persuade others.

4.2.1.6 Demonstrating Moral Perspective

Morality can be defined as a personal characteristic dealing with principles of right and wrong with respect to conduct (Oxford Dictionary Online, 2014). A principal's moral perspective refers to his or her personal characteristics that provide a strong model for others to follow, and whether he or she behaves in ways that are consistent with the belief and values that are espoused at school (Leithwood & Jantzi, 1997;

Michel & LeBreton, 2011). Research suggests that a principal's moral perspective will influence how he or she enacts his or her role (Hallinger & Heck, 1996; Leithwood et al., 1992). Similarly, House, Woycke and Fodor (1986), purport that the personal characteristics of a charismatic leader (part of being a transformational leader) include having a strong sense of one's own moral values.

A transformational leader provides a role model for the beliefs and values that he or she wants his or her staff members to adopt; as a consequence, this role model can increase the teachers' feeling of respect towards him or her (Bass, 1985). A principal who reacts and behaves in ways that are morally acceptable within and across situations can enhance the integrity of his or her agenda as a school leader (Hipp & Bredeson, 1995).

These six characteristics important to transformational leadership, described above, formed the basis for the six scales that were comprised the new questionnaire, the development of which is described in the next section.

4.2.2 Creating and Modifying Individual Items in New Questionnaire

The development of the new questionnaire, based on the six characteristics of transformational leadership described above, involved scrutinising scales and individual items of existing questionnaires for suitability. Scales and individual items were selected from several leadership questionnaires, described in Chapter 2, including: six items from the Multifactor Leadership Questionnaire (Bass & Avolio, 1990); five items from the Style Questionnaire (Stogdill, 1974); six items from the School-Level Environment Questionnaire (Fisher & Fraser, 1990); 19 items from the Transformational Leadership Questionnaire (Leithwood & Jantzi, 1999); and four items from the Leadership Trait Questionnaire (Zaccaro et al., 2004). To ensure that the items selected from these surveys were suitable for use in Indonesia, many of them were modified. For example, one of the items adopted from Transformational Leadership (Leithwood & Jantzi, 1999) which read "*The principal in this school shows respect for staff by treating us as professionals"*, was refined to provide a more economical version, that read "*The principal in this school shows respect for me*."

In scales with fewer than eight items, additional items were developed. The final compilation of individual items resulted in 50, with at least eight in each of the six scales these were: Professional Interaction, Participatory Decision Making, Individual Support, Intellectual Stimulation, Vision and Goal and Moral Perspective. Table 4-1 provides a description and sample item for each of the scales in the newly-developed survey, subsequently named the Principal Leadership Questionnaire (PLQ). Each of the items were responded to using a five-point frequency format of 'almost never', 'seldom', 'sometimes', 'often' and 'almost always'.

Table 4-1: Description and Sample Item for Each Principal Leadership Questionnaire Scale

Scale	Description	Sample Item
	The extent to which the principal …	
Professional Interaction	Sets an example for staff to follow in his or her interactions with others.	The principal of this school is friendly towards me.
Participatory Decision Making	Involves staff members when making decisions.	The principal of this school provides opportunities for me to be involved in making decisions.
Individual support	Shows concern about the feelings and needs of individual staff members.	The principal of this school knows my strengths.
Intellectual Stimulation	Encourages staff members to re-examine how they teach and to rethink how they can perform their teaching practices.	The principal of this school stimulates me to think about what I am doing for my students.
Vision and Goals	Articulates and inspires others with his or her vision of the future.	The principal of this school is passionate about the school vision.
Moral perspective	Demonstrate personal characteristics that provide a model for the school staff members to follow.	The principal of this school is a good person.

Once the individual scales and items had been translated into Indonesian (the process for which is described in Section 3.7), expert advice about the questionnaire was requested from 25 Indonesian school principals. The principals were asked to evaluate the survey and to provide their opinions with respect to the scales and individual items in the questionnaire (see Section 3.5.3 for more information about the evaluation and the forms that were used).

Based on the principal's evaluations, two of the items were discarded and other items were re-worded in ways that made them more culturally appropriate for the

Indonesian context. For example, one item, *"The principal of this school respects me"* was considered, by many of the principals who made up the expert panel, to be culturally unacceptable. According to many of these principals, teachers should be those who respect the principal and not vice versa. To address this, the item was discarded. Another item, *"The principal **seeks** feedback from me in decision making"*, was considered to be contextually inappropriate, as the word *"seek"* implied that the principal did not have adequate knowledge to make decisions. To overcome this, the word *"ask"* was used instead. Therefore this item was reworded to read: *"The principal **asks** for feedback from me during decision making."*

4.3 PILOT TESTING THE NEW QUESTIONNAIRE

As discussed in Chapter 3, the newly-developed PLQ, together with two other existing questionnaires (the SLEQ and the TSES), was pilot tested with 12 teachers in one school. This section describes the results of the pilot test, including the administration of the survey (described in Section 4.3.1) and the interviews with teachers (described in Section 4.3.2).

4.3.1 Administration of the Survey

To determine whether there were problems or technical issues in responding to and completing the new questionnaire, a pilot study was carried out. The questionnaire was administered to 12 teachers (described in Section 3.8) and, as the teachers responded to the questionnaire, I observed their body language and attitude, to help to ascertain whether they experienced any problems. To help me to gauge whether problems existed, the teachers were invited to ask questions as they took the questionnaire.

Accurate information of the time required to complete the questionnaire was important to, first, anticipate or gauge participants' preparedness and willingness to be involved in the questionnaire administration; and, second, to accurately estimate the amount of time that I would need to spend at each school for the administration of the survey. The time taken to complete the three questionnaires varied between 20 and 40 minutes, with the majority of teachers taking around 30 minutes to complete them.

The questionnaire format as considered by the teachers to be user-friendly and the appearance of the questionnaire to be acceptable. The questionnaire layout, font size and question comprehension were all considered to be acceptable; however, the participants were not prepared for the length of the questionnaire, which some found to be excessive.

4.3.2 Interviews with Teachers

The 12 teachers involved in the pilot administration were also involved in focus-group interviews, held after they had completed the questionnaire. The interviews were conducted to examine the face validity of the individual items in the newly-developed questionnaire, that is, to determine whether the items were interpreted by the teachers in ways that were consistent with the intention of the researcher. During the interview process, one of the items: "*The principal of this school has a good relationship with me"* was reported to be ethically unacceptable. According to an interviewee, this item was understood to mean that *"The principal in this school has an affair with me"*. This item was changed to become *"The principal in this school attends social activities"*. With the exception of this item (which was replaced after consultation with local scholars), all of the remaining PLQ items were considered to be acceptable. For more examples of interview responses related to teachers understanding and interpretation of individual items see Appendix B.

The interviews were also used to ascertain whether the participants were able to use the response scale effectively. Interviews suggested that this was the case. Once the researcher was satisfied that the face validity and technical aspects were acceptable, the main administration of the questionnaire took place. The final version of the PLQ had 48 items with eight items in each of the six scales. (A copy of the final English and Indonesian version of the PLQ can be found in Appendix C and D, respectively.)

4.4 VALIDATION OF THE NEW QUESTIONNAIRE

The data collected from 604 teachers were used to examine the reliability and validity of the PLQ in terms of: factor structure (described in Section 4.4.1); internal consistency reliability (described in Section 4.4.2); and ability to differentiate between schools (described in Section 4.4.3).

4.4.1 Factor Structure

Factor analysis was used to examine the internal structure of the 48 item, six-scale PLQ. Principal components factor analysis with varimax rotation was used to generate orthogonal factors for the data set. The criterion used for retaining an item was that it must have factor loading of at least 0.40 on its own scale and no other scale (Steven, 1992).

A series of principal components factor analyses resulted in the acceptance of a revised version of the PLQ comprising 39 items in five scales. During factor analysis, one scale (Vision and Goal) and one item (Item 9 for the Participatory Decision Making scale) were lost, as these items did not meet the criteria and were omitted from all further analysis. The remaining scales were Professional Interaction, Participatory Decision Making, Individual Support, Intellectual Stimulation and Moral Perspective. All remaining items, with the exception of two, had factor loading of at least 0.40 on their own scale and no other scale. The two exceptions were Item 7, for the Professional Interaction scale (which loaded on its own scale as well as on the Individual Support scale) and Item 22 for the Individual Support scale (which loaded on its own scale and on the Professional Interaction scale).

Table 4-2 reports over page the factor loadings for the remaining 39 items of the PLQ. The percentage of variance, reported at the bottom of the table, ranged from 2.55% to 50.94% for different scales with the total variance accounted for being 67.1%. The Eigen value ranged from 1.00 to 19.87 for the five scales.

The results reported for the factor analysis strongly support the factor structure of the 39-item PLQ.

Table 4-2: Factor Loading for the Principal Leadership Questionnaire

No item	Factor loading				
	Professional Interaction	Participatory Decision Making	Individual Support	Intellectual Stimulation	Moral Perspective
1	0.60				
2	0.66				
3	0.66				
4	0.69				
5	0.66				
6	0.58				
7	0.42		0.41		
8	0.50				
10		0.76			
11		0.68			
12		0.76			
13		0.80			
14		0.77			
15		0.76			
16		0.61			
17			0.55		
18			0.56		
19			0.58		
20			0.62		
21			0.57		
22	0.45		0.54		
23			0.58		
24			0.47		
25				0.58	
26				0.68	
27				0.67	
28				0.75	
29				0.73	
30				0.72	
31				0.70	
32				0.73	
41					0.72
42					0.71
43					0.70
44					0.74
45					0.62
46					0.58
47					0.71
48					0.61
%	3.28	50.94	2.55	6.32	4.24
Variance	1.28	19.87	1.00	2.47	1.66
Eigen value					

Factor loadings smaller than 0.40 have been omitted.
N= 604 teachers in 27 schools

4.4.2 Internal Consistency Reliability

The Cronbach alpha reliability was used to check the PLQ's internal consistency reliability, that is, whether the items in a scale assessed a similar construct. As

explained in Chapter 3, the Cronbach alpha reliability coefficient was used as a convenient index of scale internal consistency and was generated for each scale of the PLQ using both the individual and school mean as the unit of analysis. In this study, the Cronbach alpha coefficient for each of the five scales of the PLQ, reported in Table 4-3, ranged from 0.89 to 0.95 with the individual as the unit of analysis and from 0.95 to 0.98 with the school means as the unit of analysis. These figures, according to Bland and Altman (1997), indicate that the five scales of the PLQ were reliable in terms of internal consistency reliability.

Table 4-3: Internal Consistency Reliability for each PLQ Scale using the Individual and School Mean as Units of Analysis

Scale	No of items	Unit of analysis	Cronbach Alpha Reliability
Professional Interaction	8	Individual	0.89
		School Mean	0.95
Participatory Decision Making	7	Individual	0.94
		School Mean	0.98
Individual Support	8	Individual	0.94
		School Mean	0.97
Intellectual Stimulation	8	Individual	0.95
		School Mean	0.98
Moral Perspective	8	Individual	0.91
		School Mean	0.96

The sample consisted of 604 teachers in 27 schools

4.4.3 Ability to Differentiate Between Schools

It was assumed that teachers in the same school would have similar perceptions of the leadership style of their principal, but different from the mean perceptions of teachers in other schools. Therefore, to determine whether the PLQ could differentiate between the perceptions of teachers in different schools, an analysis of variance (ANOVA), with school members as the independent variable, was conducted. The results, reported in Table 4-4, suggest that all five PLQ scales were able to differentiate between the perceptions of teachers of their principal's leadership style in different schools. The eta² statistic (an estimate of the strength of association between school membership and dependent variable of leadership style scales) ranged from 0.19 to 0.27 for different PLQ scales. These results indicate the ability of each PLQ scale to differentiate between the perceptions of teachers in different schools.

Table 4-4: Ability to Differentiate between Schools (ANOVA Results) for Scales of the PLQ

Scale	ANOVA (eta^2)
Professional Interaction	0.26**
Participatory Decision Making	0.19**
Individual Support	0.23**
Intellectual Stimulation	0.27**
Moral Perspective	0.24**

*p < 0.05 **p < 0.01
The sample consisted of 604 teachers in 27 schools

Overall, the results of the factor analysis, internal consistency reliability and ability to differentiate between schools, reported in this section, suggests that the scales of the PLQ are reliable when used with the sample of 604 high school teachers in Indonesia.

4.5 MODIFICATION AND VALIDATION OF THE EXISTING QUESTIONNAIRES

This section reports the results for Research Objective 2 which sought to modify, translate and validate two existing questionnaires (the School-Level Environment Questionnaire and the Teacher Self-Efficacy Scale) for use in Indonesia. This section is divided into three parts which describe: the modification of the SLEQ and TSES (Section 4.5.1); the validation of the SLEQ (Section 4.5.2); and the validation of the TSES (Section 4.5.3).

4.5.1 Modification of the SLEQ and the TSES

The modification of the SLEQ, described in Chapter 3.6.1, involved a reduction in the number of scales and changes to the wording of individual items to avoid the use of negatively-worded items. The reduction of the number of scales resulted in five of the eight original SLEQ scales (reported in Fisher & Fraser, 1990) being selected to assess teachers' perceptions of their school climate in Indonesian schools. These were: Affiliation, Work Pressure, Staff Freedom, Resource Adequacy and Goal Consensus. Items in the SLEQ that were negatively-worded were changed to be positively-worded. For example, an item in the Resource Adequacy Scale (Fisher &

Fraser, 1990) which read *"The supply of equipment and resources is inadequate"* and was changed to *"The supply of equipment and resources is sufficient"*.

The modification of the TSES, described in Section 3.6.2, involved re-wording and shortening items in the original version of TSES (Schwarzer et al., 1999). First, the wording in the original version which was meant to assess one's ability to cope with life's general problems) was changed to ensure that they assessed teachers' perceptions of their self-efficacy in teaching their students. Second, items in the original version that were considered to be long, were shortened to reduce confusion and to provide a more economical questionnaire. For example, one of the original items of the TSES (Schwarzer et al., 1999) read "*I can always manage to solve difficult problems if I try hard enough"*, was changed to "*I can successfully teach the most difficult students"*. Another item in the original version which read, *"If someone opposes me, I can find means and ways to get what I want"*, was changed to "*I can maintain a positive relationship with parents even when tensions arise"*.

As with the PLQ, the SLEQ and TSES were both pilot tested with 12 teachers who were selected from one of the participating schools. This pilot test was used to examine the face validity of the individual items. In-depth interviews with the teachers indicated that their understanding and interpretations of the items were similar to the researcher's intent. Analysis of these interviews indicated that all of the items were clear, concise and easily understood, providing confidence in the face validity of both the SLEQ and the TSES. The results of the pilot test each indicated that there were no apparent technical issues, and that the teachers were able to use the response format effectively.

Copies of the SLEQ and the TSES that were used in the present study are provided in Appendix E and G, respectively, for the English versions; and Appendix F and H, respectively, for the Indonesian versions.

4.5.2 Validation of the School-Level Environment Questionnaire

Analysis of the data collected from the 604 teachers was used to examine the reliability and validity of the SLEQ in terms of: factor structure (reported in Section 4.5.2.1); internal consistency reliability (reported in Section 4.5.2.2); and ability to

differentiate between the perceptions of teachers in different schools (reported in Section 4.5.2.3).

4.5.2.1 Factor Structure

Exploratory factor analysis was used to examine the internal structure of the 40-item, five-scale SLEQ. Principal components factor analysis with varimax rotation was used to generate orthogonal factors for the data set. The criterion used for retaining an item was that it must have a factor loading of at least 0.40 on its own scale and not on any other scale (as recommended by Steven, 1992). A series of principal components factor analyses resulted in the acceptance of a revised version of the SLEQ, comprising 31 items in the four scales of Affiliation, Work Pressure, Resource Adequacy and Goal Consensus. One scale, Staff Freedom, was found to be problematic and omitted from all further analysis. One item (Item 9 for the Work Pressure scale) did not meet the criteria and was omitted from all further analysis.

Table 4-5 reports the factor loadings for the remaining 31 items of the SLEQ for the sample of 604 teachers in 27 schools. Without exception, all of the remaining items had a factor loading of at least 0.40 on their own scale and no other scale. The percentage of variance, reported at the bottom of Table 4-5, ranged from 7.35% to 28.58% with the total variance accounted for being 57.34%. The Eigen value ranged from 2.28 to 8.86 for the four scales. The results of the factor analysis strongly supports the factor structure of the revised 31-item SLEQ.

4.5.2.2 Internal Consistency Reliability

To ensure that the items within each scale assessed the same construct, the internal consistency reliability of the Indonesian version of the SLEQ was examined using the Cronbach alpha coefficient. Table 4-6 reports the Cronbach alpha coefficient for each of the four scales of the SLEQ using two units of analysis (the individual teacher and the school mean) for the sample. With the individual teacher as the unit of analysis, the Cronbach alpha coefficient ranged from 0.80 to 0.92 for each SLEQ scale. With the school mean as the unit of analysis, the Cronbach alpha coefficient ranged from 0.80 to 0.97 for each SLEQ scale. These figures, according to Bland and

Altman (1997), indicate that the four scales of the modified SLEQ were reliable in terms of internal consistency reliability.

Table 4-5: Factor Loading for the Modified SLEQ

No. Item	Affiliation	Work Pressure	Resource Adequacy	Goal Consensus
1	0.70			
2	0.66			
3	0.77			
4	0.78			
5	0.72			
6	0.66			
7	0.72			
8	0.60			
10		0.73		
11		0.76		
12		0.73		
13		0.75		
14		0.75		
15		0.41		
16		0.64		
25			0.68	
26			0.76	
27			0.71	
28			0.77	
29			0.81	
30			0.85	
31			0.79	
32			0.84	
33				0.70
34				0.69
35				0.66
36				0.69
37				0.74
38				0.78
39				0.78
40				0.76
% Variance	9.80	7.35	28.58	11.61
Eigenvalue	3.04	2.28	8.86	3.60

Factor loadings smaller than 0.40 have been omitted.
N= 604 teachers in 27 schools

4.5.2.3 Ability to Differentiate Between Schools

An analysis of variance (ANOVA) was used to determine whether the scales of the SLEQ could differentiate between the perceptions of teachers in different schools. The results, reported in Table 4-7, suggest that each of the four scales of the SLEQ (Affiliation, Work Pressure, Resource Adequacy and Goal Consensus) was able to differentiate significantly ($p<0.01$) between the perceptions of teachers in different schools. The eta² statistic (a measure of the degree of association between school membership and the dependent variable for the SLEQ scales) ranged from 0.16 to

0.46 for different SLEQ scales. The ANOVA results provide further evidence that the four scales of the Indonesian version of the SLEQ (Affiliation, Work Pressure, Resource Adequacy and Goal Consensus) were able to differentiate between the perceptions of teachers in different schools.

Table 4-6: Internal Consistency Reliability for the SLEQ Scales

Scale	Number of items	Unit of analysis	Alpha reliability
Affiliation	8	Individual	0.88
		School Mean	0.93
Work Pressure	7	Individual	0.80
		School Mean	0.80
Resource Adequacy	8	Individual	0.92
		School Mean	0.97
Goal Consensus	8	Individual	0.90
		School Mean	0.94

The sample consisted of 604 teachers in 27 schools

Table 4-7: Ability to Differentiate between Schools (ANOVA Results) for the SLEQ Scales

Scale	ANOVA (eta^2)
Affiliation	0.16**
Work Pressure	0.16**
Resource Adequacy	0.46**
Goal Consensus	0.18**

*p < 0.05 **p < 0.01
The sample consisted of 604 teachers in 27 schools

Overall, the results of the factor analysis, internal consistency reliability and ability to differentiate between schools, reported in this section, suggest that the school climate scales based on the SLEQ are reliable when used with the sample of 604 high school teachers in Indonesia.

4.5.3 Validity of the TSES

As the TSES consists of only one scale, its validation involved examining its internal consistency reliability and ability to differentiate between schools. The Cronbach alpha coefficient for the 10-item scale was 0.88 with the individual teacher and 0.94 with the school mean as the unit of analysis.

An analysis of variance (ANOVA) was used to determine whether the TSES could differentiate between the self-efficacy of teachers in different schools. The 10-item TSES was able to differentiate statistically significantly ($p<0.01$) between the perceptions of teachers in different schools. The eta² statistics (a measure of degree of association between school membership and the dependent variable for self-efficacy scale) was 0.24. The high internal consistency reliability and ANOVA results provide evidence that the Indonesian version of the TSES was valid and that the data could be used with confidence to answer the remaining research questions.

4.6 CHAPTER SUMMARY

This chapter presents the findings related to Research Objective 1 (to develop a valid and reliable questionnaire to assess teachers' perceptions of the principal's transformational leadership style for use in Indonesia) and Research Objective 2 (to modify, translate and validate two existing questionnaires used to assess teachers' perceptions of their school climate and their self-efficacy).

The development of the PLQ involved a three-stage approach that included the identification of salient scales, modifying scales and items from previous relevant study, and asking expert opinion. Six characteristics related to transformational leadership were identified through a review of the literature and formed the basis of the new PLQ, namely: Professional Interaction, Participatory Decision Making, Individual Support, Intellectual Stimulation, Vision and Goal and Moral Perspective. The final version of the PLQ consisted of 48 items with eight items in each of the six scales.

Before the main administration the PLQ, together with the two modified questionnaires (the SLEQ and the TSES) were pilot tested with 12 teachers in one school; involving the administration of the questionnaires (to examine if there were technical issues) and interviewing the teachers (to examine the face validity of individual questionnaire items). The results of the pilot study indicated that the three questionnaires were technically sound and user-friendly. The pilot study also ensured face validity of the individual items, with the exception of one item of the PLQ which was removed and replaced. The three questionnaires were administered to a

sample of 618 teachers at 27 high schools in Indonesia. Of these, the responses of 604 teachers were complete and usable for analysis.

To ensure that the PLQ was valid and reliable, the data collected from the 604 teachers were analysed. A series of principal factor analysis resulted in the acceptance of a modified version of the PLQ comprising 39 items in five scales. For the remaining five scales, the Cronbach alpha reliability ranged from 0.89 to 0.95 with the individual teacher as the unit of analysis, and from 0.95 to 0.98 with the school mean as the unit of analysis. The results of the analysis of variance indicated that all five PLQ scales were able to differentiate significantly between schools. Overall, the results of the analysis suggest that the PLQ was valid and reliable when used in Indonesia to assess teachers' perceptions of their principal's leadership style.

Research Objective 2 involved modifying, translating and validating two existing questionnaires (the SLEQ to assess teachers' perceptions of their school climate and the TSES to assess their self-efficacy) for use in Indonesian high schools. The modification of the SLEQ involved a reduction in the number of scales and the rewording of some items to avoid the use of negatively-worded items. The modification of the TSES involved refining and shortening items to reduce confusion and to increase face validity.

To ensure the reliability and validity of the SLEQ, analysis of the data was used to examine the factor structure, internal consistency reliability, and ability to differentiate between schools. A series of principal factor analysis resulted in the acceptance of the version of the SLEQ comprising 31 items in four scales: Affiliation, Work Pressure, Resource Adequacy and Goal Consensus. The Cronbach alpha reliability for each SLEQ scale ranged from 0.80 to 0.92 using the individual teacher as the unit of analysis, and from 0.80 to 0.97 using the school mean as the unit of analysis. The results of the analysis of variance indicate that each SLEQ scale was able to differentiate significantly between schools. The results suggest that the four remaining scales of the SLEQ were valid and reliable when used to measure teachers' perceptions of their school climate in Indonesian schools.

To validate the TSES, its internal consistency reliability and ability to differentiate between schools were examined. The Cronbach alpha reliability of the TSES was

0.88 using the individual teacher as unit of analysis, and 0.94 using school mean as the unit of analysis. The ANOVA results indicate that TSES was able to differentiate significantly between schools. The results suggest that TSES is valid and reliable when used to measure teachers' perceptions of their self-efficacy in Indonesian schools.

The following chapter describes the data analysis and findings used to examine relationships between teachers' perceptions of their principal's leadership style, their school climate and their self-efficacy by using structural equation modelling.

Chapter 5

ANALYSIS AND RESULTS: TESTING THE HYPOTHESES

5.1 INTRODUCTION

Whereas the previous chapter described the analysis and results used to address Research Objectives 1 and 2; this chapter describes the analysis of results used to address Research Objective 3, which sought to examine whether relationships exist between teachers' perceptions of their principal's leadership style, their school climate and their self-efficacy. These findings are reported under the following headings:

- Research Model (Section 5.2);
- Confirmatory Factor Analysis (Section 5.3);
- Confirmation of Research Model (Section 5.4);
- Testing the Hypotheses (Section 5.5); and
- Chapter Summary (Section 5.6).

5.2 RESEARCH MODEL

Past research has indicated links between the principal's leadership style and: the school climate (Dellar, 1999; Pepper & Thomas, 2002); teachers' self- efficacy (Kurt, Duyar and Calik, 2012); and between the school climate and teachers' self-efficacy (Fernet, Guay, Senécal, and Austin, 2012; Huang & Fraser, 2009: Webb and Ashton, 1987). Therefore the research model, presented in Section 3.3, hypothesised that each of the five psychosocial aspects of leadership style (Professional Interaction, Participatory Decision Making, Individual Support, Intellectual Stimulation and Moral Perspective) would individually influence the four school climate scales (Affiliation, Work Pressure, Resource Adequacy and Goal Consensus) and teachers' self-efficacy. Additionally, each of the four school climate scales was predicted to influence teachers' self-efficacy. In all, there were 10 scales, providing a total of 29 hypothesised correlations for the study, as shown in Figure 5-1.

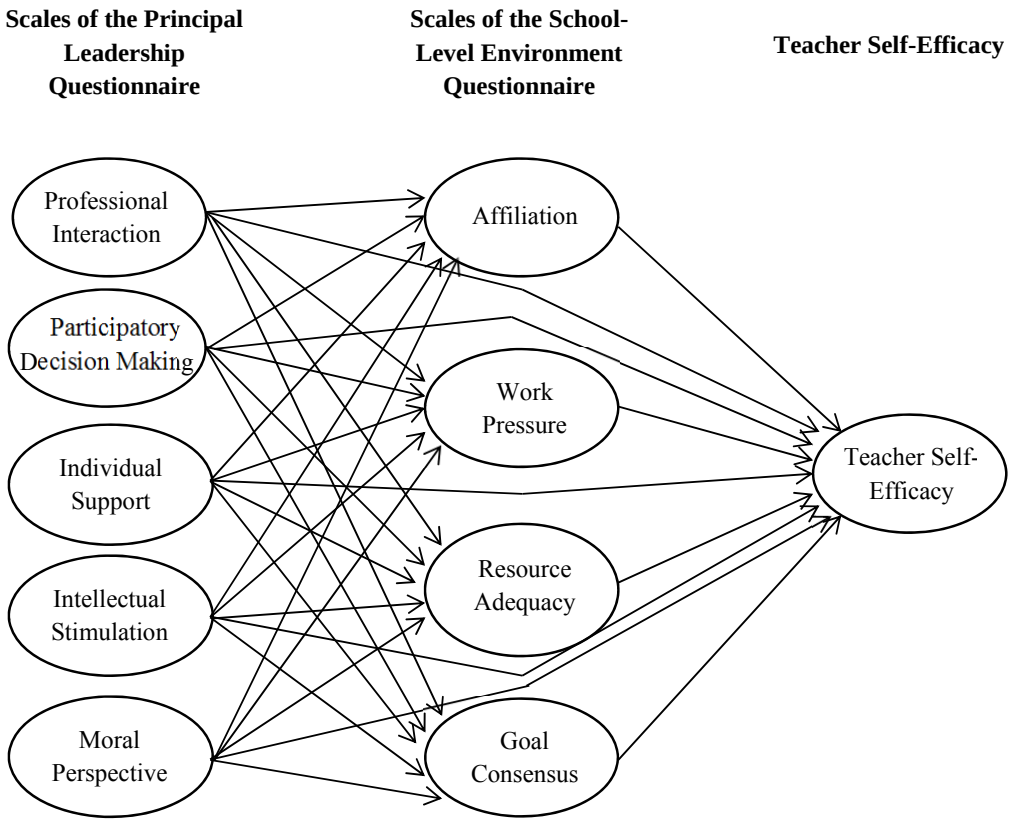

Figure 5-1: Postulated Research Model

Structural equation modelling (SEM) with LISREL 8.30 (Jöreskog & Sörbom, 1996) was used to simultaneously estimate the 29 relationships between the latent variables. SEM was considered to be superior to other methods, as it would be able to indicate whether the hypothesised research model provided a good fit to the data by employing confirmatory factor analysis techniques (Hu & Bentler, 1998) (reported in Section 5.3). In addition, these techniques were also used to examine the psychometric properties of the measurement instruments, their scale validity and unidimensionality (Harrington, 2008).

5.3 CONFIRMATORY FACTOR ANALYSIS

Confirmatory Factor Analysis (CFA) can be described as a measurement model and, as such, it is one type of analysis that falls within the SEM family. However, CFA is different from SEM as it focuses on the relationships between the items and the scales (latent variables), whereas SEM focuses on the structural or causal paths between latent variables. CFA may be used as either a stand-alone analysis or as a

preliminary step to SEM analysis (Harrington, 2008). In this study, CFA was used as a preliminary step to SEM analysis to verify the factor structure of the measurement instruments and to examine the reliability and validity of constructs.

Using the sample drawn from 604 teachers, I re-examined the pre-specified factor structure (based on the result of the exploratory factor structure) against an empirically-driven structure. CFA was used to provide goodness-of-fit indices for the resulting solution (Bagozzi et al., 1991) and was performed on the covariance matrix, generated by LISREL 8.30, using the maximum likelihood estimation method for testing the factors within the three instruments. In addition, the construct measurement model was examined to define the relationship between latent variables and the manifest scales with respect to how each item was related to its scale.

In this study, the convergent validity (reported in Section 5.3.1) and discriminant validity (reported in Section 5.3.2) were examined to confirm whether the factor structure of the three instruments (PLQ, SLEQ and TSES) were valid and reliable for SEM purposes.

5.3.1 Convergent Value

The convergent validity was assessed by examining the item reliability, composite reliability and the average variance extracted (AVE) of each scale for the three instruments, as proposed by Fornell and Larker (1981). Reliability refers to the accuracy and precision of a measurement procedure and may be viewed as an instrument's relative lack of error (Thorndike, Cunningham, Thorndike, & Hagen, 1991). The reliability was examined to determine how well the instrument measures what it purports to measure. Appendix M reports the convergent validity of each scale in terms of the: factor loading, composite reliability and average variance extracted.

The reliability of the individual items was assessed by examining its factor loading (the relationship between an item and its scale) on the underlying scale. During analysis, the factor loadings of two items, 9 and 15 (for the Work Pressure scale) were found to be less than the minimum cut-off of 0.50 (Nunnally & Bernstein, 1994). Given that these low factor loadings affected the goodness of fit (GFI),

modifications were made to the model by eliminating these two items (as recommended by Nunnally & Bernstein, 1994).

Composite reliability, rather than Cronbach's alpha, was used in this analysis (as suggested by Hair, Black, Babin, and Anderson, 2010) because the latter tend to understate reliability. To be reliable, the scale reliability value is required to be above the minimum of value 0.70 (Nunnally & Bernstein, 1994). The composite reliability for each of the 10 scales in the research model ranged from 0.86 to 0.96, reported in Appendix M, thereby satisfying the conventionally accepted cut-off of 0.70.

The final criterion for convergent validity was the average variance extracted (AVE) for each scale. Fornell and Larker (1981) and Nunnally and Bernstein (1994) recommended a minimum value of 0.50 for the AVE. The results of the analysis, reported in Appendix M, showed that the AVE values for the 10 scales were all above the minimum cut-off and ranged from 0.51 to 0.74.

Given these satisfactory results, the remaining items and scales were considered to be valid. It was concluded, therefore, that the data used in this study to test the hypothesised research model was suitable for the SEM method. In addition, the instruments were found to satisfactorily measure what they purport to measure and, as such, could be used with confidence for the purpose of structural equation modelling.

5.3.2 Discriminant Validity

Discriminant validity assesses the degree to which scales differ from each other. The criterion for discriminant validity, as suggested by Barclay, Higgins and Thompson (1995), was that the square root of average variance extracted (AVE) for each scale was larger than the inter-scale correlation. The results, reported in Table 5-1, support the discriminant validity because, for each scale, the square root of the AVE was larger than the inter-scale correlation.

Table 5-1: Inter-Scale Correlations and Square Roots of Average Variance Extracted

	PI	DM	IS	IST	MP	AF	RA	WP	GC	TSE
PI	**(0.77)**									
DI	0.68	**(0.86)**								
IS	0.71	0.78	**(0.84)**							
IST	0.68	0.68	0.77	**(0.87)**						
MP	0.71	0.56	0.72	0.72	**(0.82)**					
AF	0.44	0.33	0.38	0.51	0.55	**(0.74)**				
RA	0.48	0.33	0.43	0.52	0.56	0.36	**(0.81)**			
WP	0.07	0.06	0.06	0.09	0.22	0.10	0.18	**(0.67)**		
GC	0.36	0.31	0.33	0.47	0.59	0.50	0.40	0.21	**(0.81)**	
TSE	0.46	0.44	0.50	0.52	0.60	0.53	0.36	0.14	0.68	**(0.73)**

Bold figures in the diagonal represent the square root of AVE for each scale

Overall, the convergent and discriminant validity results indicated that the factor structure and the measurement constructs included in the three instruments were valid and reliable and were, therefore, considered to be suitable for the purpose of SEM.

5.4 CONFIRMATION OF RESEARCH MODEL

Before examining the hypothesised relationships between the variables in this study, it was important to examine the goodness-of-fit to ensure that the hypothesised research model provided a good fit to the data. Confirmation of the research model involved assessment of: the construct measurement model (Section 5.4.1); the research model and model fit (section 5.4.2), and the coefficient of determination (Section 5.4.3).

5.4.1 Assessment of Construct Measurement Model

The construct measurement model was used to define the relationship between the latent variable and the manifest variables (items); that is, how each item relates to its scale. Therefore, the relationships between items of the same scale were assessed by estimating the variance associated with endogenous scales to examine the contribution of each item to its scale. Three indices, generated using LISREL, were used: the measures of Root Mean Square Error of Approximation (RMSEA), Goodness of Fit (GFI) and Comparative Fit Index (CFI). Table 5-2 reports the results of the CFA measurement for each of the scales.

Table 5-2: Results of CFA Measurement Models for the 10 Scales

Scale	RMSEA	Goodness of Fit (GFI)	Comparative Fit Index (CFI)	Remarks
Leadership style				
Professional Interaction	0.04	0.99	1.00	Good Fit
Participatory Decision Making	0.00	Perfect	Perfect	Perfect
Intellectual Stimulation	0.00	1.00	1.00	Good Fit
Individual Support	0.02	1.00	1.00	Good Fit
Moral Perspective	0.00	1.00	1.00	Good Fit
School climate				
Affiliation	0.00	1.00	1.00	Good Fit
Work Pressure	0.00	1.00	1.00	Good Fit
Resource Adequacy	0.00	1.00	1.00	Good Fit
Goal Consensus	0.04	1.00	1.00	Good Fit
Teacher Self-Efficacy	0.02	1.00	1.00	Good Fit

The results reported in Table 5-2 indicate that the value for all scales for the RSMEA is at or below the benchmark score of 0.08 (Browne & Cudeck, 1993). This indicates a sound model fit to the data. Additionally, the values for the GFI and CFI for all measurements were at or above the benchmark of 0.90 and 0.95, respectively, indicating that the measurement model was sound and confirming that each of the scales was fit to be used for further analysis (Hu & Bentler, 1998).

5.4.2 Assessment of Research Model and Model Fit

It is important to examine the 'fit' of an estimated model to determine how well it fits the data. The fit indices generated by LISREL, used to test the structure models in this study, were the Root Mean Square Residual (RMR), Root Mean Square Error of Approximation (RMSEA), Goodness-of-Fit Index (GFI), Comparative Fit Index (CFI) and the Normed Fit Index (NFI) (as advised by Bowen and Guo, 2011).

Table 5-3 reports the result of the Goodness-of-Fit indices generated using LISREL. The results show that the values of the RMR, RMSEA, CFI and NFI were 0.05, 0.05, 0.99 and 0.98 respectively, indicating good fit. Further, the value of the GFI was 0.84, indicating marginal fit. Overall, the fit indices, used to test the structure model, indicate that the research model was sound.

Table 5-3: The Goodness-of-Fit Model

Goodness-of-Fit	Cut-off Value	Recommended by	Result	Remarks
RMR(Root Mean Square Residual)	≤ 0.05	Diamantopoulos & Siguaw (2000)	0.05	Good Fit
RMSEA(Root Mean square Error of Approximation)	≤ 0.08	Browne & Cudeck (1993)	0.05	Good Fit
GFI(Goodness of Fit Index)	≥ 0.90	Hoyle & Panter (1995)	0.84	Marginal Fit
CFI (Comparative Fit Index)	≥ 0.95	Hu & Bentler (1999)	0.99	Good Fit
NFI (Normed Fit Index)	≥ 0.95	Diamantopoulos & Siguaw (2000)	0.98	Good Fit

5.4.3 Assessment of the Coefficient of Determination

To ensure the confirmatory power of the hypothesised relationships, the contribution of each item to its scale and the relationship between scales of the same questionnaire were examined. The explanatory powers of the model were assessed by calculating the coefficient of determination (R^2) of the endogenous scales. It was proposed that the minimum R^2 should be 0.10 (Santosa et al., 2005). Diamantopoulos and Siguaw (2000) maintained that a high multiple square correlation value denotes high reliability for the indicator concerned, therefore, the higher the squared multiple correlation, the greater the joint explanatory power of the hypothesised antecedents. The results, reported in Table 5-4, indicate that, for all but one of the scales, the exception being Work Pressure, the R^2 value was higher than this minimum requirement.

Table 5-4: Coefficient of Determination (R^2) of the Endogenous Scales

Endogenous scale	R^2
Affiliation (AF)	0.22
Work Pressure (WP)	0.01
Resource Adequacy (RA)	0.20
Goal Consensus (GC)	0.22
Teacher Self-Efficacy (TSE)	0.56

The findings imply that 22% of the variation in the teachers' scores for Affiliation can be accounted for by their perceptions of their principal's leadership style. However, only 1% of the variation in the teachers' scores for work Pressure can be accounted for by their perception of the principal's leadership style. In addition, 20% and 22% of the variation in teachers' scores for Resource Adequacy and Goal

Consensus, respectively, are attributable to their perceptions of the principal's leadership style. Finally, 56% of the variation in teachers' self-efficacy scores can be accounted for by the principal's leadership style.

Overall, the assessments of the construct measurement model, research model and model fit and coefficient of determination confirmed that the postulated research model was suitable for SEM.

5.5 TESTING THE HYPOTHESES

This section reports the results of hypotheses testing, undertaken to address Research Objective 3, using SEM. This objective sought to investigate whether associations exist between: (1) teachers' perceptions of the principal's leadership style and the school climate; (2) teachers' perceptions of the principal's leadership style and their self-efficacy; and (3) teachers' perceptions of the school climate and their self-efficacy. Two indices of SEM, namely path coefficient (p-value) and *t*-value were calculated to examine the relationships between the three variables in a multivariate system.

According to Shipley (2000) the path coefficient, symbolised as γ, is the standardised version of linear regression weights which can be used to examine possible causal links between statistical variables during the structural equation modelling approach. To be considered significant, a causal link between variables needs to have a path coefficient of greater than 0.05 (alpha 5%).

The *t*-value assessment was used to examine the validity of a parameter. To be considered significant, a parameter is required to have a *t*-value greater than 1.96 and smaller than -1.96 (Fornell & Larker, 1981). The hypotheses testing (calculation of the path coefficient and *t*-value) are reported in terms of the final results after modification only.

The initial output of the structural equation model, in which the path coefficient and *t*-value for each of the 29 hypothesised relationships were included, had a goodness of fit based on the GFI criteria. This initial output indicated that only nine of the 29 possible relationships were statistically significant (not reported). Based on the recommendation of Guo et al. (2011), modifications were made to the model by

flagging potential changes and eliminating paths within the model that were non-significant. According to Guo et al. (2011), the removal of a non-significant structural path is a form of model modification. Whilst the removal of a path did not directly reduce the residual correlation or the model x^2, it did improve the model by making it more parsimonious. This process of modifying the model led to an improved fit that resulted in more significant causal paths within the model.

As a result of the refinements to the model, carried out over a number of tests, 12 of the 29 relationships remained. This final model, which excluded all but one non-significant path, was considered to be the most appropriate. Table 5-5 reports the standardised path coefficients and *t*-values for each of the paths in the refined model.

Table 5-5: Output of Equation Model of the PLQ (PI, DC, IS, IST and MP), SLEQ (AF, WP, RA, and GC) and TSES after the Model Modification

Hypothesised relationship			Standardised Path Coefficient	*t*-value
Professional Interaction	→	Affiliation	0.24	3.69**
Professional Interaction	→	Goal Consensus	0.21	2.39*
Individual Support	→	Goal Consensus	-0.15	-1.50
Intellectual Stimulation	→	Affiliation	0.26	4.11**
Intellectual Stimulation	→	Work Pressure	0.11	2.47*
Intellectual Stimulation	→	Goal Consensus	0.16	2.04*
Participatory Decision Making	→	Resource Adequacy	0.17	3.14**
Moral Perspective	→	Resource Adequacy	0.32	6.04**
Moral Perspective	→	Goal Consensus	0.29	4.24**
Individual Support	→	Teacher Self-Efficacy	0.27	6.74**
Affiliation	→	Teacher Self-Efficacy	0.13	3.11**
Goal Consensus	→	Teacher Self-Efficacy	0.52	10.15**

**=p-value < 0.05, **=p-value < 0.01*

Figure 5-2 reports the statistically significant pathways and the path coefficient value for each of the significant relationships in the research model (after non-significant relationships were removed).

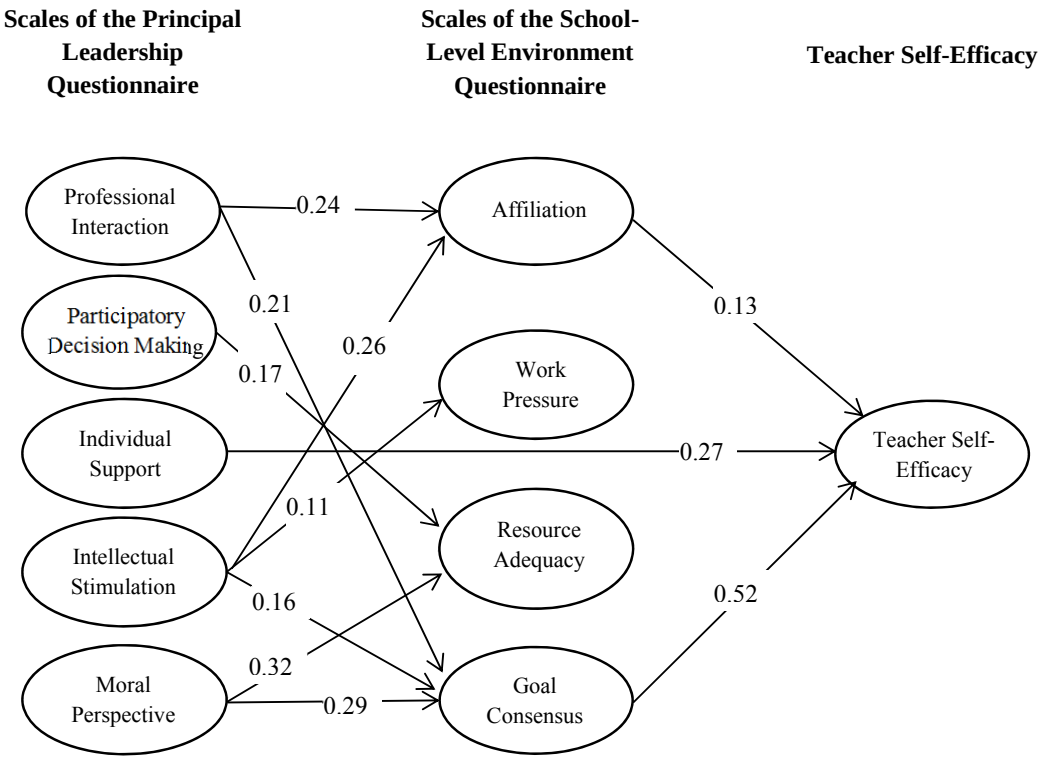

Figure 5-2: The Significant Path Coefficient between the Scales

The final results indicate that 11 of the 29 hypothesised relationships were statistically significant (γ<1.98, p<0.05) and that all of the statistically significant relationships were positive in direction, each of which are explained below.

The first hypothesis predicted that principal transformational leadership would have direct positive effects on the school climate. The results indicated that there were eight statistically significant correlations between scales of the PLQ and the SLEQ (as reported in Figure 5-2). Specifically, teachers' views of the principal's Professional Interaction influenced their perceptions of Affiliation (γ=0.24, p<0.01) and Goal Consensus (γ=0.21, p<0.05). The degree to which the principal provided Intellectual Stimulation was found to influence perceptions of Affiliation (γ = 0.26, p<0.01), Work Pressure (γ=0.11, p<0.05) and Goal Consensus (γ =0.16, p<0.05). The degree to which teachers perceived the principal to involve them in Participatory Decision Making influenced their perceptions of Resource Adequacy (γ=0.17, p<0.01). Finally, the teachers' view of their principal's Moral Perspective was found to influence their perceptions of both Resource Adequacy (γ=0.32, p<0.01) and Goal Consensus (γ=0.29, p<0.01).

A significant path coefficient was found to oppose the proposed model. The degree to which the principal provided Individual Support was found to negatively influence perceptions of Goal Consensus (γ = - 0.15). This finding may indicate that, when principals concentrate on the needs of individual staff members this could be detrimental to the group as a whole, thereby affecting the goal consensus.

My second hypotheses predicted that transformational leadership would have a statistically significant effect on teachers' self-efficacy. The results, reported in Table 5.5 (on the previous page and shown graphically in Figure 5.2), show that one of the six aspects of transformational leadership, Individual Support, directly influenced teachers' reports of self-efficacy (γ=0.27, p<0.01). The principal's leadership style was also found indirectly to predict self-efficacy through scales related to the school climate. For example, Intellectual Stimulation, mediated by Affiliation, was found to predict self-efficacy.

As well, three principal's leadership behaviours (Professional Interaction, Intellectual Stimulation and Moral Perspective) were found, indirectly, to predict Teachers' Self-Efficacy through Intellectual Stimulation and through Goal Consensus. That is, teachers who experienced more Professional Interaction, Intellectual Stimulation and Moral Perspective tended to report more Goal Consensus, which, in turn, led to increased Teacher Self-Efficacy.

My third hypothesis predicted that school climate would significantly affect teachers' self-efficacy. The results, portrayed in Figure 5-2, indicated that two of the four school climate scales statistically significantly (p<0.01) influenced Teacher Self-Efficacy, these being Affiliation (γ=0.13) and Goal Consensus (γ=0.52).

5.6 CHAPTER SUMMARY

This chapter reports the analysis of results pertaining to my third research objective which sought to determine whether associations exist between the principal's leadership style, the school climate and teachers' self-efficacy. The research model hypothesised that the five transformational leadership scales would individually influence the four school climate scales and the self-efficacy scale. Additionally, each of the four school climate scales was predicted to influence teachers' self-

efficacy. In all, 10 scales, providing a total of 29 hypothesised correlations, were postulated as a research model structure.

As a first step, CFA was used to examine the psychometric properties of the measurement instruments. The convergent validity and discriminant validity were examined to confirm whether the factor structure of PLQ, SLEQ and TSES were valid and reliable for SEM purposes. The results indicated that the factor loadings and constructs of the measurement used were valid and reliable. In addition, the construct measurement model and the model fitness were examined to ensure that the research model fit the data. The results of these tests suggested that the research model was sound and suitable for SEM purpose.

To ensure that the research model provided a good fit to the data, the model goodness-of-fit was examined by investigating the construct measurement model, the research model and model fit and the coefficient of determination. By using the goodness-of-fit indices: RMR, RMSEA, CFI and NFI, generated using LISREL; the results indicated that the research model was sound and suitable for SEM purpose.

To ensure the confirmatory power of the hypothesised relationships, the contribution of each item to its scale and the relationship between scales of the same questionnaire, were examined. The coefficient of determination, symbolized as (R^2), of the endogenous scales were calculated. The results indicate that, for each scale, the R^2 was higher than this minimum requirement, with the exception of Work Pressure.

To investigate whether associations exist between teachers' perceptions of the principal's leadership style, the school climate and their self-efficacy; the three research hypotheses were tested. The *t*-value and path coefficient assessment were used to test the 29 hypothesised relationships between the three main variables. The initial output of the structural equation model indicated that nine of the 29 possible relationships were statistically significant. Refinements to the model were carried out over a number of tests, with the final results indicating that 11 of the 29 hypothesised relationships were statistically significant.

The next chapter provides a discussion based on each of these statistically significant findings.

Chapter 6

DISCUSSION AND CONCLUSION

6.1 INTRODUCTION

This chapter concludes the thesis by providing a discussion based on the results that were detailed in Chapters 4 and 5. The chapter is organised under the following headings:

- Discussion of the Findings (Section 6.2);
- Limitations and Recommendation for Future Research (Section 6.3);
- Contributions of the Study (Section 6.4);
- Conclusion (Section 6.5).

6.2 DISCUSSION OF THE FINDINGS

This section provides a summary and discussion of the results pertaining to each of the research objectives, these are: the development and validation of the new questionnaire that was designed to assess teachers' perceptions of their principal's leadership style (Section 6.2.1); the validation of the two existing questionnaires, used to assess teachers' perceptions of the school climate and teachers' self-efficacy (Section 6.2.2); and, finally, examining the relationships between the principals' leadership style, school climate and teachers' self-efficacy (Section 6.2.3).

6.2.1 Validity of the Principal Leadership Questionnaire (PLQ)

Principal leadership style has been an important factor of school improvement for more than two decades (Cravens et al., 2013). The assessment of principal leadership, according to Cravens et al. (2013), can be beneficial for two reasons: first, to provide a standard-base of accountability system; and, second, for school improvement. It was argued that the first reason aids to maintain working definitions of what constitutes an effective or highly effective principal, and the second reason was to provide feedback to improve practice and to inform principal professional development. Given that, to date, no instrument has been made available in Indonesia to assess principal leadership behaviour, my first research question sought to develop

and validate a new questionnaire to overcome the unavailability of a sound and theoretically inclusive instrument to measure this. This section summarises the results of the development and validation of the new questionnaire.

To develop the new survey, I used a multi-staged approach that had been used successfully in the development of previous surveys (see, for example, Velayutham, Aldridge & Fraser, 2011). An important consideration made during the development of the new instrument was to ensure that the construct validity was satisfied. An extensive review of the related literature was made, to provide a sound basis upon which the constructs were developed. Once important constructs were delineated, the derivations of salient scales and items that assess transformational leadership were adopted and modified from scales of previous questionnaires, whose content validity was established.

The newly-developed questionnaire was comprised of 50 items with six scales assessing salient aspects of a principal transformational leadership: Professional Interaction, Participatory Decision Making, Individual Support, Intellectual Stimulation, Vision and Goal and Moral Perspective. At this stage, the questionnaire was translated into Bahasa Indonesia by employing a back-translation method recommended by Brislin (1970).

To provide information about the content and face validity of the 50-item instrument, an expert panel made up of 25 experienced school principals was asked to review the scales and individual items. The major function of this review was to ensure that the individual items encompassed the intended constructs, and to examine whether the construct and individual items were culturally suitable for use in Indonesian high schools. Reviews, in the form of evaluation sheets and discussions with members of the expert panel, helped to further refine the items. At this stage, two items were found not to be suitable and were omitted, leaving 48 items, with eight items in each of the six scales.

To examine the face validity and whether technical issues existed, the newly-developed questionnaire, named the Principal Leadership Questionnaire (PLQ), was pilot tested with 12 teachers from one high school. The pilot test results indicated that the teachers responded to the items in ways that were intended and that all of the

items, with the exception of one which was modified; were clear, concise and easily understood, thereby supporting the face validity of the PLQ.

The PLQ was administrated to 618 high school teachers, of which 604 cases were complete and usable for analysis. To determine the reliability and validity of the PLQ, these data were used to examine the factor structure, internal consistency reliability and the ability of each scale to differentiate between schools. The factor analysis resulted in the acceptance of 39 of the 48 items, with the individual item loadings ranging from 0.42 to 0.80. The lowest Cronbach alpha coefficient was 0.89 for all of the scales, indicating that the scales of the PLQ had sound internal consistency reliability. The ANOVA results indicated that all PLQ scales were able to differentiate significantly between schools, thus supporting the concurrent validity of the scales.

According to Rattray and Jones (2007), the questionnaire development must be supported by a logical, systematic and structured approach. Failure to develop a questionnaire sufficiently may lead to difficulty interpreting results, and this may lead to invalid results and poor educational practice. Overall, the development of the PLQ followed a rigorous approach and was based on a sound theoretical base. Further, the content validity and suitability for use in Indonesia was confirmed by 25 experienced high school principals who made up the expert panel. The results of the data analyses suggested that the PLQ was valid and reliable when used in Indonesian high schools, thereby supporting the results of subsequent research objectives.

The development of this instrument makes available for the first time a sound and convenient tool to gather information about important aspects of a principal's transformational leadership in Indonesian schools. The PLQ provides a working definition of an effective principal that can be easily understood by principals and can provide useful feedback that can be used to improve practice and inform the professional development of principals. As such, it is anticipated that the information gathered by using this instrument could be used constructively by principals to allow them to reflect on their leadership style.

6.2.2 Validation of Existing Instruments

Research Objective 2 sought to validate the two existing surveys that were modified for use in the present study: the School-Level Environment Questionnaire (described in Section 6.2.2.1) and the Teacher Self-Efficacy Scale (described in Section 6.2.2.2). The results for each are summarised and discussed below.

6.2.2.1 Validation of the School-Level Environment Questionnaire (SLEQ)

The SLEQ is a well-established instrument that has been validated in studies around the world, for example, South Africa (Aldridge et al., 2006); Australia (Fisher & Grady, 1998); Taiwan (Huang & Fraser, 2009) and the US (Johnson et al., 2007). To date, two people have used the SLEQ in Indonesia, however, the survey was modified for use in my study. Therefore, it was important to ensure that the version of the SLEQ used in the present study was valid and reliable when used with teachers in Indonesia. Since the SLEQ was an existing instrument, the validation involved only criterion related factors (Trochim & Donnelly, 2006); including the factor structure, internal consistency reliability and ability to differentiate between schools.

The data collected from 604 high school teachers was used to examine the factor structure of the modified SLEQ. A principal component factor analysis resulted in the loss of one scale (Staff Freedom) and nine items. The final version included 31 items in the four scales of Affiliation, Work Pressure, Resource Adequacy and Goal Consensus, all of which loaded on their *a priori* scale and no other scale. The items of the Staff Freedom scale were found not to assess a unique factor, possibly because of the teachers' limited experience with autonomy or freedom in teaching.

The lowest Cronbach alpha coefficient for each of the four remaining scales was 0.80, suggesting that the Indonesian version of the SLEQ has sound internal consistency reliability. In addition, the ANOVA results suggest that each of the four scales were able to differentiate significantly between the perceptions of teachers in different schools.

Overall, the results suggest that the Indonesian version of the SLEQ had acceptable factor structure, internal consistency reliability and the ability to differentiate between schools when used on high school teachers in Indonesia. These results were

similar to those of other studies involving the use of the SLEQ (e.g. Aldridge et al., 2006; and Huang & Fraser, 2009). The present study suggests that subsequent research objectives involving the SLEQ can be interpreted with confidence.

6.2.2.2 Validation of the Teacher Self-Efficacy Scale (TSES)

The TSES, based on a study by Schwarzer and Jerusalem (1995), has been shown to have satisfactory criterion-related validity, documented in a number of correlation studies (Schwarzer et al., 1999). However, as this was the first time that an Indonesian version had been used, it was important to validate it. Validation of the TSES involved examining the internal consistency reliability and the ability to differentiate between schools.

Analysis of data collected from 604 teachers indicated that the Cronbach alpha coefficient for this scale was 0.88, supporting the internal consistency reliability of the Indonesian version of the TSES. The results of the one-way ANOVA supported the ability of the scale to differentiate statistically significantly between the perceptions of teachers in different schools. These results were similar to previous studies that involved the use of the TSES (e.g. Schwarzer et al., 1999; and Tschnannen-Moran & Hoy, 2001) and provide support for the interpretation of the results for the subsequent research objective involving the TSES.

6.2.3 Relationships between Principal Leadership Style, School Climate and Teacher Self-Efficacy

Based on theory and research, the research model hypothesised that principal leadership style would influence both the school climate and teachers' self- efficacy, and that the school climate would influence teachers' self-efficacy (see Section 3.3 for details related to the hypotheses developed for the present study). Before the hypotheses were tested, confirmatory factor analysis (CFA) was used to provide an assessment of the measurement properties to examine the convergent and discriminant validity of the PLQ, SLEQ and TSES.

The convergent validity was examined by determining the item reliability, internal consistency and average variance extracted. During the item reliability determination, two items, WP 9 and WP15, were considered invalid and removed.

After the removal of these two items, the results indicated that all of the item loadings achieved the minimum requirement of 0.50 (Nunnally & Bernstein, 1994). Reliability analysis indicated a high internal consistency reliability of above 0.70 for all scales of the three instruments, and the measure of the AVE value for each scale met the minimum requirement of 0.50. These results supported the convergent validity of the measurements used and suggest that the three measurements used in the study (PLQ, SLEQ and TSES) were suitable for structural equation modelling (SEM) purposes.

The discriminant validity examined the degree to which the scales differed from each other. The findings showed that the square root of the AVE was larger than the inter-scale correlation, suggesting that the discriminant validity was supported (Barclay et al., 1995). The goodness-of-fit indices were generated to examine how well the estimated model fit the data. The values of the RMR, RMSEA and NFI, for all scales, were 0.05, 0.05 and 0.99, respectively; indicating a good fit. Further, the value of the GFI for all scales was 0.84, indicating a marginal fit. These results suggested that the structure model used to build the research model was sound.

The coefficient of determination (R^2) of the endogenous construct was calculated to assess the explanatory power of the research model. The results indicated that, for each scale, the R^2 value was higher than 0.10 (Santosa et al., 2005), with the exception of Work Pressure. The findings suggest that the variation of the four endogenous scales (Affiliation, Resource Adequacy, Goal Consensus and Teacher Self-Efficacy) can be accounted for by teachers' perceptions of their principal's leadership style.

Once the suitability of the postulated research model and the measurement properties were confirmed, the hypotheses were tested. The initial output of the hypotheses testing, indicated that nine of the 29 possible relationships were statistically significant. To improve the fit, all non-significant relationships were omitted and the test was repeated to attain the best model (Guo et al., 2011). This process of modifying the model led to an improved fit that resulted in 11 significant causal paths (see Table 5.5 and Figure 5.2). This section discusses the implications of each of the significant paths in terms of the influence of: principal leadership behaviour on

school climate and on teacher self-efficacy (Section 6.2.3.1); and school climate on teacher self-efficacy (Section 6.2.3.2).

6.2.3.1 Influence of Leadership Behaviour on School Climate and Teacher Self-Efficacy

The results indicated that there were eight statistically significant paths between dimensions of principal leadership behaviour and school climate: Professional Interaction influenced Affiliation and Goal Consensus; Participatory Decision Making influenced Resource Adequacy; Intellectual Stimulation influenced Affiliation, Work Pressure and Goal Consensus; and Moral Perspective influenced Resource Adequacy and Goal Consensus. One scale, Individual Support, was found to directly influence Teacher Self-Efficacy. The impact of these leadership behaviours on school climate (Affiliation, Resource Adequacy and Goal Consensus) and Teacher Self-Efficacy are discussed below.

Influence of Principal Leadership Behaviour on Affiliation. The Affiliation scale assesses the extent to which teachers perceive there to be positive relationships between themselves and their fellow teachers that allow them to obtain assistance, advice and encouragement; and in which they are made to feel accepted. By increasing teachers' sense of affiliation, they are more likely to become involved in interactive professionalism; an important component for an improving school that promotes positive and effective collaboration between staff members (Bergman, Rentsch, Small, Davenport, & Bergman, 2012). According to Fullan (2010), teachers should be collaborating rather than working in isolation. When teachers collaborate, each teacher makes a more profound collective impact on student achievement than when the efforts are restricted to isolated teachers (DuFour, 2004). Research strongly supports the notion that, when teachers work together, improved teaching practices and student achievement are more likely. The results of my study indicated that two of the principal leadership scales, Professional Interaction and Intellectual Stimulation, statistically significantly influenced teachers' perceptions of Affiliation, each of which is discussed below.

The Professional Interaction scale assesses the extent to which teachers perceive the principal to set an example for them to follow in his or her interactions. According to

Leithwood and Jantzi (1997), principals who demonstrate openness to teachers are likely to encourage trust which, in turn, will promote improvement or change, based on a mutual understanding. Given the influence of the principals' professional interaction on the level of affiliation between staff members, this behaviour is important in terms of strengthening the school's structure and the social networks within the structure; thereby promoting positive relationships among staff members. The importance of strong social networks is argued by Hallinger and Heck (1996), who purport that these positive relationships are important to school improvement.

The principal's professional interactions with staff members has the potential to reflect a relational conception of leadership that is based on mutual influence rather than on leadership as a role or set of functions carried out by an individual (Leithwood & Duke, 1999). Therefore, interactions between the principal and the staff are likely to influence and contribute to school effectiveness. For example, if the staff support and trust the principal and collaborate on a regular basis for instruction and socialisation, then this is likely to facilitate the implementation of an innovation for change.

The influence of Professional Interaction on Affiliation supports past research by Retna and Tee (2008), who found that a principal's interactions with school members plays an important function in promoting positive staff interactions. Therefore, principals wishing to promote affiliation amongst staff members are advised to practice behaviours related to positive interactions, including showing respect and support for individual teachers and attending social functions that provide opportunities for the principal to get to know the teachers. According to Gabriel (2005), principals can show more professional interaction if they put aside prejudices for the good of the students, listen to all of the teachers, do not play favourites (although he or she may have them) and are not self-serving. In addition, he advises that principals should not allow friendships or rivalries to impede group progress.

The Intellectual Stimulation scale was also found to influence Affiliation. Intellectual Stimulation assesses the extent to which the principal challenges teachers to re-examine their work and to think how their work can be improved. Intellectual Stimulation can be viewed as the principal's support for innovation and the facilitation of the development and implementation of new ideas which, in turn,

encourage teachers to know the strengths and shortcomings of their teaching practices (Bass, 1985; Valentine & Prater, 2011). A principal who displays Intellectual Stimulation behaviour is likely to understand teachers' problems, thereby supporting them in terms of psychological and emotional wellbeing (Valentine & Prater, 2011). Principal's practices associated with Intellectual Stimulation can help staff members think through the obstacles that confront their success, thus leading them to develop a better understanding of what needs to be done to be successful (Kurt et al., 2012).

Like Professional Interaction, Intellectual Stimulation also can be viewed as a means of shaping the social context in which teachers work, thus contributing to improved acceptance and support among them (Pereira & Gomes, 2012). This is important because as the central figure in the school, the principal is able to create a social context in which school members are guided towards a shared interpretation, understanding and perception of the school climate (Yukl, 1989).

Hall and Simeral (2008) argue that one of the most robust aspects of a principal's job is working with staff members to increase their capacity. If a principal does not truly know the teachers, he or she cannot possibly learn their strengths and maximise their potentials. Therefore, Hall and Simeral (2008) advise that principals use the strength-based school improvement approach, to pursue information about each individual staff member.

To improve Intellectual Stimulation practice, Hall and George (1999) advocate that the skills associated with principal leadership should include the use of social skills in informal situations on frequent occasions. This cluster of interactions allows the principal to engage with teachers in frequent social chats that enable him or her to attend to the feelings and perceptions of the staff members. In addition, the principal's Intellectual Stimulation skills can be improved by mastering two key factors: instructional leadership (his or her influence on issues in the school through a command of the knowledge of, and commitment, to best practices); and curricular leadership (a participative leadership to support the implementation of those practices) (Valentine & Prater, 2011).

Influence of Principal Leadership Behaviour on Resource Adequacy. The Resource Adequacy scale assesses the extent to which teachers perceive there to be suitable and adequate facilities, equipment and resources that enable them to perform their work optimally. A more positive sense of resource adequacy amongst staff members is likely to increase the degree of confidence and ease of teaching. In their review of past research, Buckley, Schneider and Shang (2005) argued that good materials, resources and facilities were important factors that helped teachers to provide adequate service in their work as teachers.

Past research has supported the notion that the quality of the facilities and resources are likely to influence teachers' performances as well as students' educational outcomes (Lackney, 1999; Schneider, 2002). Past research by Buckley et al. (2005) found that there is a strong relationship between the school's resources and teachers' satisfaction. Conversely, past research has also indicated that a lack of resources within a school is likely to contribute to teachers' job dissatisfaction (Tapper, 1995) and a lack of teacher retention (Buckley et al., 2005). The results of my study indicated that two principal leadership scales, Participatory Decision Making and Moral Perspective, statistically significantly influenced teachers' perceptions of Resource Adequacy, each of which is discussed below.

The Participatory Decision Making scale assesses the extent to which teachers perceive the principal to involve them in making decisions. Participatory decision making is important for developing and strengthening shared meanings and values within a school; and has been shown to contribute to shaping teachers' values, beliefs and assumptions which, in turn, contribute to the school's effectiveness (Reynolds et al., 1996). The finding of past research suggests that shared decision-making is also an important predictor of team achievement (Bergman et al. 2012), the outcome of which is likely to satisfy teachers' higher-order needs (Maslow, 1943). According to Bergman et al. (2012), staff members who engage in shared decisions are likely to experience less task and socio-emotional conflict, thereby promoting teachers' job satisfaction.

The influence of Participatory Decision Making on Resource Adequacy implies that, to increase the quality of facilities and equipment at schools, principals should involve and encourage staff members in making decisions. It is possible that, by

providing appropriate information to members of the school, considering the ways in which the members of the school use that information and involving staff in decision-making; teachers are more likely to be satisfied with the allocation of funding for resources. Participatory decision-making leads to more open communication and facilitates understanding of the influences and potential barriers pertaining to various decisions, including the allocation of resources (Westhuizen et al. (2012).

The Moral Perspective scale was also found to influence Resource Adequacy. The Moral Perspective scale assesses the extent to which teachers perceive their principal to demonstrate personal characteristics that provide a model for them to follow, and behave in ways that are consistent with the beliefs and values that he or she espouses. Past research has suggested that the personal characteristics of a principal (including his or her morals) will influence how he or she enacts his or her role (Judge & Bono, 2000). Research also suggests that a principal's ethical practices, which reflect his or her personal characteristics, are critically important for the success of organisations, in terms of both organisational finance and general organisational integrity (Stenmark & Mumford, 2011). Ethical leadership has been found to be associated with effective reactions toward the leader, including perceptions of effectiveness and trustworthiness (Brown & Trevino, 2006); and a range of outcomes, including job satisfaction and staff members' behaviour (Mayer, Kuenzi, Greenbaum, Bardes, & Salvador, 2009).

The influence of the Moral Perspective scale on Resource Adequacy suggests that improved quality and the provision of equipment and resources for promoting teaching and learning in schools is more likely for those principals with sound personal characteristics. The notion of moral fortitude is particularly salient as a principal strives to make the best decisions for his or her staff members. Research has found that a principal is likely to make worse decisions when they are made in response to a superior, as opposed to a peer or staff member (Stenmark & Mumford, 2011).

The finding of the present study highlights the importance of a principal's personal characteristics and behaviour. A principal wishing to improve his or her character needs to have a strong sense of moral values and provide a strong role model for the

beliefs and values that he or she wants the teachers to adopt (House et al., 1986). This practice can be met by having school interventions that provide a focus beyond organisational rules and guidelines and include instructing participants about the processes involved in ethical decision-making, and the important situational variables that need to be taken into account (Stenmark & Mumford, 2011)

Influence of Principal Leadership Behaviour on Goal Consensus. The Goal Consensus scale assesses the extent to which teachers agree with and are committed to the mission and goals of the school. Building consensus with respect to the school's vision, goals and priorities is an important component of bringing about effective school improvement. It is generally agreed that a principal who does not have a vision that is clear and well developed will find it difficult or impossible to be an effective leader (Owens, 2004). If teachers have a clear understanding of, and an agreement with, the school's vision for the future then they are more likely to have a positive and hopeful outlook (Kouzes & Posner, 2002). Transformational leaders are said to have the capacity to create an image and inspire others with a vision of a desirable future (Bass & Avolio, 1990). Dibaji, Atashpour, Barazandeh, Golparvar and Oreyzi (2012) found that leaders can increase organisational effectiveness by promoting organisational commitment, and creating a shared vision. In the school setting, research strongly supports the notion that teachers who understand and support the school's mission and goals are in a better position to be able to identify what they need to do and make links between their personal strengths and their responsibilities (Hall & Simeral, 2008). The results indicated that three principals' behaviours statistically significantly influenced teachers' perceptions of Goal Consensus: Professional Interaction, Intellectual Stimulation and Moral Perspective.

The influence of Professional Interaction (setting an example for teachers to follow in terms of interactions with staff members) on Goal Consensus, highlights the importance of the principal's interactions with his or her staff members in promoting a culture in which shared meaning and values exist. Such interactions will encourage teacher agreement and commitment to the school mission and goals. For example, when principals engage in professional interaction behaviour then they are more likely to know the teachers better (Gabriel, 2005). According to Bergman et al. (2012), teachers' goal consensuses can be improved by involving them deeply in the team's work, which is likely to enhance their understanding of the nature of their

work, the problem at hand and the reasons why one alternative was accepted and others rejected, thus aiding the consensus-building process.

The results also found that Intellectual Stimulation significantly influenced Goal Consensus, suggesting that school principals who challenge teachers to re-examine and improve their teaching are likely to increase teachers' agreement with, and commitment to, the school's mission and goals. Intellectual Stimulation can be viewed as a process of thinking through the best ways to approach problems and challenges, thus helping teachers to raise their own confidence to perform optimally, which in turn increases their commitment to the school goals (Bass & Avolio, 1994).

Intellectual stimulation is a means of providing support for innovation which, according to Tyler (1985), is a team-level factor that reflects the extent to which the members of the team display supportive behaviour aimed at facilitating the development and implementation of new ideas. Further, Bass (1985) and Avolio et al. (1999) agree that principals who exhibit behaviours associated with intellectual stimulation are likely to inspire extra effort among the teachers to rethink ideas, challenge existing situations and reframe problems.

Finally, the results found that Moral Perspective influenced Goal Consensus, suggesting that, to increase teachers' agreement and commitment to the school's mission and goals, principals need to have positive personal characteristics as viewed by the teachers. Principals who behave in ways that are consistent with the values that he or she espouses and have a strong sense of his or her own moral values, are more likely to inspire staff to be committed to a common goal or vision (Hipp & Bredeson, 1995). Such a leader is likely to provide a strong role model for the belief and values that he or she wants his or her followers to adopt (Bass, 1985). These results support past research that has found that a principal's character is related positively to his or her leadership effectiveness (Judge et al., 2002; Michel & LeBreton, 2011). Specifically, Gough (1990) maintains that principals are more likely to gain teachers' support and commitment to the school mission and goals if they demonstrate positive and ethical behaviours.

Influence of Principal Leadership Behaviour on Teacher Self-Efficacy. The Teacher Self-Efficacy scale assesses the teachers' judgement of their capability, and their

ability to organise and execute a course of action required to attain a desired performance in teaching. Self-efficacy has been studied extensively in the domain of education and found to increase the teachers' performance and capability in teaching and to influence teachers' ability to interpret teaching demand (Klassen et al., 2009). According to Nir and Kranot (2006), teachers' self-efficacy is one of the most influential factors on the quality of teaching and teachers' motivation (Ross et al., 1996), and, ultimately, on their students' outcomes (Woolfolk, Rosoff, & Hoy, 1990). Teachers with a strong sense of personal self-efficacy are likely to have better health, higher achievement and more social integration (Bandura, 1997). The results indicated that one of the five principal leadership scales (Individual Support) had a direct and statistically significant influence on Teacher Self-Efficacy scale.

The results indicated that Individual Support had a statistically significant influence on Teachers' Self-Efficacy. Individual Support assesses the extent to which teachers perceive their principal to be concerned about their feelings and needs as individuals. Principal's Individual Support allows principals to consider staff members as individuals and treating them differently, based on their needs and capabilities. A leader who provides Individual Support is likely to be thoughtful of others and display strong coaching behaviour and mentorship (Bass, 1985).

The results suggest that school principals who are concerned about the feelings and needs of individual staff members are likely to enhance teachers' perceptions of their self-efficacy. This finding supports past research which has found that the self-efficacy of teachers can be improved by paying special attention to the needs and differences of individual teachers (Parry and Proctor-Thomson (2002). According to Hall and Simeral (2008), a principal is more likely to learn the teachers' strengths and maximise their potential if they get to know the teachers individually. Hall and Simeral (2008) also argued that teachers are unique humans who prefer to be noticed for their special qualities and to be given special attention. As such, school principals who are able to cultivate a relationship with each staff member are likely to contribute towards each teacher's professional capacity and self-efficacy. By practicing Individual Support behaviours, principals are in a better position to provide encouragement and support for innovation and alternative problem-solving (Avolio et al., 1999).

6.2.3.2 Influence of School Climate on Teachers' Self-Efficacy

Two school climate scales were found to influence Teacher Self-Efficacy: Affiliation and Goal Consensus. The statistically significant influence of Affiliation on Teacher Self-Efficacy suggests that when teachers perceive themselves to be accepted by their colleagues and able to obtain assistance, advice and encouragement, they are likely to feel more capable to teach successfully, even in difficult situations. This finding supports Bandura's (1986) social cognitive theory, which maintains that individuals develop their self-efficacy through social persuasions. Rosenholtz (1989) noted the importance of teachers' workplace factors in relation to teaching quality, and maintained that teachers who felt that they were supported in their personal ongoing learning and classroom practice were more committed and effective than those who did not receive such confirmation. According to White (2012), teachers with a high sense of their own capability were more likely to adopt new classroom behaviours and also more likely to stay in the profession. The findings of the present study further highlight the importance of teachers' views of affiliation in relation to school effectiveness, specifically for promoting their self-efficacy. The results suggest that teachers' self-efficacy can be improved through a school climate that facilitates positive relationships among the staff members.

The statistically significant influence of teachers' Goal Consensus on Teacher Self-Efficacy suggests that when the teachers are more in agreement and committed to the school's mission and goals, they are likely to have stronger self-efficacy. This finding supports research findings by Fernet et al. (2012) and Kurt et al. (2012), which indicated that changes in teachers' perceptions of their school climate were related to changes in their self-efficacy. According to Ware and Kitsantas (2011), teachers with high self-efficacy are characterised by a higher commitment to teaching.

Overall, the study supports research findings which indicate the association between leadership style and school climate (see, for example: Drago-Severson, 2012; Lohwithee, 2010; and Pepper & Thomas, 2002); association between leadership style and teachers' self-efficacy (see, for example, Nir & Kranot, 2006; and Pereira & Gomes, 2012) and association between school climate and teachers' self-efficacy

(see for example, Collie, Shapka, & Perry, 2012; and Grayson & Alvarez, 2008). The relationship between transformational leadership practices and teachers' self-efficacy can be both direct and indirect (see, Kurt et al., 2012).

6.3 RECOMMENDATIONS FOR PRINCIPALS

Based on my findings, it is recommended that, to improve the school climate and teachers' self-efficacy, school principals consider ways to improve their leadership practice, in particular their Professional Interaction, Participatory Decision Making, Individual Support, Intellectual Stimulation and Moral Perspective. This section, although by no means exhaustive, provides some practical ways in which these elements of leadership might be put into place.

Professional Interaction. To improve the practice of Professional Interaction, it is recommended that principals consider carefully their interactions with teachers and to make a conscious effort to get to know teachers as individuals. These interactions not only generate greater feelings of affiliation and goal consensus within the school but they also are likely to provide an example for others to follow. One means by which principals can improve their interactions is to attend social functions that are held by the school or organised by the principal, as these provide opportunities for principals to interact with teachers on a more personal level and to better know them as individuals.

It is further recommended that, to improve their professional interaction, principals make time for regular, informal discussions with teachers during the course of each week. These clusters of interactions might include lengthy conversation or quick chats, but the key will be to ensure active listening. These sessions will not only give the principals an opportunity to better know his or her teachers but also give insights into the teachers' strengths and challenges.

It is also recommended that principals consider the way in which they interact with teachers, both as individuals and as a group. To improve their professional interactions, principals should become aware of aspects of their interactions that are likely to alienate or enhance relationships with teachers, including body language, prejudices, and the use of positive language. One way in which this could be

achieved might be to video record interactions that might be used as part of a self-critique.

Participatory Decision Making. To improve the leadership practice of Participatory Decision Making, it is recommended that principals be aware of the importance of ensuring that teachers to have opportunities to express their opinions and ideas regarding the school and decisions made concerning its operations. By involving the teachers in making decisions, the school principal is likely to enhance shared meaning and improve teachers' agreement and commitment with the school's mission and goals.

To improve their practice of participatory decision making, it is recommended that principals form consultation groups (made up of teachers) for particular aspects of school decision making (such as budgeting, resourcing, curriculum content and pedagogy). These groups would require the principal to establish strong frameworks and parameters within which the groups can work.

To ensure that participatory decision making is maximised, it is recommended that the principal familiarise the teachers with school issues so they are prepared for their involvement in the decision making process. As such, it is recommended that the principal take teachers into his or her confidence with respect to sharing information about matters related to the school. When teachers have appropriate information, they will be better able to make informed decisions.

To ensure success of including teachers in the decision making, it is recommended that principals put procedures in place to enhance the effectiveness of the meeting process. It is recommended that an appropriate decision making process be selected, depending on the issue at hand (for example, the principal might decide between a meeting, administering survey or conducting interviews). As having a meeting is the most common way of making decision process in Indonesia, it is important for the principals to negotiate a time which best suits all parties. In addition, there should be adequate resources to support an effective meeting.

Individual Support. It is recommended that principals adequately respect the personal feelings and needs of individual teachers and make a conscious effort to provide

support for the individual teachers. This support might take the form of creating a buddy system in which teachers can work together. For example, newer teachers might be buddied with older, more experienced teachers and more experienced teachers with colleagues of similar status. This buddy system could be used to assist with a free flow of information that, if required, would enable the principal to be available for assistance. This support would also generate better understanding about the strengths of each teacher, thus enabling the principals to provide help as needed by different teachers.

An important consideration that principals need to consider when talking to teachers about their strengths, problems or difficulties is the issue of confidentiality. Without trust between the teacher and principal, it is unlikely teachers would be willing to express the difficulties or problems that they are experiencing.

Another means by which a principal could provide individual support towards the teachers will be to pay special attention to each teacher's needs and differences. To do this, the principals need to listen effectively to the teachers and develop a meaningful and personalised interaction with them. In this way, the principal will be better able to support to teachers individually and, in turn, increase teachers' morale by ensuring that they feel respected.

Moral Perspective. It is recommended that principals have concern for their personal character and make an effort to behave in ways that are morally acceptable and in line with the belief and values that are espoused at the schools. This behaviour will not only enhance the integrity of their agenda as school leaders, but also promote teachers' feeling of resource adequacy and promote teachers' commitment towards school vision and goals.

One means by which principals can improve their personal characteristics is by having a strong sense of one's own moral values and providing a strong role model for the belief and values that they want the teachers to adopt. It is further recommended for the principals to be forthcoming with respect to their mistakes and faults.

Moral value, in the Indonesian context is not only important in the school environment, but is also important to a strong society and community. Community members hold the school principal in high esteem, viewing him or her not only as a highly regarded leader of the school, but also as a leader within the community at large. It is recommended, therefore, that the school principal behave as a leader at all times and in all places.

6.4 LIMITATIONS OF THE STUDY

Although the present study has been carefully considered, potential limitations in terms of the sample, methods and instruments used, exist. This section provides an overview of the limitations of the present study.

In terms of the sample, I was both the researcher of this study and a staff member of the Department of Education in West Sumatra, a province where some of the sample was collected from. Although every attempt was made to minimise the risk, it is possible that the teachers from this province may not have been completely honest in completing the questionnaire. To address this issue, throughout the study, I assured the school principals and the teachers that the information that they provided would remain confidential and that it would not influence their performances or outcomes in any way. Further, the teachers' involvement in the study was made on a voluntary basis, without threat or inducement.

The selection of the sample (the provinces and districts) for my study was made to ensure that it was generally representative of the population of Indonesia. Therefore, the sample was selected to include the most dominant ethnic groups from within the country: Minangese from West Sumatra, Batakese and Melayunese from North Sumatra and Javanese from Middle Java. However, as my study included schools from only three provinces on two islands and given the cultural diversity of Indonesia, of which the Javanese are the largest and most dominant group (Suryadinata et al., 2003), generalising the results to other regions in Indonesia should be made with caution.

The newly-developed PLQ was used only once and, although its validity was corroborated by largely quantitative methods, its findings could be verified and enriched through further qualitative methods. A replication study using PLQ,

combined with interviews to crosscheck the findings, would provide contextual information and rich descriptions of principal's transformational leadership practice in Indonesian schools. In addition, such replication also might provide valuable insights into improving the newly-developed questionnaire.

The hypothesised model developed for the study was based on the literature and postulated that transformational leadership practice was likely to increase teachers' perception of their school climate and support their teachers' perceived self-efficacy. It also hypothesised that teachers' perception of their school climate would influence their self-efficacy. It is acknowledged, however, that it is possible that the hypothesised direction could, in some instance, be reversed. For example, the teachers' perception of school climate could also influence transformational leadership behaviour.

The loss of the Vision and Goal scale of the PLQ during factor analysis was a surprise, as past leadership studies had indicated that this scale was reliable (see; for example: Hughes, Ginnett, & Curphy, 1996; Leithwood, Patten, & Jantzi, 2010; and Yukl, 1999). Therefore, a multi-method approach to data collection involving qualitative approach could lead to a more comprehensive understanding of the missing Vision and Goal scale.

6.5 CONTRIBUTIONS OF THE STUDY

A major contribution of the present study was the development and validation of an instrument to assess teachers' perceptions of their principal's leadership behaviour. At the time of writing this thesis, there were no reports of the use of a comprehensive and rigorous construct validity framework to develop a questionnaire that assesses principal transformational leadership behaviour in Indonesian schools. The exacting method used in the present study ensured that the PLQ had high content, face, convergent, discriminant, predictive and concurrent validity. Future researchers who wish to develop and validate new questionnaires could replicate the research methods applied in this study.

The study examined both the school climate and teacher self-efficacy as impacted by school leadership behaviour. As such, the results provide valuable information about the types of behaviours that are likely to improve the school climate and teacher self-

efficacy, both of which are important features of an effective school. Further, the implications of these findings provide principals with practical ideas about how they can modify their behaviour in ways that are likely to improve the school climate and teacher self-efficacy.

The study could provide practical implications for a variety of educational stakeholders in Indonesia. Although dimensions of principal leadership behaviour have been used in previous research, there are no empirical studies to date that have examined transformational leadership behaviours in the Indonesian context. It is likely that this new questionnaire that assesses important dimensions of an effective transformational leader and suited to the Indonesian context, will benefit both the Indonesian education board and school principals.

As the provider of principal professional development in Indonesia, the Indonesian Educational Board could use the newly-developed PLQ to examine the principals' leadership behaviour. Information collected using the PLQ could be useful in guiding the development of interventions strategies aimed at helping principals to develop a more transformational leadership style. In addition, even though past research has involved the assessment of the school climate and teacher self-efficacy in Indonesian studies, reports of the validation of these instruments remains limited. Therefore, the modification and validation of the SLEQ and TSES when used in Indonesian schools could provide the education board with instruments to provide information regarding these important elements of an improving or effective school.

For school principals as individuals, the PLQ could be used as an expedient tool for gathering information on important aspects of their transformational leadership behaviour. The use of PLQ could be used to provide critical feedback as part of a self-evaluation, undertaken with a view to changing his or her behaviour in ways that are more transformative and to creating a more positive school environment. These findings suggest that school principals can facilitate positive school environment and strengthen teachers' self-efficacy by adopting transformative behaviours as outlined in PLQ items.

Overall, the contributions of this study are in line with Grayson and Alvarez's (2008) study, who argued that teachers' perceptions of the school climate are influenced not

only by students' behaviours, but also by the social features of the school environment. The teacher-administrator relationship is an important contributor to teacher's feelings of connectedness to the system in which the principal serves as a facilitator. Further, findings by Hepburn and Brown (2001) suggest that teachers who are satisfied with the behaviour and degree of support provided by the principal show more positive attitudes towards their occupation.

6.6 CONCLUSION

The purposes for this study arose from an important challenge faced by Indonesian school principals in bringing about change in response to the educational reform efforts in Indonesia. The reform agenda at the time of writing this thesis was not reflected in actual implementation due, in part, to a lack of leadership skills on the part of the principals. Therefore, this study has described a fresh response to this important challenge. The confluences of the principal's leadership style on the teachers' work environment and on the teachers' self-efficacy fields provided the impetus for this research.

The results of this study have provided important educational implications related to the quality of the teachers' working environment and self-efficacy, and how these are influenced by the principal's leadership behaviour. The results of the study provide practical implications and relevant information for researchers, professional development providers, school administrators and school principals, with respect to the importance of leadership behaviour and its influence on elements of the school climate that are important for school improvement. These findings can be used to guide future interventions aimed at improving the school climate and teachers' self-efficacy.

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Appendix A

Participant Evaluation Form

Directions for Principals

Please consider the adequacy of the following items for each construct according to the four-point rating scale shown as below:

4 = very appropriate,
3 = appropriate but needs minor alteration,
2 = needs major alternation and
1 = inappropriate.

For items rated **'3'** or **below**, please provide suggestion for improvement about the principal in this school. Please read each statement carefully.

The extent to which the principal sets examples for staff to follow in interactions with staff and students.

I. Symbolising Professional Practice and Value.			
No	*Items*	*Rating*	*Suggestion*
1	Is friendly towards me.		
2	Shows respect for me.		
3	Shows kindness towards me.		
4	Is caring of me.		
5	Is trusting of me.		
6	Is supportive of me.		
7	Does not show favoritism among staff.		
8	Gets along well with me.		

The extent to which the principal works with staff members when making decisions.

II. Fostering Participation in Decision Making			
No	*Items*	*Rating*	*Suggestion*
9	Provides opportunities for me to be involved in making decision.		
10	Provides opportunities for me to participate in the development of school goals.		
11	Encourages me to take part in decision making activities.		
12	Ensures that I am involved in decision making.		
13	Seeks feedback from me in decision making.		
14	Seeks my opinions during decision making.		
15	Considers my ideas during decision making.		
16	Listens to my ideas when making decisions.		
17	Responds positively to my suggestions.		

The extent to which the principal shows concern about the feelings and needs of staff.

III. Providing Individual Support			
No	*Items*	*Rating*	*Suggestion*
18	Knows my strengths.		
19	Helps me to develop my strengths.		
20	Appreciates my contribution to the school.		
21	Can be approached to discuss concerns and grievances.		
22	Is interested in what I am doing in the classroom.		
23	Knows the problems that are faced by me.		
24	Is interested in my problems.		
25	Goes out of his or her way to help me.		

The extent to which the principal encourages staff to re-examine how they teach and rethink how it can be performed.

IV. Providing Intellectual Information/Stimulation			
No	*Items*	*Rating*	*Suggestion*
26	Stimulates me to think about what I am doing for my students.		
27	Encourages me to try new teaching practices.		
28	Encourages me to develop/review my professional goals.		
29	Encourages me to evaluate my practices.		
30	Assists me to refine my practices.		
31	Facilitates opportunities for me to learn from others.		
32	Encourages me to pursue my own goals for professional learning.		
33	Provides information that helps me to think of ways to improve the way I teach.		

The extent to which the principal articulates and inspires others with his or her vision of the future.

V. Building and Articulating the School Vision and Goals			
No	*Items*	*Rating*	*Suggestion*
34	Is passionate about the school vision.		
35	Makes clear his or her vision for the school.		
36	Communicates clear goals for the school.		
37	Communicates the school mission to the school community.		
38	Helps me to clarify the practical implications of the school's mission.		
39	Helps me to understand the relationship between the school mission and national initiatives.		
40	Helps me to establish priorities to attain the school goals.		
41	Encourages me to work towards the school's goals.		

The extent to which the principal demonstrates a set of examples for the school staff members.

VI. Providing an Appropriate Moral Perspective			
No	*Item*	*Rating*	*Suggestion*
42	Is a good person.		
43	Reflects the core values of the school in his or her actions.		
44	Is committed to bettering the school.		
45	Can be relied upon to do what is right for the school.		
46	Allows his or her morals to guide what he or she does as a leader.		
47	Does not allow group pressure to guide her or him.		
48	Is clear about where he or she stands on controversial issues.		
49	Stays true to the goals of the school.		
50	Admits to his or her mistakes.		

Appendix B

Sample of Interview Extracts used to Determine Item Understanding

Item Number	Interview Question	Some Answer Quotes of the Participants
Item 1	In item 1 you have stated that the principal is often friendly. Can you give me examples of when the principal is friendly towards you?	During break time, when we chat and drink coffee together. The way he responds when I'm sick, whether the principal asks me to take a sick leave.
Item 9	Look at item 9, can you give me some examples of opportunities that the principal might give to you that would benefit the school development?	The principal would include me in school meetings. The principal would let me run extracurricular activities that supported the school vision.
Item 17	What did you understand by Item 17 [the principal of this school knows my strengths]?	This item asks me to whether the principal understands what my professional strength and weaknesses are. The item asks whether the principal knows what I like or dislike in teaching.
Item 25	In what ways does the principal of this school stimulate you to think about what you are doing for your students?	"The principal encourages me to use multi-approach in my teaching.
Item 33	How do you know if the school principal is passionate about the school vision?	I know that my principal is passionate because he mentions the vision in every meeting.
Item 43	What do you understand by item 43 [the principal of this school can be relied upon doing what is right for the school]?	It means that he can make good decision if the school has a problem. He would be able to make a suitable school policy.

Appendix C

The Principal Leadership Questionnaire[1]

(English Language Version)

[1] Source of scales
Appendix B is a newly-developed questionnaire which was, in part, modified from five different leadership questionnaires:
Multifactor Leadership Questionnaire (Bass & Avolio, 1990)
Style Questionnaire (Stodgill, 1974)
School-Level Environment Questionnaire (Fisher & Fraser, 1990)
Transformational Leadership Questionnaire (Leithwood & Jantzi, 1999)
Leadership Trait Questionnaire (Zaccaro, Kemp & Bader, 2004)

Principal Leadership Questionnaire (PLQ)

	Practicing appropriate professional interaction					
	The principal of this school…	*Almost Never*	*Seldom*	*Some-times*	*Often*	*Almost Always*
1	Is friendly towards me.	1	2	3	4	5
2	Shows kindness towards me.	1	2	3	4	5
3	Is trusting of me.	1	2	3	4	5
4	Shows respect for me.	1	2	3	4	5
5	Is caring of me.	1	2	3	4	5
6	Is supportive of me.	1	2	3	4	5
7	Attends social activities.	1	2	3	4	5
8	Does not show favouritism among staff.	1	2	3	4	5
	Fostering participation in decision making					
	The principal of this school…	*Almost Never*	*Seldom*	*Some-times*	*Often*	*Almost Always*
9	Provides opportunities for me to participate in the development of school goals.	1	2	3	4	5
10	Provides opportunities for me to be involved in making decision.	1	2	3	4	5
11	Encourages me to take part in decision making activities.	1	2	3	4	5
12	Ensures that I am involved in decision making.	1	2	3	4	5
13	Asks my opinions during decision making.	1	2	3	4	5
14	Listens to my ideas when making decisions.	1	2	3	4	5
15	Considers my ideas during decision making.	1	2	3	4	5
16	Responds positively to my suggestions.	1	2	3	4	5
	Providing individual support					
	The principal of this school…	*Almost Never*	*Seldom*	*Some-times*	*Often*	*Almost Always*
17	Knows my strengths.	1	2	3	4	5
18	Helps me to develop my strengths.	1	2	3	4	5
19	Appreciates my contribution to the school.	1	2	3	4	5
20	Can be approached to discuss concerns and grievances.	1	2	3	4	5
21	Is interested in what I am doing in the classroom.	1	2	3	4	5
22	Knows the problems that are faced by me.	1	2	3	4	5
23	Is interested in my problems.	1	2	3	4	5
24	Goes out of his or her way to help me.	1	2	3	4	5
	Providing intellectual stimulation					
	The principal of this school…	*Almost Never*	*Seldom*	*Some-times*	*Often*	*Almost Always*
25	Stimulates me to think about what I am doing for my students.	1	2	3	4	5
26	Encourages me to try new teaching practices.	1	2	3	4	5
27	Encourages me to develop/review my professional goals.	1	2	3	4	5
28	Encourages me to evaluate my practices.	1	2	3	4	5
29	Assists me to refine my practices.	1	2	3	4	5
30	Facilitates me to learn from others.	1	2	3	4	5
31	Encourages me to pursue my own goals for professional learning.	1	2	3	4	5

32	Provides information that helps me to think of ways to improve the way I teach.	1	2	3	4	5

Articulating the school vision and goals						
The principal of this school…		*Almost Never*	*Seldom*	*Some-times*	*Often*	*Almost Always*
33	Is passionate about the school vision.	1	2	3	4	5
34	Makes clear his or her vision for the school.	1	2	3	4	5
35	Communicates clear goals for the school.	1	2	3	4	5
36	Communicates the school mission to the school community.	1	2	3	4	5
37	Helps me to clarify the practical implications of the school's mission.	1	2	3	4	5
38	Helps me to understand the relationship between the school mission and national initiatives.	1	2	3	4	5
39	Helps me to establish priorities to attain the school goals.	1	2	3	4	5
40	Encourages me to work towards the school's goals.	1	2	3	4	5

Demonstrating a moral perspective						
The principal of this school…		*Almost Never*	*Seldom*	*Some-times*	*Often*	*Almost Always*
41	Reflects the core values of the school in his or her actions.	1	2	3	4	5
42	Is committed to bettering the school.	1	2	3	4	5
43	Can be relied upon to do what is right for the school.	1	2	3	4	5
44	Allows his or her morals to guide what he or she does as a leader.	1	2	3	4	5
45	Does not allow group pressure to guide her or him.	1	2	3	4	5
46	Is clear about where he or she stands on controversial issues.	1	2	3	4	5
47	Stays true to the goals of the school.	1	2	3	4	5
48	Admits to his or her mistakes.	1	2	3	4	5

Appendix D

The Principal Leadership Questionnaire

(Indonesian Language Version)

Principal Leadership Questionnaire (PLQ)

	Interaksi Profesi					
	Kepala sekolah di sekolah ini…	*Hampir Tidak Pernah*	*Jarang*	*Kadang-Kadang*	*Sering*	*Hampir Selalu*
1	Bersahabat dengan saya.	1	2	3	4	5
2	Menunjukkan sikap/itikad baik kepada saya.	1	2	3	4	5
3	Memberi kepercayaan pada saya	1	2	3	4	5
4	Menghargai saya.	1	2	3	4	5
5	Perhatian terhadap saya	1	2	3	4	5
6	Mendukung saya dalam memajukan sekolah.	1	2	3	4	5
7	Menghadiri kegiatan-kegiatan sosial.	1	2	3	4	5
8	Bersikap adil/tidak pilih kasih diantara staff.	1	2	3	4	5
	Demokrasi dalam pengambilan keputusan					
	Kepala sekolah di sekolah ini…	*Hampir Tidak Pernah*	*Jarang*	*Kadang-Kadang*	*Sering*	*Hampir Selalu*
9	Memberi kesempatan pada saya untuk terlibat dalam pengembangan sekolah.	1	2	3	4	5
10	Memberi kesempatan pada saya untuk terlibat dalam pengambilan keputusan.	1	2	3	4	5
11	Menghimbau saya untuk berpartisipasi dalam proses pengambilan keputusan.	1	2	3	4	5
12	Memastikan bahwa saya terlibat dalam pengambilan keputusan.	1	2	3	4	5
13	Meminta pendapat saya dalam membuat keputusan.	1	2	3	4	5
14	Mendengarkan ide-ide saya dalam menetapkan keputusan.	1	2	3	4	5
15	Mempertimbangkan ide-ide saya dalam membuat keputusan.	1	2	3	4	5
16	Merespon saran saya secara positif.	1	2	3	4	5
	Dukungan terhadap guru secara perorangan					
	Kepala sekolah di sekolah ini…	*Hampir Tidak Pernah*	*Jarang*	*Kadang-Kadang*	*Sering*	*Hampir Selalu*
17	Mengetahui potensi saya.	1	2	3	4	5
18	Menolong saya dalam mengembangkan potensi saya.	1	2	3	4	5
19	Menghargai kontribusi saya di sekolah.	1	2	3	4	5
20	Bersedia diajak untuk membahas masalah dan keluhan.	1	2	3	4	5
21	Perduli dengan apa yang saya lakukan dalam kelas.	1	2	3	4	5
22	Mengetahui permasalahan yang saya hadapi.	1	2	3	4	5
23	Perduli dengan permasalahan yang saya hadapi.	1	2	3	4	5
24	Bergegas/ringan tangan untuk menolong saya.	1	2	3	4	5

Kemampuan dalam memberi dorongan						
Kepala sekolah di sekolah ini…		*Hampir Tidak Pernah*	*Jarang*	*Kadang-Kadang*	*Sering*	*Hampir Selalu*
25	Memotivasi saya untuk memikirkan apa yang seharusnya saya lakukan terhadap siswa.	1	2	3	4	5
26	Mendorong saya untuk mencobakan praktik-praktik baru dalam mengajar.	1	2	3	4	5
27	Mendorong saya untuk mengembangkan tujuan profesi.	1	2	3	4	5
28	Mendorong saya untuk mengevaluasi praktek mengajar.	1	2	3	4	5
29	Membantu saya dalam memperbaiki praktik mengajar.	1	2	3	4	5
30	Memberi kesempatan pada saya untuk belajar dari orang lain.	1	2	3	4	5
31	Mendorong saya agar professional dalam pembelajaran demi mencapai tujuan pembelajaran.	1	2	3	4	5
32	Memberi bantuan informasi agar saya lebih mampu memperbaiki cara mengajar.	1	2	3	4	5
Visioner						
Kepala sekolah di sekolah ini…		*Hampir Tidak Pernah*	*Jarang*	*Kadang-Kadang*	*Sering*	*Hampir Selalu*
33	Bersemangat dengan visi sekolah.	1	2	3	4	5
34	Menyampaikan visinya secara jelas terhadap sekolah.	1	2	3	4	5
35	Menyampaikan tujuan-tujuan sekolah yang jelas.	1	2	3	4	5
36	Menyampaikan misi sekolah kepada komunitas sekolah.	1	2	3	4	5
37	Membantu saya dalam memahami apa dampak praktis dari misi sekolah.	1	2	3	4	5
38	Membantu saya dalam memahami apa hubungan antara misi sekolah dan tujuan nasional.	1	2	3	4	5
39	Membantu saya dalam menetapkan prioritas untuk mencapai tujuan sekolah.	1	2	3	4	5
40	Mendorong saya bekerja untuk mencapai tujuan-tujuan sekolah.	1	2	3	4	5
Moral keteladanan						
Kepala sekolah di sekolah ini…		*Hampir Tidak Pernah*	*Jarang*	*Kadang-Kadang*	*Sering*	*Hampir Selalu*
41	Mencerminkan nilai-nilai utama sekolah dalam tindakannya.	1	2	3	4	5
42	Berkomitmen untuk memperbaiki sekolah.	1	2	3	4	5
43	Dapat dihandalkan dalam hal-hal yang tepat untuk sekolah.	1	2	3	4	5
44	Moralnya bisa diteladani sebagai seorang pemimpin.	1	2	3	4	5
45	Tidak terbawa arus oleh tekanan sekelompok orang.	1	2	3	4	5
46	Berpihak pada posisi yang jelas ketika ada isu-isu yang controversial.	1	2	3	4	5
47	Selalu setia pada tujuan sekolah.	1	2	3	4	5
48	Terbuka dengan kritikan/mengakui kesalahannya.	1	2	3	4	5

Appendix E

The School-Level Environment Questionnaire[2]

(English Version)

[2]The questionnaire in Appendix D was modified from the original seven-scale version of the School-Level Environment Questionnaire (Fisher & Fraser, 1991). Modification of the survey to suit the objectives of the present study and the Indonesian context is discussed in Section 4.5.1 of this thesis. The inclusion of the SLEQ in this thesis was done with permission from the authors.

School-Level Environment Questionnaire (SLEQ)

	Affiliation					
	At this school…	*Almost Never*	*Seldom*	*Some-times*	*Often*	*Almost Always*
1	I receive encouragement from colleagues.	1	2	3	4	5
2	I feel accepted by other teachers.	1	2	3	4	5
3	I feel that I can rely on my colleagues for assistance if I need it.	1	2	3	4	5
4	My colleagues take notices of my professional views.	1	2	3	4	5
5	I feel that I have friends among my colleagues.	1	2	3	4	5
6	I feel that there is a good communication between staff members.	1	2	3	4	5
7	I receive support from my colleagues.	1	2	3	4	5
8	I discuss teaching methods with other teachers.	1	2	3	4	5
	Work Pressure					
	At this school...	*Almost Never*	*Seldom*	*Some-times*	*Often*	*Almost Always*
9	I am under pressure to keep working.	1	2	3	4	5
10	I have to work long hours to complete my work.	1	2	3	4	5
11	I have to work very hard.	1	2	3	4	5
12	I have no time to relax.	1	2	3	4	5
13	I cannot take it easy and still get the work done.	1	2	3	4	5
14	I have any deadlines to meet.	1	2	3	4	5
15	It is hard for me to keep my workload	1	2	3	4	5
16	I have to work at home to get my work done.	1	2	3	4	5
	Staff Freedom					
	At this school...	*Almost Never*	*Seldom*	*Some-times*	*Often*	*Almost Always*
17	I am encouraged to be innovative.	1	2	3	4	5
18	I am expected to incorporate a variety of teaching styles in my classroom.	1	2	3	4	5
19	I am able to teach topics that are not in the syllabus.	1	2	3	4	5
20	The rules that I am expected to follow are flexible.	1	2	3	4	5
21	I am free to use a variety of textbooks and resource materials.	1	2	3	4	5
22	I am free to choose how much control I maintain in my classroom	1	2	3	4	5
23	I am encouraged to implement courses or curriculum materials in new ways.	1	2	3	4	5
24	I am encouraged to experiment with different teaching approaches.	1	2	3	4	5

Resource Adequacy						
At this school...		*Almost Never*	*Seldom*	*Some-times*	*Often*	*Almost Always*
25	The library includes an adequate selection of books and periodicals.	1	2	3	4	5
26	The supply of equipment and resources are sufficient.	1	2	3	4	5
27	Data projectors and DVD equipment are available.	1	2	3	4	5
28	Accesses to computers for student use are adequate.	1	2	3	4	5
29	I have adequate access to internet facilities.	1	2	3	4	5
30	Students have adequate access to internet facilities.	1	2	3	4	5
	Facilities are adequate for catering for a variety of classroom activities and learning groups of different sizes.	1	2	3	4	5
32	Access to a variety of suitable technology is available when needed.	1	2	3	4	5

Goal Consensus						
At this school...		*Almost Never*	*Seldom*	*Some-times*	*Often*	*Almost Always*
33	I am committed to the school's goals and values.	1	2	3	4	5
34	I can easily understand the goals of this school.	1	2	3	4	5
35	The values of this school reflect my teaching philosophy.	1	2	3	4	5
36	I set out to help achieve the aims of this school.	1	2	3	4	5
37	Other teachers and I agree with the teaching philosophy of thins school.	1	2	3	4	5
38	I agree with the school's mission statement.	1	2	3	4	5
39	I feel that the school has a clearly stated set of objectives and goals.	1	2	3	4	5
40	I agree with other staff members about the overall mission of this school.	1	2	3	4	5

Appendix F

The School-Level Environment Questionnaire

(Indonesian Language Version)

School-Level Environment Questionnaire (SLEQ)

Kekompakan						
Di sekolah ini …		*Hampir Tidak Pernah*	*Jarang*	*Kadang-Kadang*	*Sering*	*Hampir Selalu*
1	Saya mendapat semangat dari teman-teman sekolega.	1	2	3	4	5
2	Saya merasa diterima oleh guru-guru lain.	1	2	3	4	5
3	Saya bisa menghandalkan bantuan sekolega ketika saya butuh.	1	2	3	4	5
4	Teman kolega perduli dengan pandangan keprofesian saya.	1	2	3	4	5
5	Saya merasa mempunyai teman dekat diantara kolega saya.	1	2	3	4	5
6	Saya merasa ada komunikasi yang baik sesama anggota staff.	1	2	3	4	5
7	Saya menerima bantuan dari teman sejawat.	1	2	3	4	5
8	Saya mendiskusikan metoda mengajar dengan guru lain.	1	2	3	4	5

Tekanan Dalam Kerja						
Di sekolah ini …		*Hampir Tidak Pernah*	*Jarang*	*Kadang-Kadang*	*Sering*	*Hampir Selalu*
9	Saya merasa tertekan dalam bertugas.	1	2	3	4	5
10	Saya harus bekerja terus menerus untuk menyelesaikan tugas.	1	2	3	4	5
11	Saya harus bekerja keras.	1	2	3	4	5
12	Saya tidak punya waktu untuk santai.	1	2	3	4	5
13	Saya tidak boleh cuek dan harus terus bekerja.	1	2	3	4	5
14	Saya mempunyai banyak target yang harus dicapai.	1	2	3	4	5
15	Adalah sulit untuk menyelesaikan beban kerja sekolah.	1	2	3	4	5
16	Saya lembur dirumah untuk menyelesaikan kerja sekolah.	1	2	3	4	5

Kebebasan Staff						
Di sekolah ini …		*Hampir Tidak Pernah*	*Jarang*	*Kadang-Kadang*	*Sering*	*Hampir Selalu*
17	Saya bersemangat untuk berinovasi.	1	2	3	4	5
18	Saya diharapkan menerapkan berbagai cara dalam mengajar.	1	2	3	4	5
19	Saya boleh mengajarkan topik-topik yang tidak ada didalam sillabus.	1	2	3	4	5
20	Peraturan sekolah yang harus diikuti cukup fleksibel.	1	2	3	4	5
21	Saya bebas menggunakan berbagai macam buku teks dan sumber pembelajaran.	1	2	3	4	5
22	Saya bebas memilih sejauh mana kontrol saya dalam kelas.	1	2	3	4	5
23	Saya diharapkan mengimplementasikan materi pelajaran/kurikulum dengan cara-cara baru.	1	2	3	4	5
24	Saya didorong untuk mencobakan berbagai pendekatan mengajar.	1	2	3	4	5

Kecukupan Fasilitas						
Di sekolah ini …		*Hampir Tidak Pernah*	*Jarang*	*Kadang-Kadang*	*Sering*	*Hampir Selalu*
25	Perpustakaan memiliki koleksi buku dan jurnal yang memadai.	1	2	3	4	5
26	Pengadaan peralatan dan sumber mengajar memadai.	1	2	3	4	5
27	Peralatan proyektor dan DVD tersedia.	1	2	3	4	5
28	Akses komputer untuk siswa mencukupi.	1	2	3	4	5
29	Akses terhadap falilitas internet memadai untuk guru.	1	2	3	4	5
30	Akses terhadap fasilitas internet memadai untuk siswa.	1	2	3	4	5
31	Fasilitas ruang dengan ukuran yang bervariasi tersedia untuk menampung berbagai kegiatan kelas dan kelompok belajar.	1	2	3	4	5
32	Teknologi yang relevan untuk pembelajaran mencukupi.	1	2	3	4	5

Konsensus Organisasi						
Di sekolah ini…		*Hampir Tidak Pernah*	*Jarang*	*Kadang-Kadang*	*Sering*	*Hampir Selalu*
33	Saya komit dengan tujuan dan nilai-nilai sekolah.	1	2	3	4	5
34	Saya bisa memahami visi/misi sekolah dengan mudah.	1	2	3	4	5
35	Norma-norma di sekolah ini tercermin dalam filosofi pengajaran saya.	1	2	3	4	5
36	Saya siap membantu sekolah dalam mencapai tujuannya.	1	2	3	4	5
37	Saya dan guru yang lain setuju dengan filosofi pembelajaran di sekolah ini.	1	2	3	4	5
38	Saya setuju dengan kalimat-kalimat misi sekolah.	1	2	3	4	5
39	Saya merasa sekolah ini memiliki tujuan dan visi yang jelas.	1	2	3	4	5
40	Saya dan staf lainnya secara umum setuju dengan misi sekolah.	1	2	3	4	5

Appendix G

The Teacher Self-Efficacy Scale[3]

(English Lnguage Version)

[3]This scale is modified from Schwarzer, Mueller and Greenglass' (1999) General Self-Efficacy Scale (GSES).

Teacher Self-Efficacy (TSE)

Teacher Self-Efficacy						
As a teacher …		*Almost Never*	*Seldom*	*Some-times*	*Often*	*Almost Always*
1	I can successfully teach the most difficult students.	1	2	3	4	5
2	I can maintain a positive relationship with parents even when tensions arise.	1	2	3	4	5
3	When I try hard, I can get through to the most difficult students.	1	2	3	4	5
4	As time goes by, I will become more capable of addressing my students' needs.	1	2	3	4	5
5	Even if I get disrupted while teaching, I can stay calm and continue to teach well.	1	2	3	4	5
6	I can be responsive to my students' needs even if I am having a bad day.	1	2	3	4	5
7	I can exert a positive influence on both the personal and academic development of my students.	1	2	3	4	5
8	I can develop creative ways to cope with system constraints (such as budget cuts and other administrative problems) and continue to each well.	1	2	3	4	5
9	I can motivate my students to participate in innovative projects.	1	2	3	4	5
10	I can carry out innovative projects even my colleagues disagree with my ideas.	1	2	3	4	5

Appendix H

The Teacher Self-Efficacy Scale

(Indonesian Language Version)

Teacher Self-Efficacy (TSE)

Rasa Percaya Diri Guru						
Sebagai seorang guru...		*Hampir Tidak Pernah*	*Jarang*	*Kadang-Kadang*	*Sering*	*Hampir Selalu*
1	Saya bisa berhasil mengajar siswa yang bermasalah.	1	2	3	4	5
2	Saya bisa menjalin hubungan baik dengan orang tua siswa meskipun ketika ada masalah.	1	2	3	4	5
3	Jika saya berusaha keras, saya bisa menghadapi siswa yang sangat bermasalah.	1	2	3	4	5
4	Sejalan dengan waktu, saya semakin mampu memahami kebutuhan siswa-siswa saya.	1	2	3	4	5
5	Meskipun ada gangguan ketika mengajar, saya tetap bisa tenang dan mengajar dengan baik.	1	2	3	4	5
6	Saya mampu merespon kebutuhan siswa, meskipun hati saya sedang tidak enak.	1	2	3	4	5
7	Saya bisa memberi pengaruh positif terhadap perkembangan pribadi maupun perkembangan akademik siswa.	1	2	3	4	5
8	Saya bisa kreatif dalam mengatasi kelemahan-kelemahan sistim (misalnya: adanya pemotongan keuangan dan masalah administrasi) dan tetap mengajar dengan baik.	1	2	3	4	5
9	Saya mampu memotivasi siswa untuk berpartisipasi dalam kegiatan-kegiatan inovatif.	1	2	3	4	5
10	Saya bisa melakukan kegiatan/inovasi baru meskipun teman sekolega tidak menyetujui ide-ide saya.	1	2	3	4	5

Appendix I

Ethics Approval Letter

Curtin University

Memorandum

To	Enceria Damanik, SMEC
From	Pauline Howat, Administrator, Human Research Ethics Science and Mathematics Education Centre
Subject	Protocol Approval **SMEC-84-11**
Date	26 September 2011
Copy	Jill Aldridge, SMEC

Office of Research and Development

Human Research Ethics Committee

Telephone 9266 2784
Facsimile 9266 3793
Email hrec@curtin.edu.au

Thank you for your "Form C Application for Approval of Research with Low Risk (Ethical Requirements)" for the project titled *"Investigating Principal Leadership and its Impact on School Climate, Teacher Self-efficacy and Student Engagement in Indonesian Schools"*. On behalf of the Human Research Ethics Committee, I am authorised to inform you that the project is approved.

Approval of this project is for a period of twelve months **6th September 2011** to **5th September 2012**.

The approval number for your project is **SMEC-84-11**. *Please quote this number in any future correspondence*. If at any time during the twelve months changes/amendments occur, or if a serious or unexpected adverse event occurs, please advise me immediately.

PAULINE HOWAT
Administrator
Human Research Ethics
Science and Mathematics Education Centre

Please Note: The following standard statement must be included in the information sheet to participants:
This study has been approved by the Curtin University Human Research Ethics Committee (Approval Number SMEC-84-11). If needed, verification of approval can be obtained either by writing to the Curtin University Human Research Ethics Committee, c/- Office of Research and Development, Curtin University of Technology, GPO Box U1987, Perth, 6845 or by telephoning 9266 2784 or hrec@curtin.edu.au

Appendix J

Department of Education's Information Sheet

Curtin University

To: The Department of Education [name of department]
in [name of district]

Dear Sir or Madam,

My name is Enceria Damanik. I am currently completing a research at Science and Mathematics Education Center at Curtin University of Technology. I invite you to consider involving in my research entitled '*Principal Leadership Style and Its Impact on School Climate and Teacher Self-Efficacy in Indonesian Schools*'.

Purpose of Research
I am investigating the impact of the principal's leadership style on school climate and teacher self-efficacy in Indonesian schools.

Your Role
I am interested in finding out about teachers' perceptions of their principal's leadership style, their school climate and their self-efficacy. I would like you to give permission for using school teachers in your area to answer the questionnaires.

Confidentiality
The information your teachers provide will be kept separate from their personal details, and only my supervisor and myself will have access to this. Your teachers' answer will be kept in a locked cabinet for at least five years, before a decision is made as to whether it should be destroyed.

Further Information
This research has been reviewed and given approval by Curtin University of Technology Human Research Ethics Committee (Approval Number SMEC-84-11). If you would like further information about the study, please feel free to contact me on 0450288425 or email me at enceria@yahoo.com. Alternatively, you can contact my supervisor: Dr. Jill M. Aldridge on +61892663592 or at j.aldridge@curtin.edu.au.
Thank you very much for allowing the school teachers in your area taking parts in this research. Your consideration is greatly appreciated.

Yours sincerely,

Enceria Damanik

Appendix K

Principals' Information Sheet and Consent Form

Curtin University

Dear Principal,

My name is Enceria Damanik. I am currently completing a research at Science and Mathematics Education Center at Curtin University of Technology. I invite you to consider taking part in my research entitled '*Principal Leadership Style and Its Impact on School Climate and Teacher Self-Efficacy in Indonesian Schools*'**.**

Purpose of Research
I am investigating the impact of the principal's leadership style on school climate and teacher self-efficacy in Indonesian schools.

Your Role
I am interested in finding out about your teachers' perceptions of your leadership style, the school climate and their self-efficacy in this school. I would like you to give permission for using your teachers' time to answer the questionnaires.

Consent to Participate
Your teachers' involvement in the research is entirely voluntary. They have the right to withdraw at any stage of the research without it affecting their rights or my responsibilities. When you have signed the consent form, I will assume that you have allowed me to involve the teachers at your schools in this research.

Confidentiality
The information your teachers provide will be kept separate from their personal details, and only my supervisor and myself will have access to this. Your teachers' answer will be kept in a locked cabinet for at least five years, before a decision is made as to whether it should be destroyed.

Further Information
This research has been reviewed and given approval by Curtin University of Technology Human Research Ethics Committee (Approval Number SMEC-84-11). If you would like further information about the study, please feel free to contact me on 0450288425 or email me at enceria@yahoo.com. Alternatively, you can contact my supervisor: Dr. Jill M. Aldridge on +61892663592 or at j.aldridge@curtin.edu.au.
Thank you very much for your considerations on allowing your teachers taking parts this research. Your cooperation is greatly appreciated.

Yours sincerely,

Enceria Damanik

Principal's Consent Form

Principal Leadership Style and Its Impact on School Climate and Teacher Self-Efficacy in Indonesian Schools.

- I understand the purpose and procedures of the study.
- I have been provided with the participation information sheet.
- I understand that the procedure itself may not benefit me.
- I understand that my approval is voluntary and I can withdraw at any time without problem.
- I understand that no personal identifying information like teacher's name, address or school name will be used in any published materials.
- I understand that all information will be securely stored for at least 5 years before a decision is made as to whether it should be destroyed.
- I have been given the opportunity to ask questions about this research.
- I agree to allow the teachers of my school to participate in the study outlined to me.

_____

Name: _____

Signature: _____

Date: _____

Appendix L

Teachers' Information Sheet and Consent Form

Curtin University

Science and Mathematics Education Centre

Dear Teacher,

My name is Enceria Damanik. I am currently completing a research at Science and Mathematics Education Center at Curtin University of Technology. I invite you to consider taking part in my research entitled '*Principal Leadership Style and Its Impact on School Climate and Teacher Self-Efficacy in Indonesian Schools*'**.**

Purpose of Research
I am investigating the impact of the principal's leadership style on school climate and teacher self-efficacy in Indonesian schools.

Your Role
I am interested in finding out about your perception of the principal's leadership style, the school climate and how these influence your self-efficacy in this school. I will use three questionnaires that will take you about 30 minutes to respond to.

Consent to Participate
Your involvement in the research is entirely voluntary. You have the right to withdraw at any stage of the research without affecting your rights or my responsibilities. When you have signed the consent form, I will assume that you have agreed to participate and allow me to use your data in this research.

Confidentiality
The information you provide will be kept separate from your personal details, and only my supervisor and myself will have access to this. Your answer will be kept in a locked cabinet for at least five years, before a decision is made as to whether it should be destroyed.

Further Information
This research has been reviewed and given approval by Curtin University of Technology Human Research Ethics Committee (Approval Number SMEC-84-11). If you would like further information about the study, please feel free to contact me on 0450288425 or email me at enceria@yahoo.com. Alternatively, you can contact my supervisor: Dr. Jill M. Aldridge on +61892663592 or at j.aldridge@curtin.edu.au.
Thank you very much for your considerations on taking parts this research. Your participation is greatly appreciated.

Yours sincerely,

Enceria Damanik

Teacher's Consent Form

Principal Leadership Style and Its Impact on School Climate and Teacher Self-Efficacy in Indonesian Schools

• I understand the purpose and procedures of the study.

• I have been provided with the participation information sheet.

• I understand that the procedure itself may not benefit me.

• I understand that my involvement is voluntary and I can withdraw at any time without problem.

• I understand that no personal identifying information like my name, address or school will be used in any published materials.

• I understand that all information will be securely stored for at least 5 years before a decision is made as to whether it should be destroyed.

• I have been given the opportunity to ask questions about this research.

• I agree to participate in the study outlined to me.

_____

Name: _____

Signature: _____

Date: _____

Appendix M

The Convergent Validity of the PLQ, the SLEQ and the TSES[4]

[4]The table at Appendix L reports the confirmation of convergent validity of items and scales of the three instruments involved in the research postulated model by employing three measures: (1) factor loading, (2) composite reliability and (3) average variance extracted. The explanation of this table is discussed in Section 5.3.1 of this thesis.

Latent Variable	Item	Factor Loading	Remarks	Composite Scale Reliability	Average Variance Extract
Professional Interaction	PI 1	0.72	Valid	0.92	0.60
	PI 2	0.80	Valid		
	PI 3	0.78	Valid		
	PI 4	0.80	Valid		
	PI 5	0.86	Valid		
	PI 6	0.80	Valid		
	PI 7	0.65	Valid		
	PI 8	0.75	Valid		
Participatory Decision Making	DM 9	0.81	Valid	0.96	0.74
	DM 10	0.86	Valid		
	DM 11	0.85	Valid		
	DM 12	0.80	Valid		
	DM 13	0.90	Valid		
	DM 14	0.93	Valid		
	DM 15	0.92	Valid		
	DM 16	0.81	Valid		
Individual Support	IS 17	0.76	Valid	0.95	0.71
	IS 18	0.85	Valid		
	IS 19	0.85	Valid		
	IS 20	0.83	Valid		
	IS 21	0.83	Valid		
	IS 22	0.88	Valid		
	IS 23	0.90	Valid		
	IS 24	0.83	Valid		
Intellectual Stimulation	IST 25	0.82	Valid	0.96	0.75
	IST 26	0.90	Valid		
	IST 27	0.92	Valid		
	IST 28	0.90	Valid		
	IST 29	0.90	Valid		
	IST 30	0.85	Valid		
	IST 31	0.82	Valid		
	IST 32	0.82	Valid		
Moral Perspective	MP 41	0.89	Valid	0.94	0.67
	MP 42	0.86	Valid		
	MP 43	0.91	Valid		
	MP 44	0.87	Valid		
	MP 45	0.59	Valid		
	MP 46	0.68	Valid		
	MP 47	0.90	Valid		
	MP 48	0.80	Valid		
Affiliation	AF 1	0.72	Valid	0.91	0.55
	AF 2	0.75	Valid		
	AF 3	0.83	Valid		
	AF 4	0.89	Valid		
	AF 5	0.74	Valid		
	AF 6	0.70	Valid		
	AF 7	0.70	Valid		
	AF 8	0.56	Valid		
Work Pressure	WP 10	0.67	Valid	0.87	0.52
	WP 11	0.73	Valid		
	WP 12	0.68	Valid		
	WP 13	0.80	Valid		
	WP 14	0.87	Valid		
	WP 16	0.53	Valid		

Latent Variable	Item	Factor Loading	Remarks	Composite Scale Reliability	Average Variance Extract
Resource Adequacy	RA 25	0.67	Valid	0.94	0.65
	RA 26	0.78	Valid		
	RA 27	0.72	Valid		
	RA 28	0.82	Valid		
	RA 29	0.86	Valid		
	RA 30	0.85	Valid		
	RA 31	0.83	Valid		
	RA 32	0.89	Valid		
Goal Consensus	GC 33	0.77	Valid	0.94	0.65
	GC 34	0.75	Valid		
	GC 35	0.76	Valid		
	GC 36	0.74	Valid		
	GC 37	0.84	Valid		
	GC 38	0.87	Valid		
	GC 39	0.88	Valid		
	GC 40	0.85	Valid		
Teacher Self-Efficacy	TSE 41	0.65	Valid	0.92	0.54
	TSE 42	0.68	Valid		
	TSE 43	0.70	Valid		
	TSE 44	0.76	Valid		
	TSE 45	0.70	Valid		
	TSE 46	0.75	Valid		
	TSE 47	0.82	Valid		
	TSE 48	0.75	Valid		
	TSE 49	0.86	Valid		
	TSE 50	0.62	Valid		