Impact of Minnesota Principals Academy on Principal Self Efficacy

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Dedication

To the love of my life and my partner in all things, Lauren, who sacrificed and supported me in this endeavor. To my parents who taught me the value of hard work, perseverance, and education. And to my children whom I hope I have taught the same values that my parents taught me.

Abstract

This study investigated the impact of principal professional development on leaders' self-efficacy in four domains of school leadership: Setting Directions, Developing People, Redesigning the Organization, and Managing the Instructional Program. Subjects in this study had participated in an 18-month principal leadership academy, with some of them also receiving coaching. In addition, this study sought to understand the relationships among principal self-efficacy, principal collective efficacy, and the possible effect of having fellow principals in a district previously participate in the principal leadership development academy. Evidence of impact was collected via a post hoc survey of principals who were past participants in Minnesota Principals Academy (MPA). The survey assessed their efficacy before and after the academy experience. In addition, individual interviews were conducted with a small purposive sample of academy participants. Respondents reported statistically significant higher levels of self-efficacy related to all four domains of school leadership after participating in MPA. Additionally, the effect size for the growth in principal self-efficacy was very large. Further, design elements such as a cohort-model and having a high-quality, research-based curriculum were critical components in supporting their growth. Findings from this study also show that critical colleagues (both within the cohort and from outside the cohort) supported growth in principal self-efficacy. Finally, this study also revealed a weak relationship between principal self-efficacy and principal collective efficacy, even when more than half the principals in a district had previously participated in MPA.

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Chapter 1

Purpose and Significance

Introduction

In the last twenty years, educational reforms have emphasized exhaustive and rigorous standards, increased accountability through standardized testing requirements, and increased scrutiny of teacher quality through teacher evaluation. With the reauthorization of the Elementary and Secondary Education Act in 2001, school accountability reached new heights, forcing significant reform. According to Ravitch (2016),

> No Child Left Behind – or NCLB – changed the nature of public schooling across the nation by making standardized test scores the primary measure of school quality. Because test scores were the ultimate judge of a school's success or failure, they became more than a measure; they became the purpose of education. Federal law made the rise or fall of test scores in reading and mathematics become the critical variable in judging students, teachers, principals and schools (p. 17).

Further, schools and their leaders are being asked to improve achievement for all students while closing gaps among student groups in an era of growing income inequality, increasing mental health needs, and rapid demographic shifts in student populations.

Principal leadership has significant impacts on school culture and performance. Only teacher quality, which accounts for 33% of the effects, has more school-level impacts on student achievement (Leithwood & Riehl, 2003; Marks & Printy, 2003; Marzano et al., 2005; Waters et al., 2003). Further, because of a school leader's

influence on teacher quality through evaluation, coaching, and professional development, principal leadership has a "multiplier" effect (Louis, Leithwood, et al., 2010; Marzano et al., 2005; Rowland, 2017). High-quality principal leadership is vital in an era of complexity, accountability, and reform (Darling-Hammond et al., 2007; Davis et al., 2005; Leithwood et al., 2004). Indeed, school reform research suggests that effective school leadership is an essential component of successful school reform (Hallinger & Heck, 1998; Leithwood et al., 2004b; Mascall et al., 2008)

Statement of the Problem

Principals play a critical and central role in positive educational outcomes for students (Marzano et al., 2005). However, although there have been recent efforts at reform, principal pre-service training and development had been largely ineffective in the US in equipping principals with the skills they need to successfully lead schools in the 21st century during an era of school reform (Briggs et al., 2016; Davis, 2016; Davis et al., 2005; Huff et al., 2013; James-Ward & Potter, 2011; Manna, 2015; Portin, 2004). In order to be effective, principals need professional development across their tenure, not just quality pre-service training. In addition, the needs of experienced principals differ from new principals (Cardno & Youngs, 2013; Rich & Jackson, 2005). In the face of increased accountability, scrutiny, and reform, principals leading schools need to be equipped with new knowledge, skills, and ways of thinking (Bloom et al., 2005).

In part, this need emerges from principals' need to believe they can successfully meet the challenges of the task of school improvement. (Tschannen-Moran & Gareis, 2004). This type of self-efficacy is essential to a school leader's success "because it determines the degree of effort exerted on a particular task as well as the kinds of

aspirations and goals that leaders set not only for themselves but also for their staff" (Versland, 2016, p. 301). Beyond the goals themselves, self-efficacy also impacts the amount of effort one puts into accomplishing their goals, their persistence in the face of difficulty and their resilience in responding to failure (Bandura, 1991; Gist & Mitchell, 1992; Leithwood & Jantzi, 2008; Maurer, 2001). Self-efficacy is a predictor of effective performance (Bandura, 1991; Locke et al., 1984; Schunk, 1995; Stajkovic & Luthans, 1998).

Because school leaders play a critical role in school quality and improvement, states, higher education institutions, and school districts are looking for evidence-based methods for improving the leadership capacity of principals to meet the changing needs of schools in this era of school reform and positively impact student outcomes. And while principal development for experienced principals is critical, there is an overall lack of development opportunities. Even when there are opportunities, they often do not have the requisite design elements found to be characteristic of quality programs that develop the critical skills for being an effective school leader or for developing the self-efficacy necessary for such leadership (Darling-Hammond et al., 2007; Grissom et al., 2013). When experienced principals do not get the professional development they need, they can be ill-equipped to meet the educational challenges they face (Meddaugh, 2014). Further, lack of professional development can lead to turnover (Robin et al., 2015), which negatively impacts school culture (Mascall & Leithwood, 2010; Meddaugh, 2014).

Principals need access to long term, job-embedded, cohort-based, research-based, and problem-based professional development that supports reflective practice (Sparks & Hirsch, 2000). Two types of principal development that are systematic, comprehensive,

and aligned to these characteristics that have received the most attention in the literature are principal academies and principal coaching. Consensus is emerging about the foundational domains of school leadership practices that should be the focus of principal professional development: Setting Directions, Developing People, Redesigning the Organization, and Managing the Instructional Program (Darling-Hammond et al., 2007; Leithwood & Jantzi, 2008; Sutcher et al., 2017; Wahlstrom et al., 2010). However, little research has been done on the impact of such professional development on principal self-efficacy aligned to these four foundational domains of effective school leadership.

In an era of school reform with increasing demands on schools and school leaders, principals need different capabilities to be successful than they did twenty years ago. Most sit-and-get, one- to two-day conferences or institutes will not provide what principals need. Minnesota principals have the fortunate opportunity to have access to a comprehensive and systematic professional development academy aligned to the characteristics of effective programs that build the leadership capacity of principals to meet today's challenges. As such, it makes an ideal environment to explore the impact of such programs on principal self-efficacy.

As a key policy driver in the effort to raise the quality of principal leadership to meet the changing needs of schools during an era of school reform and to improve student learning, the state of Minnesota has invested three million dollars since 2007 in the Minnesota Principals Academy (MPA), an in-service principal leadership development program for practicing administrators. In addition to the investment from the state, education service cooperatives, school districts and principals themselves have invested their fiscal resources and time into engaging in MPA. This cohort-based,

eighteen-month professional development academy has served over three hundred participants since its inception.

Minnesota Principals Academy has been evaluated twice by the Center for Applied Research and Educational Improvement (CAREI), once in 2010 and again in 2017. The 2010 study focused on the extent to which the program was meeting its stated goals (Wahlstrom et al., 2010). In 2017, the evaluation report focused on what knowledge participants gained specific to the curriculum used, as well as their changes in practice and the extent to which supervisors of those MPA participants saw a change in participants' knowledge in the areas covered by the curriculum (Fields et al., 2017). Neither report addressed or assessed changes in principal self-efficacy or collective principal efficacy, nor did those studies specifically frame their investigations around the four domains of school leadership.

Purpose of this Study

As states, higher education institutions, districts, and principals themselves choose how to allocate limited resources to school improvement, this study seeks to add to the body of research regarding principal development academies to better understand the personal growth outcomes for participants. Therefore, the purpose of this study is to describe the impact a principal leadership academy had on participants' self-efficacy specific to the four domains of effective principal leadership practices. These leadership practices, which include Setting Directions, Developing People, Redesigning the Organization, and Managing the Instructional Program, have been linked to increased student achievement (Wahlstrom et al., 2010). Specifically, the study describes the change in participant self-efficacy ratings pre and post participation for each of the four

domains and seek to explain any differences between them. Additionally, this study seeks to describe the features of the principal development academy to which participants most attribute their growth. To help understand the extent to which participation in MPA was likely the cause of changes in principal self-efficacy ratings, a series of contextual factors were analyzed. Further, the study describes differences in principal self-efficacy growth between participants who also had coaching and those that did not.

Beyond examining a principal's self-efficacy, this study examines collective efficacy, which is quite similar to individual efficacy except that the focus is on the given group's collective capabilities to plan, organize, and execute the courses of action needed to accomplish a task or produce a given level of attainment (Bandura, 1977). It is important to note that collective principal efficacy is not the sum of self-efficacy of the individuals within the group. Rather, it is the confidence group members have in their group's collective capabilities. This study describes the relationship between the percentage of principals in a district who have participated in MPA and participants' rating of principals' collective efficacy. Further, the study describes the relationship between district size and principal collective efficacy.

Conceptual/Theoretical Framework for the Study

To address the research questions for this study, three bodies of literature have been examined: 1) principal leadership development, 2) principal self-efficacy, and 3) principal leadership tasks.

Leadership experiences can come in many forms. The focus of this study is on principal leadership development experiences and their impact on principal self-efficacy. These experiences potentially serve as sources of increased self-efficacy

through mastery experiences, vicarious experiences, and persuasion. Leadership development experiences such as principal leadership academies and coaching can also lead to increased knowledge, skills, and abilities, which also play a role in principal self-efficacy assessments.

Self-efficacy is a construct integrating the three parts of social cognitive theory (Bandura, 1977). It results from one's assessment of their personal capabilities, the task, and the environment in which it needs to be completed (Wood & Bandura, 1989b). Self-efficacy plays a role in one's choices related to goal setting, effort, persistence, resilience, and emotional regulation (Bandura, 1991; Gist & Mitchell, 1992; Leithwood & Jantzi, 2008; Maurer, 2001). There is also evidence that self-efficacy is a key causal variable in performance (Locke et al., 1984).

The specific tasks this study investigated were those associated with effective school leadership and, although not the focus of this study, ultimately increased student outcomes. These tasks are aligned to four domains of school leadership, which include Setting Directions, Developing People, Redesigning the Organization, and Managing the Instructional Program.

Based on the bodies of literature examined to frame this study and to determine what is still unknown about principal leadership, it can be theorized that if principals participate in quality leadership development related to the four domains of school leadership, their self-efficacy related to those domains will increase, and therefore they will set higher goals, develop better strategies to accomplish tasks associated with their goals, persist in achieving those goals, and be more resilient when failures occur. All of

which leads to improved leader performance and ultimately improved school outcomes such as student achievement.

Significance of the Study

Past studies have identified effective principal professional development characteristics, largely based on reports of satisfaction from participants. Few studies have described the impact of principal professional development that incorporates these characteristics on principal self-efficacy (PSE). Those that have examined PSE have neither examined a change in PSE pre and post participation, nor examined PSE aligned to the four domains of school leadership practices.

Previous studies have examined the overall impact of principal academies that include coaching as a design component for all participants. No study could be found that examined differences between participants that had coaching and those that did not for persons who participated in the same principal leadership development academy. This study may provide valuable information regarding the potential value-added of a coaching design element to principal academies regarding PSE, similar to studies in other fields, including business and healthcare that often include coaching as an element of their professional development.

Definition of Terms

- Self-efficacy--One's beliefs in their ability to accomplish certain tasks in a given context (Bandura, 1977).
- Collective efficacy--a group's belief in its ability to accomplish certain tasks as a group in a given context.

- Minnesota Principals Academy--An eighteen-month, cohort-based, principal professional development program run by the University of Minnesota, using a research-based curriculum from the National Institute of School Leadership and supplemented with content developed by University of Minnesota faculty and staff.
- Head principal--The leader of a school building with operational decision-making authority-- not an Associate Principal or Assistant principal.
- Greater Minnesota (MN)--Geographic area of Minnesota outside the seven-county metropolitan area (Minneapolis, St. Paul, and the surrounding suburbs).
- Free and Reduced Priced Meal--Families with limited income can qualify for this Federal program according to income criteria. It is generally considered an indication of financial hardship or poverty.
- Formal coaching--Relationship between two individuals where one person guides the other through a process, including goal setting and action planning, and regular meetings focused on reflection and monitoring progress.
- Informal coaching--Relationship between two individuals that may or may not have clear roles of coach and coachee, or both individuals take on each or the roles at various points. Interactions provide opportunities for reflection, problem-solving, and advice, but do not include goal setting and action planning.
- Coachee--Person receiving coaching, formally or informally.
- Critical colleague--a person who is formally or informally supporting another through collaborative problem-solving, providing responsive feedback to a colleague or peer to help or improve an action or idea

Limitations of the Study

Generalization of the findings to the population of school principals may be inhibited due first to the fact that participation in MPA is voluntary. A further potential limitation to generalization is that participation in the survey and interview for this study was also voluntary. In both regards, those who chose to participate may be different than those who did not. Such selection bias may mean that the findings in this study do not apply generally to the population.

Another limitation of this study emanates from the time period over which participants are asked to remember their feelings of confidence in their capabilities. Some principals in this study participated in MPA over ten years ago; these participants' memories may not be fully accurate. Similarly, principals who responded to this study's survey were also asked to rate their confidence at the time they took the survey. Depending on when principals participated in MPA, there could have been a significant time span between completion of MPA and when they completed the survey. Consequently, a number of other potential influences on a principal's confidence in their capabilities as a leader could have impacted their rating of their confidence at the time this study was being conducted.

Delimitations of the Study

This study sought to understand the impact of principal professional development academies generally, but only examined one such academy, Minnesota Principals Academy. Further, only MPA participants who were practicing principals at the time they started MPA, and were continuing as a school principal at the time the survey was administered, were selected to participate in this study. These criteria eliminated

approximately half of past MPA participants, who had occupied other educational leadership positions at the time they began MPA or at the time the study was conducted, such as being a central office leader or state education department leader. The criteria also eliminated participants who were practicing principals at the time they began MPA, but had retired or moved on to other educational leadership positions such as central office leader.

Further, this study focused on principal perceptions. It did not examine principal leadership practices related to the four domains of school leadership through direct observation, participant report, teacher report, or central office report.

Finally, as a past participant in MPA and facilitator for MPA since 2014, several participants in the study know me personally. This relationship may have influenced how they answered survey or interview questions.

Chapter 2

Literature Review

Critical Issue

Principals play a critical and central role in positive educational outcomes for students (Marzano et al., 2005). However, principal pre-service training and development has been largely ineffective in the US in equipping principals with the skills they need to successfully lead schools in the 21st century (Briggs et al., 2016; Davis, 2016; Davis et al., 2005; Huff et al., 2013; James-Ward & Potter, 2011; Portin, 2004). In order to be effective, principals need professional development across their tenure and the needs of experienced principals differ from new principals (Cardno & Youngs, 2013; Rich & Jackson, 2005). In part, this need emerges from principals' need to believe they can successfully meet the challenges of the task of school improvement (Tschannen-Moran & Gareis, 2004). This type of self-efficacy is essential to a school leader's success "because it determines the degree of effort exerted on a particular task as well as the kinds of aspirations and goals that leaders set not only for themselves, but also for their staff" (Versland, 2016, p. 301). Indeed, principals are "multipliers" due to their influence on teachers, who account for 33% of the school effects on student learning (Marzano et al., 2005; Rowland, 2017).

While principal development for experienced principals is critical, there is an overall lack of development opportunities. Even when there are opportunities, not all principal development is equal in its effectiveness related to developing the critical skills for being an effective school leader or for developing the self-efficacy necessary for such leadership (Darling-Hammond et al., 2007; Grissom et al., 2013). When experienced

principals do not get the professional development they need they can be ill equipped to meet the educational challenges they face (Meddaugh, 2014). Further, it can lead to turnover (Robin et al., 2015), which negatively impacts school culture (Meddaugh, 2014).

Principals need access to long term, job-embedded, cohort-based, research-based, and problem-based professional development that supports reflective practice (Sparks & Hirsch, 2000). Two types of principal development aligned to these characteristics that have received the most attention in the literature are principal academies and principal coaching. Consensus is emerging about the foundational domains of school leadership practices that should be the focus of principal professional development (Darling-Hammond et al., 2007; Leithwood & Jantzi, 2008; Sutcher et al., 2017; Wahlstrom et al., 2010). However, little research has been done on the impact of such professional development on principal self-efficacy aligned to these four foundational domains of effective school leadership: Setting Directions, Developing People, Redesigning the Organization, and Managing the Instructional Program.

Principal Leadership Tasks

In the largest research study to date on the link between educational leadership and student learning, Louis, Leithwood, Wahlstrom, and Anderson (2010) reviewed the work of leading educational leadership effectiveness theorists and researchers such as Hallinger and Heck (2002); Conger and Kanungo (1998); and Waters, Marzano, and McNulty (2003). From their review, they identified four critical broad domains of leadership practices, each with a subset of more specific behaviors or tasks related to positive student learning outcomes. These include Setting Directions, Developing People, Redesigning the Organization, and Managing the Instructional Program.

According to Hitt and Tucker (2016), there are three prominent educational leadership frameworks: the Ontario Leadership Framework (Leithwood, 2012), the Learning-Centered Leadership Framework (Murphy et al., 2006), and The Essential Supports Framework (Sebring et al., 2006). These frameworks were derived from reviews of literature or from longitudinal study designs. From the three frameworks, Hitt and Tucker (2016), developed a unifying framework including establishing and conveying a vision, facilitating high-quality learning experiences, building professional capacity, creating a supportive organization for learning, and connecting with external partners. Indeed, Hitt and Tucker's (2016) unifying framework largely mimics the domains identified by Louis, Leithwood, Wahlsrom, and Anderson (2010).

What is unique to the Louis, Leithwood, et al. (2010) study is its size and scope and its linking of effective leadership to student learning. It included a sample of nine states throughout the U.S., 43 districts within those nine states and 180 schools. In addition to student achievement data, the researchers surveyed and interviewed teachers, principals, other school staff, district personnel, community members, school board officials, and state-level leaders. Further, they conducted site visits to at least two districts in each of the nine states on two occasions separated by at least two years. The site visits included classroom observations.

Ultimately, Louis, Leithwood, et al. (2010) found that these four domains were a foundational requisite for effective educational leadership resulting in improved learning for students. These findings support earlier research (Leithwood & Jantzi, 2008; Waters, Marzano, et al., 2003) linking effective principal practice to improved student learning outcomes. For example, Waters, Marzano, et al.'s 2003 meta-analysis of sixty nine

studies found a .25 correlation between principal leadership responsibilities and student achievement (p.3).

Setting Directions

According to Leithwood and Jantzi (2008), establishing shared purpose and visioning are the critical components to Setting Directions. Additionally, fostering acceptance of group goals and developing high expectations for performance are part of effective direction setting. Goal-based theories of human motivation posit that "people are motivated by goals which they find personally compelling as well as challenging but achievable" (Leithwood & Jantzi, 2008, p. 507). Task direction and goal setting are two leadership behaviors that have been shown to be associated with the development of self-efficacy. These leadership behaviors are specifically associated with verbal persuasion and emotional arousal, identified by Bandura (1977) as two key antecedents to self-efficacy beliefs. According to Leithwood, Louis, Anderson, and Wahlstrom (2004), "leadership practices included in Setting Directions account for the largest proportion of a leader's impact" (p. 8).

Under the domain of Setting Directions, Reardon (2011) found that elementary principals' promotion of high standards for student learning was positively associated with student learning outcomes. Further, a study of middle school principals in Pennsylvania (O'Donnell & White, 2005) found a correlation between principals' promotion of a school climate for learning and student achievement in reading and math. From an analysis of seven different studies Robinson (2007) found an effect size of 0.35 on student outcomes for principal leadership of establishing goals and expectations (p.8).

Developing People

While Setting Directions contributes to workers' motivations, it does not specifically contribute to their capacity to move in those directions (Leithwood et al., 2004). Rather, specific tasks or practices within the domain of Developing People to build capacity include empowering others in decision-making and the development of school improvement plans (Leithwood et al., 2004). Capacity building is the result of direct experiences those in the organization have with its leaders and the organizational context (Leithwood & Jantzi, 2008). Additional tasks associated with Developing People include "intellectual stimulation, providing individualized support, and providing an appropriate model" (Leithwood & Jantzi, 2008, p. 508).

Regarding Developing People, a number of qualitative studies found successful school leaders encourage teachers and staff to engage in professional development (Borko et al., 2003; Crum & Sherman, 2008; Sanzo et al., 2011). Further, in a meta-analysis of six different studies, Robinson (2007) found that when principals not only promoted professional development, but also participated in teacher development, there was an effect size of 0.84 on student outcomes (p. 8).

Redesigning the Organization

Strengthening school culture, modifying the organizational structures of the school, and building collaborative processes are three key tasks within the domain of Redesigning the Organization (Wahlstrom et al., 2010). While Setting Directions and Developing People are essential leadership tasks, such work can be blunted if the organizational environment is not organized for the work to be done effectively. Louis, Dretzke, et al. (2010) conducted an empirical study to determine how leadership affects

student achievement. They found school cultures, structures, and processes where leadership is shared, trust exists, and staff work in professional communities are positively related to student achievement.

Managing the Instructional Program

According to Leithwood and Jantzi (2008), tasks or behaviors in the domain of Managing the Instructional Program include "planning and supervising instruction; providing instructional support; monitoring the school's progress (including student progress); and buffering staff from external demands unrelated to the school's priorities" (p. 508).

In relation to Managing the Instructional Program, Robinson's (2007) study found an effect size of 0.42 of principal involvement in planning, coordinating, and evaluating teaching and the curriculum on student achievement (p. 8). Additionally, leadership tasks associated with Managing the Instructional Program such as monitoring student progress, supervising and evaluating instruction, and providing feedback to teachers were positively related to student achievement (Chappelear & Price, 2012; Fancera & Bliss, 2011). Finally, Grissom and Loeb (2011), in their study of principal, assistant principal, teacher, and parent perceptions found managerial effectiveness to consistently be tied to school effectiveness.

Self-Efficacy

Self-Efficacy and its Impacts

Bandura's (1977) social cognitive theory posits that human functioning is the triadic influences of person, behavior, and environment working dynamically and reciprocally (McCormick, 2001). According to McCormick (2001), a large body of

empirical literature supports social cognitive theory. A key construct integrating the three parts of social cognitive theory is self-efficacy.

Self-efficacy, first theorized by Bandura in 1977, is a cognitive construct that is specific to a particular task and context (Tschannen-Moran & Gareis, 2005). According to Wood and Bandura, "self-efficacy refers to beliefs in one's capabilities to mobilize the motivation, cognitive resources, and courses of action needed to meet given situational demands" (1989, p. 408). Self-efficacy beliefs are the result of one's judgments about personal capabilities, the task to be accomplished, and the environment in which the task is to be completed (Gist & Mitchell, 1992).

Task-Specific Self-Efficacy vs. General Self-Efficacy and Self-Confidence.

A defining component of Bandura's (1977) self-efficacy concept is that it is task specific. Other authors have differentiated "task-specific" self-efficacy as described above from "general" self-efficacy. For example, Stajkovic and Luthans (2003) state, "general self-efficacy represents an 'enduring' personal trait that (supposedly) generalizes and successfully applies to a wide range of situations" (p. 133). While different constructs, some authors (Hannah et al., 2008) conceptualize both general and task-specific self-efficacy working simultaneously. Studies by Williams (1997) and Chemers (1993) empirically demonstrate the influence of general self-efficacy on task-specific self-efficacy.

Impacts of Self-Efficacy. Self-efficacy plays a significant role in personal agency and is a proximal determinant of self-regulation (Bandura, 1991). It contributes to one's choices regarding goals, effort, persistence, resilience to failure, and emotional regulation related to specific tasks (Bandura, 1991; Gist & Mitchell, 1992; Leithwood & Jantzi,

2008; Maurer, 2001). Other impacts of self-efficacy include the amount of stress one experiences as well as one's vulnerability to depression (Bandura, 1991). Bandura (1982) claimed self-efficacy as a key causal variable in performance and Locke, Frederick, Lee, and Bobko's (1984) study provided strong support to the claim. Since that time thousands of studies have been conducted on self-efficacy and its impact on performance. Bandura's (1997) review of many of those studies demonstrated self-efficacy impacts "academic achievement, athletic performance, career choice, drug and alcohol abstinence, entrepreneurship, decision-making, organizational functioning, stress tolerance, teaching performance, and voter participation" (McCormick, Tanguma, & Lopez-Forment, 2002, p. 35). Further, Stajkovic and Luthans' (1998) meta-analysis found a significant correlation between self-efficacy and performance in the work setting.

Leader Self-Efficacy and Its Impacts

Some authors have conceptualized leader self-efficacy (LSE) broadly in order to be able to apply the construct across leaders with varying tasks. For example, Ladegard and Gjerde (2014) define LSE as, "the leaders' awareness of, and confidence in, their abilities to mobilize the motivation, cognitive resources, and courses of action needed to master the tasks involved in their leader role effectively" (p. 635). Another task agnostic definition of LSE is, "one's self-perceived capability to perform the cognitive and behavioral functions necessary to regulate group processes in relation to goal achievement" (McCormick, 2001, p. 30).

Other authors have sought to define categories of leader tasks that span different types of leadership roles. For example, Paglis and Green (2002) define leader self-efficacy as, "a person's judgment that he or she can successfully exert leadership by

setting a direction for the work group, building relationships with followers in order to gain their commitment to change goals, and working with them to overcome obstacles to change" (p. 217). They also identify four categories of antecedents to LSE, including individual antecedents (general self-efficacy, locus of control, and past leadership success), subordinate antecedents (their beliefs about change and their performance capabilities), superior antecedents (their modeling and coaching), and organizational antecedents (support for change, resources, and job autonomy).

Impacts of Leader Self-Efficacy. Hannah et al., (2008) reviewed twenty studies on LSE and its subdomains. Among the research results they summarized were findings that LSE manifests itself as positive leadership behaviors (Finn et al., 2007), is a partial mediator of the relationship between employee engagement and managerial effectiveness (Luthans & Peterson, 2002), and was associated with higher commitment to the organization (Paglis & Green, 2002a). Further, LSE was positively related to most criteria for performance (I. T. Robertson & Sadri, 1993). Chemers et al. (2000) found powerful effects of LSE on the leadership impressions of others, as well as objective performance measures. They concluded that LSE, "clearly contributes to leadership effectiveness" (p. 275). The authors went on to theorize that results of LSE include leader credibility, effective problem analysis, as well as persistence. Further, they believe LSE may affect followers in a similar way.

Principal Self-Efficacy and Its Impacts

According to Tschannen-Moran and Gareis (2005), as well as Federici and Skaalvik (2011), principal self-efficacy (PSE) as a construct has received little attention in the literature. A few authors (Brama, 2004 in Federici & Slkaalvik, 2011; Federici &

Skaalvik, 2011; Tschannen-Moran & Gareis, 2004) have proposed principal self-efficacy scales to begin to understand the construct. However, none have directly aligned to the four domains described by Louis, Leithwood, et al. (2010).

PSE situates LSE in the school context. Tschannen-Moran and Gareis (2005) define PSE as a principal's judgment of their "capabilities to structure a particular course of action in order to produce desired outcomes in the school . . ." (p. 3). Federici and Skaalvik (2011) define PSE as "principals' judgments of their capabilities to plan, organize, and execute tasks and deal with their relationship to people and institutions in their environment" (pp. 578-579). Similar to the approach of some LSE researchers, these definitions are task agnostic.

Impacts of Principal Self-Efficacy. PSE is correlated to intrapersonal outcomes such as job satisfaction (Federici, 2013) and work engagement (Federici & Skaalvik, 2011). Further, efficacious principals tend to be more persistent in pursuing goals and more adaptable to change (Osterman & Sullivan, 1996 as cited in Federici & Skaalvik, 2011).

PSE has been found to be positively correlated to organizational outcomes such as successful school restructuring (Dimmock & Hattie, 1996), the quality of teaching and learning (Smith et al., 2006), and the quality of teacher supervision (Licklider & Niska, 1993). Significant positive correlations were found between PSE and teachers' perceptions of implementation of standards, curriculum, and assessment in middle school reforms (Lucas, 2003). Finally, Leithwood and Jantzi (2008) found a weak, but statistically significant impact of PSE on student standardized test proficiency levels.

Self-Efficacy Sources

How one develops self-efficacy beliefs has received considerable attention in the literature. Bandura (1977) theorized four sources of self-efficacy beliefs: mastery experiences, vicarious experiences, verbal persuasion, and emotional arousal (Appendix A).

Further, efficacy expectations are determined not by the sources themselves, but rather by one's cognitive appraisal of those sources (Bandura, 2009). Indeed, individuals choose which aspects of a performance to focus on as well as to what to attribute successes or failures (Bandura, 1991). Because self-efficacy is a construct within social cognitive theory, Gist and Mitchell (1992) argued that self-efficacy beliefs are dynamic and that they are influenced by a combination of factors which include Bandura's four sources as well as such cognitive judgments as an analysis of task requirements (behavior), an assessment of personal and situational resources (person and environment), and attributional analysis of past performance (person). Bandura (2009) later described a set of factors that influence self-efficacy judgments within each of the four sources (p. 186).

At an environmental level, Paglis and Green (2002) theorized that antecedents such as organization culture, modeling and coaching by one's superiors, and the skills and attitudes of one's subordinates impacted leader self-efficacy judgments. Among the individual or person level antecedents to LSE the authors noted are past successful leadership roles, internal locus of control, and general self-esteem.

Specific to PSE, Tschannen-Moran and Gareis (2005) list superintendent, central office, teachers, staff, parents, and students among environmental antecedents. Among

these antecedents, teacher support was most highly correlated to PSE at .36 followed by parent support at .31. Both superintendent and central office had the lowest correlation to PSE among the factors examined at .24. Similarly, another study of PSE across 96 schools (Leithwood & Jantzi, 2008) found positive correlations between PSE and environmental antecedents such as district leadership (.32), district conditions (.44), emphasis on teamwork (.45), and job-embedded professional development (.35). Finally, in their qualitative study of twelve new urban principals, Osterman and Sullivan (1996) found that role models, district expectations, and personal and organizational supports were all environment level sources of PSE. None of the studies described above examined the correlation of antecedents such as principal academies or principal coaching to PSE.

Principal Leadership Development

Principal leadership development strategies described in the literature include principal academies (Browne-Ferrigno, 2007; Cardno & Youngs, 2013; Duke, 2014; Robin et al., 2015; Versland, 2016), coaching (Coffin & Leithwood, 2000; Leithwood & Jantzi, 2008;), mentoring (Grissom & Harrington, 2010), networks (Fahey, 2011; Grissom & Harrington, 2010), and action research (Piggot-Irvine, 2011; Tschannen-Moran & Gareis, 2005).

Two approaches to improving principal leadership effectiveness that are more prominent in the literature are involvement in principal leadership academies and experiences with a coach. In response to the poor state of principal professional development, the National Staff Development Council advocated for an approach that is "long-term, planned, and job-embedded; focuses on student achievement; supports

reflective practice; and provides opportunities to work, discuss, and solve problems with peers" (Sparks & Hirsch, 2000, p. 9). Ongoing, cohort principal leadership academies and principal coaching often use several of the design elements described above, which also lend themselves to the development of PSE through strategies such as mastery experiences, vicarious experiences, and persuasion.

Principal Leadership Academies

Characteristics. In their 2005 review of research Davis, Darling-Hammond, LaPointe, and Meyerson identified design characteristics of effective principal pre-service and in-service programs. These characteristics included content that was research-based, curricular coherence, field-based internships, problem-based learning, cohort groups, mentors or coaches, and collaboration between universities and school districts. Further, they identified Setting Directions, Developing People, and Redesigning the Organization, among other practices, as essential elements to good leadership that should be the focus of the content in principal development programs.

The Learning Policy Institute's report (Sutcher et al., 2017) on supporting principal learning identifies four key building blocks of effective principal leadership development programs. Key building block number one is organizational partnerships that support learning, such as between school districts and principal development organizations. Second, principal development programs should be structured to support learning. Such features include participants working in cohort groups or through professional networks. Next, the authors identify effective principal development programs as those that provide meaningful and authentic learning opportunities such as through problem-based learning, internships and coaching. The final key building block,

according the report, is learning opportunities focused on what matters. Examples include a strong focus on improving school wide instruction, attention to creating collegial organizations, and using data for change.

Finally, *Principal Professional Development: New Opportunities for Renewed State Focus* (Rowland, 2017) outlines five characteristics of effective professional development for school leaders: focuses on continuous opportunities for practice, offers principals high quality feedback on their actions and practice on a regular basis, uses research-based content, occurs within a community or network of learners, and is tailored to teach what each participant needs to know at a specific point in their career.

Academy Models and Impacts. Principal leadership programs often possess many of the characteristics of effective programs described above, but not all. The following are some examples of principal leadership development programs for experienced principals including their design and, when available, the impacts of the programs on principal self-efficacy, principal effectiveness, and student learning. The three principal development programs described below are national in scope, focus on experienced principals and possess most of the characteristics of effective principal professional development programs.

National Institute of School Leadership. The National Institute of School Leadership (NISL) developed its executive development program through five years of research and piloting (Nunnery, Ross, et al., 2011). They drew on research and literature from education, business, and the military. The program uses a cohort design and includes twelve two-day face to face sessions led by trained and expert principal facilitators across approximately eighteen months (Corcoran, 2016). In addition, there is

an online component as well as pre-readings. Face to face sessions include self-assessments, simulations, case studies, mini-lectures, group discussions, and online activities (Nunnery, Ross, et al., 2011). Finally, the executive development program design also includes an action-learning project. These projects are decided upon by individual participants, with guidance from the facilitators, to address a high priority school improvement issue in each leader's school (Corcoran, 2016). NISL program design elements reflect the characteristics described above with the exception of internships and mentoring or coaching, and perhaps individualization, although the ALP may accomplish that characteristic.

In a matched comparison-group ex post facto design, Nunnery, Yen, and Ross (2011) found that NISL program participation in Pennsylvania was related to statistically significant improvement in student learning over a four year period in both mathematics and reading. Using the same design in an examination of Massachusetts NISL participants yielded similar results in mathematics, but not for English Language Arts (ELA) (Nunnery et al., 2010). Analysis of the second round of Massachusetts NISL participants found that "NISL-led schools achieved statistically significantly higher student achievement in both mathematics and ELA versus the comparison group" (Nunnery, Ross, et al., 2011, p. 3). The effect size for math was 0.14 and the effect size in ELA was 0.11. No studies were found that report on participants perceptions of the impact of NISL on their self-efficacy beliefs aligned to the four domains of leadership.

McREL Balanced Leadership Professional Development Program. McREL's Balanced Leadership Professional Development Program (BLPDP) uses a curriculum focused on twenty one leadership responsibilities identified through research associated

with improved student achievement (Robin et al., 2015). There are ten, two-day, cohort-based sessions led by trained facilitators who have extensive school level leadership experience. Instructional design relies heavily on case study analysis (Robin et al., 2015). Design elements reflect the characteristics described above with the exception of internships and mentoring or coaching, and perhaps individualization.

Using a stratified sample of schools in northern Michigan, Robin et al. (2015) randomly assigned half of the 126 school leaders to receive BLPDP and the other half to a control group. The study relied on survey data, administrative data, and student achievement data. The authors found principals in the treatment group reported statistically significant higher feelings of efficacy than those in the control group with an effect size of 0.55. In addition, treatment group principals believed themselves to be more effective leaders than the control group and reported higher levels of collaboration among staff, a better school climate, and stronger differentiated instruction. Conversely, teachers working for control group and treatment group principals showed no difference in their rating of principal effectiveness. BLPDP also had a positive comparative impact on principal and teacher turnover. However, there was no statistically meaningful impact of the BLPDP on student achievement in either mathematics or reading. The examination of self-efficacy described does not align to the four domains of leadership.

Experienced Principals Development Programme. New Zealand's Experienced Principals Development Programme (EPDP) was implemented by ten different providers across the country (Cardno & Youngs, 2013). While overall program vision and aims were the same, providers were given latitude to be responsive to the needs of the principals in their programs. Several design elements were consistent throughout the ten

programs: key use of Ministry of Education policy and research documents, cohort-based, ongoing face to face workshops, leadership assessments, professional circles, school visits, portfolio development, coaching, and engagement in a school improvement inquiry project. EPDP design elements reflect the characteristics described above, perhaps with the exception of partnerships as information about the providers of the EPDP were not provided.

In their mixed-methods study Cardno and Youngs (2013) found that coaches played a key role in linking the readings and face to face teaching to principals' school contexts and that participants perceived coaches to be among the top three sources of their development among the various design elements of the EPDP. Another finding demonstrated that content learning led to greater confidence among participants resulting in their use of the strategies and information with their school staff. Significant impacts were also found on the link between engaging in the school improvement inquiry project and improving teaching and learning, impacting school culture, and links to school goals. Overall, participants reported being more reflective, gaining new knowledge related to principal leadership for school improvement, and applying that new knowledge to their school contexts. The study did not align to the four domains of leadership, nor did it examine the perceptions of school staff or supervisors regarding principal leadership.

Principal Leadership Coaching

Principal coaching has not received significant attention in the research literature. However, principals operate as high-level executives within their organizations and the executive coaching literature, which focuses primarily on a business context, can be used to better understand coaching in an educational context.

Executive Coaching. One of the first literature reviews on the topic was conducted in 1996 by Kilburg. He noted the dearth of empirical studies and offered a unifying definition of coaching:

> Executive coaching is defined as a helping relationship formed between a client who has managerial authority and responsibility in an organization and a consultant who uses a wide variety of behavioral techniques and methods to help the client achieve a mutually identified set of goals to improve his or her professional performance and personal satisfaction and, consequently, to improve the effectiveness of the client's organization within a formally defined coaching agreement. (Kilburg, 1996, p.142)

Other definitions emerged over the years, however, they most largely mimic Kilburg's definition. For example, the International Coaching Federation's definition extends Kilburg's definition by further defining the client, consultant, and the sectors in which coaching takes place (Mura, 2003), but otherwise leaves the basic definition unchanged (see also Joo, 2005).

Kilburg (1996) also proposed a five-component model of executive coaching which included establishing a coaching agreement, building a coaching relationship, creating and maintaining expectations of success, providing experiences of mastery and cognitive control, and evaluating. Five years later, after researchers heeded Kilburg's call for empirical studies of executive coaching, Kampa-Kokesch and Anderson (2001) conducted a comprehensive review of the literature. Rather than components of coaching, the review conceptualized a six-stage process of coaching including relationship building, assessment, feedback, planning, implementation, and evaluation and follow-up.

Executive Coaching Approaches and Characteristics. There are a wide variety of approaches to coaching being practiced (Ducharme, 2004; Ives, 2008). Ives (2008) identifies three dimensions around which common approaches differ. First is the dimension of directedness; whether the coach is directive or non-directive. Second, approaches differ in their focus on either personal development or goal orientation. Finally, Ives (2008) identifies differences in coaching approaches between therapeutic or performance driven. According to Ives, each approach incorporates all three dimensions. For example, the cognitive coaching approach draws on non-directive, personal development and therapeutic dimensions. Despite the differences, Ives (2008) notes common features of all approaches, including a systematic process designed to facilitate development of coachees, the use of questioning and listening, a collaborative and egalitarian relationship, and a focus on clear and achievable goals. Additional commonalities include an individualized approach built upon the client's resourcefulness, knowledge, and experiences, as well as the aim to have coachees assume charge of their own lives.

Different researchers and theorists have focused on different aspects of these commonalities. The coaching relationship, goal setting and action planning, and effective communication have received considerable attention in the literature. Indeed, in their comprehensive review of executive coaching research Kampa-Kokesch and Anderson (2001) found the coaching relationship to be one of the most important tools in affecting change. A decade later a review of research by Passmore and Fillery-Travis (2011) found the quality of the coaching relationship to be the most consistently reported factor contributing to the success of a coaching engagement. Further, de Haan, Duckworth,

Birch, and Jones (2013) found a .6 correlation between the coaching relationship and coaching outcomes. Relationship building is characterized by creating a safe place through trust, confidentiality, and support for change. Confidentiality in particular has been reported by coachees as an important coach characteristic (Lochmiller, 2014; Passmore, 2010; Wise & Hammack, 2011). Also facilitating relationship building is the existence of a strength building focus including positive psychology and a solution orientation.

In addition, goal setting and action planning are critical characteristics of executive coaching (Grant et al., 2009; Ladegard & Gjerde, 2014; Moen & Federici, 2012b). The Institute of Executive Coaching and Leadership (IECL) (Armstrong et al., 2007) emphasizes the use of a learning framework to facilitate learning which includes adult learning principles, brainstorming, action planning, and goals that stretch and challenge.

Finally, effective communication is a key characteristic of effective coaching experiences. It is characterized in the literature by the use of powerful questioning, which includes reflection and challenge, and listening (Moen & Federici, 2012b; Passmore, 2010; Passmore & Fillery-travis, 2011). Indeed, providing challenge, often through data and feedback, has been identified by numerous authors as a key coaching characteristic (Joo, 2005; Kampa-Kokesch & Anderson, 2001; Passmore, 2010).

Executive Coaching Impacts. To date, most studies on the impact of executive coaching have focused on the intrapersonal impacts of executive coaching such as self-efficacy, resilience, and well-being. Other researchers have examined performance through the lens of productivity or perceptions of supervisors and direct reports.

Regarding intrapersonal impacts, an IECL study (Armstrong et al., 2007) found the primary impact of executive coaching to be on self-efficacy beliefs. The study, which relied on survey and qualitative data, also found that increased self-efficacy had positive impacts on leaders' relationships with subordinates and superiors. Several other authors found similar impacts of executive coaching on self-efficacy. Moen and Skaalvik (2009) found significant growth in self-efficacy among chief executives at a Norwegian Fortune 500 company who received external executive coaching. There was no increase for the control group in this pre-test, post-test study. In their study of junior and mid-level managers at an international manufacturing firm, Baron and Morin (2010) found executive coaching, along with learning seminars and action learning groups, improved self-efficacy related to managers' ability to facilitate the development of their subordinates. Ladegard and Gjerde (2014) also found increases in self-efficacy related to executive coaching. Further, they found additional intrapersonal as well as interpersonal impacts such as an increase in self-reflectiveness as well as leader trust in subordinates. Finally, related to intrapersonal impacts, Grant et al. (2009) found that the use of 360-degree feedback with a cognitive-behavioral, solution-focused executive coaching approach had a positive impact on participants' resilience and well-being. Qualitative results of the same study indicated increased self-confidence and personal insight, as well as an improved ability to deal with organizational change.

Improved goal setting and goal achievement was another theme in the executive coaching literature. Moen and Skaalvik (2009) found some support for their hypothesis that executive coaching would improve coachee's goal-setting. Further studies (Moen & Federici, 2012b) found significant increases in the domain of goal-setting strategy among

the treatment group of executives compared to a control group. In a meta-analysis of the executive coaching literature Joo (2005) noted that executives set more specific goals as a result of their coaching experience. Finally, a study of executives and senior managers from the nursing sector of a major Australian public health service agency who took part in a leadership development program as part of their professional development found higher rates of goal attainment among those in the treatment group compared to the control (Grant et al., 2009).

Principal Coaching Approaches and Characteristics. Three types of approaches have been widely used in principal leadership coaching (Lochmiller, 2014). First, blended coaching (Bloom et al., 2005), which incorporates five different approaches (instructional, facilitative, collaborative, consultative, and transformational). Second is cognitive coaching (Costa & Garmston, 2002; Ellison & Hayes, 2006) which uses a non-directive, solution-focused, facilitative approach. The third is a coaching model rooted in participatory action research (Robertson, 2016). Because research into principal leadership coaching is still nascent, few studies have explicitly named the approach to coaching studied. Little research has examined these coaching approaches and their impact, especially related to experienced principals (Huff et al., 2013).

Principal coaching has followed in the footsteps of executive coaching and draws on many of the same theories and research (Wise & Hammack, 2011). As such, characteristics of principal leadership coaching in the literature are similar to those for executive coaching. For example, a common characteristic of principal leadership coaching is a strong relationship, in part developed through careful selection of principal coaches and matching them to coachees (Bloom, 2003; Huff et al., 2013; Lindle, 2016;

Lochmiller, 2014). Confidentiality and the development of trust with the principal (Bloom, 2003; James-Ward & Potter, 2011; Wise & Hammack, 2011) also play a critical role in relationship building. In a departure from the executive coaching literature, two authors extended the necessity of trust building to include the school leadership team and even the whole faculty (Estrella-Henderson & Jessop, 2011; Meddaugh, 2014). Another common characteristic of principal leadership coaching described in the literature is the development and monitoring of goals and an action plan (Bloom, 2003; Estrella-Henderson & Jessop, 2011; Huff et al., 2013; Lochmiller, 2014). Finally, effective communication is also emphasized in the principal leadership coaching literature. Specifically, questioning and listening techniques (Lindle & Moore, 2016a), often focused on data such as 360-degree type feedback (Bloom, 2003; Huff et al., 2013) popularized by Posner and Kouzes (1993).

While many of the principal coaching studies in the literature describe the coach as organizational outsider (Bloom, 2003; James-Ward & Potter, 2011; Lindle & Moore, 2016b; Lochmiller, 2014) some flexibility seems to exist as some studies report on principal coaching by district level administrators whose primary duty is coaching (Lindle & Moore, 2016b) as well as principal supervisors. Further, the principal leadership coaching literature emphasizes the importance of training and accountability for the coach (Bloom, 2003; Estrella-Henderson & Jessop, 2011; Huff et al., 2013; Lindle, 2016; Lochmiller, 2014). Regarding the content of principal leadership coaching there is a focus on school improvement and student achievement (Bloom, 2003; Lindle, 2016; Meddaugh, 2014; Wise & Hammack, 2011). Regardless of the specific

characteristics, authors have noted the importance of principal leadership coaching in ensuring successful leadership of 21st century schools (Bloom et al., 2005).

Experienced Principal Leadership Coaching Impacts. Studies on the impact of principal leadership coaching have focused on perceptions, especially of the coachees, but in some cases have included teacher perceptions. Only one study was located that examined the impact of coaching on student achievement. In a mixed methods study of 16 urban principals who received coaching they reported being more reflective practitioners, more courageous leaders, gaining new ideas to improve student learning, and improving their practice of evaluating and providing feedback to teachers (James-Ward & Potter, 2011). Using case study methodology, another study of urban principals (Farver & Holt, 2014) found principal coaching facilitated professional and personal growth; increased confidence in thinking, planning, and problem solving; and resulted in better communication such as committed listening, paraphrasing, and feedback. Whereas the previously mentioned studies focused on the urban context of principal leadership, Meddaugh (2014) conducted a study of principal coaching in the context of state identified underperforming schools. Results from the study indicate that coaches influenced principals' thinking to focus on the instructional core and program coherence. Further, support from coaching resulted in principals creating professional communities of collaboration characterized by shared leadership and decision-making.

Two studies looked at coaching approaches that included 360-degree feedback. Huff et al. (2013) examined the effects of dosage and quality of coaching on the principal coaching experience. The study included 24 principals who received 360-degree feedback three times during the year and ongoing coaching throughout the year focused

on analyzing and responding to the feedback. Through an analysis of the transcripts of the coaching sessions, they found coaches who delivered higher quality coaching "used detailed discussions of the [360-degree] feedback to lead principals to critical reflections on their work that challenged their perceptions of conditions in their schools" (Huff et al., 2013, p. 519). Supporting findings of executive coaching in the business context, Bickman et al. (2012) found 360-degree feedback plus coaching significantly enhanced teachers' perceptions of leadership effectiveness of their principals. The studies did not align the 360-degree feedback with the four domains of educational leadership.

Two studies examined the relationship between coaching and coachee perceptions of their use of research-based educational leadership practices. In the first (Wise & Hammack, 2011), correlations were made between coachees' perceptions of the use of coaching best practices by their coach and coachees' perceptions of the impact of coaching on their own use of principal leadership best practices. Taken as a whole, analysis indicates a statistically significant correlation of .68 between coaching best practices and principal leadership best practices. The second study (Warren & Kelsen, 2013) relied on survey data, interviews, and student achievement data to examine the impact of coaching on principals' perceptions of their change in nine of the twenty one responsibilities on the Balanced Leadership Framework (Marzano et al., 2005). The study also examined changes in school performance among the coachees being studied. Analysis revealed significant growth in the nine leadership responsibilities among participants. Further, principals strongly attributed their growth to the coaching they received. Using an academic performance index as the measure of student achievement,

most participants in the coaching program far exceeded the growth targets set by their county school districts and outperformed similar districts.

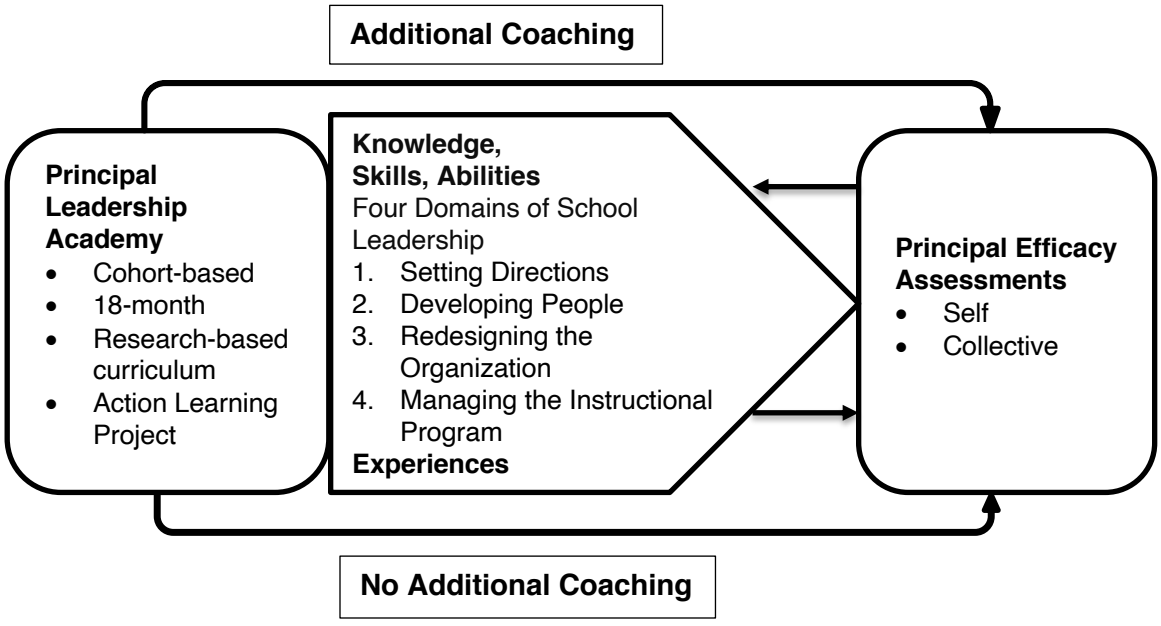
None of the studies addressed the impact of principal leadership coaching on PSE generally, nor PSE aligned to the four educational leadership domains specifically. Further, in the studies that examined coaching within the context of a principal development program none examined the differences between participants who received coaching and those who did not.

Conceptual Framework

These bodies of literature form the basis of the conceptual framework on which the specific research questions of this study are based. The study examines the impact of principal leadership development, specifically principal leadership academies and coaching, on principals' assessment of their self-efficacy related to the four domains of school leadership, as well as collective principal efficacy (Figure 2.1).

Figure 2.1

Conceptual Framework



Summary

This literature review focused on principal leadership domains, principal self-efficacy (PSE), as well as principal leadership development academies and principal leadership coaching. One gap in the literature identified is the lack of evidence regarding the impact of principal leadership academies on PSE, especially PSE aligned to the four leadership domains identified by Louis, Leithwood, et al. (2010). Another gap in the research literature regarding principal development was the impact of principal leadership coaching on participants in principal leadership academies.

Based on these gaps, three research questions, which can potentially contribute to the field, are suggested:

1. What is the association between principal participation in the Minnesota Principals Academy (MPA) and their growth in self-efficacy as a principal in the four domains of school leadership?
    a. Sub 1: Using four domains of principal leadership (Setting Directions, Developing People, Redesigning the Organization, Managing the Instructional Program), how did participants' sense of their self-efficacy as a principal change from their Pre- to Post- experience in the MPA? To what do principal participants attribute those changes?
    b. Sub 2: In which leadership practice domains do the principal academy participants feel greater growth in self-efficacy efficacy as a principal in Pre--Post experience in MPA? Why?

    c. Sub 3: What roles do contextual factors (school, district, and personal) play in principal academy participants' principal self-efficacy assessments?

2. What are the differences in principal self-efficacy between MPA participants who also received principal coaching versus those who did not?
3. What are the differences in collective efficacy for participants who work in districts where the majority of the principals from their school district have participated in MPA and those who do not?
    a. Sub 1: What is the association between principal self-efficacy and principal collective efficacy?
    b. Sub 2: What is the association between district size and principal
    c. collective efficacy?

Researchers have been examining PSE through the development and testing of self-efficacy scales (Federici & Skaalvik, 2011; Tschannen-Moran & Gareis, 2004). Aligning PSE to Louis, Leithwood, et al.'s (2010) four leadership domains further ties PSE to the tasks and behaviors that are prerequisites to improved student learning. Further, it follows Bandura's (1977) conceptualization of self-efficacy as task-specific. In addition, question two extends to education, specifically principals, the comparative studies of professional development only interventions with professional development plus coaching interventions in the context of business, industry, and healthcare (Grant et al., 2009; Olivero et al., 1997).

These questions follow lines of inquiry established in the social science literature and emanate from a post positivist paradigm. Ontologically speaking, these questions rest

in the belief that there is “real” reality, but only imperfectly and probabilistically known (Lincoln & Guba, 2000). Further, the purpose of these questions is to gain a better understanding of the world (Sipe & Constable, 1996), or “truth” seeking (Donmoyer, 2001), which aligns to the post positivist paradigm. Post positivist methodology is characterized by modified experimental design and potential inclusion of qualitative methods (Lincoln & Guba, 2000) and these questions lend themselves to such methodology.

Chapter 3

Research Methodology

Overview

A mixed methods design, using surveys and interviews, was employed to derive broad perspectives on the impact of Minnesota Principals Academy on leadership self-efficacy. It addressed the following research questions:

1. What is the association between principal participation in the Minnesota Principals Academy (MPA) and their growth in self-efficacy as a principal in the four domains of school leadership?
    a. Sub 1: Using four domains of principal leadership (Setting Directions, Developing People, Redesigning the Organization, Managing the Instructional Program), how did participants' sense of their self-efficacy as a principal change from their Pre- to Post- experience in the MPA? To what do principal participants attribute those changes?
    b. Sub 2: In which leadership practice domains do the principal academy participants feel greater growth in self-efficacy efficacy as a principal in Pre--Post experience in MPA? Why?
    c. Sub 3: What roles do contextual factors (school, district, and personal) play in principal academy participants' principal self-efficacy assessments?
2. What are the differences in principal self-efficacy between MPA participants who also received principal coaching versus those who did not?

3. What are the differences in collective efficacy for participants who work in districts where the majority of the principals from their school district have participated in MPA and those who do not?
    a. Sub 1: What is the association between principal self-efficacy and principal collective efficacy?
    b. Sub 2: What is the association between district size and principal collective efficacy?

These questions emanate from the intersection of three main bodies of literature: principal leadership, principal self-efficacy, and principal leadership development. This study sought to understand how leadership development practices impact principal self-efficacy in four principal leadership domains. Cohort-based principal leadership academies and leadership coaching are the two specific leadership development practices that were examined in this study. Principal self-efficacy is examined in the following leadership domains:

1. Setting Directions
2. Developing People
3. Redesigning the Organization
4. Managing the Instructional Program

See figure 2.1 for a visual model of the three components involved in this study.

Research context. Participants in this study have all been through Minnesota Principals Academy. Since established by the Minnesota Legislature in 2007, eleven cohorts have participated in the eighteen-month long program. Cohorts typically meet for two days every six to eight weeks. According to MPA records, approximately 300 people

have participated over MPA's existence. The author participated in MPA between 2007 and 2008 and has been a facilitator since 2014. MPA has been conducted in various geographic regions across the state, but most frequently in the Twin Cities. Curriculum for the program is substantially from the National Institute of School Leadership, but also includes content developed by University of Minnesota faculty and staff. Content is delivered through readings, assessments, text-based discussions, case studies, videos, and simulations. In addition to this research-based content, each participant also conducts and reports on an action learning project. The primary intended audience of, and vast majority of participants in, MPA is school principals with instructional leadership responsibilities. Others in various positions of leadership at the school and district level, as well as leaders from outside organizations have participated over the years. Some examples include superintendents, curriculum directors, assistant principals, and Minnesota Department of Education staff.

Study design. The study is retrospective in that it deals with past events. Both quantitative and qualitative data were used in this mixed-methods design. The approach used in this study is described by Teddlie and Tashakkori as a quantitative plus qualitative, multi-strand parallel mixed design (2009). This approach uses quantitative methods as the primary data source and qualitative methods to produce secondary data. Multi-strand applies to this study in that analysis from both the survey and interviews are combined to form a meta-analysis that informs study findings. Parallel denotes that the quantitative and qualitative data are being collected simultaneously, or in close proximity of time to one another. Quantitative methods and qualitative methods were both incorporated into the survey instrument. Quantitative data was gathered on principal self-

efficacy, level of coaching, and various school and principal demographic data. This study employed a single survey to ask for principal perceptions from two different points in time: immediately prior to beginning Minnesota Principals Academy and at the time they completed the survey. Open-ended questions on the survey provided qualitative data related to principal leadership development. Creswell (2003) refers to the use of multiple methods in a single instrument as concurrent. He further defines concurrent as seeking convergence of the two forms of data in the analysis and interpretation sections of a study, a strategy employed in the present study. However, additional qualitative data was collected through interviews after the administration and initial analysis of the survey data.

Interviews can provide more context to survey responses. According to Leonard (2003), interviews ". . . may be used as a follow up to a questionnaire. This allows the researcher to explore more in depth interesting issues that may have emerged from the standard questionnaire" (p.167). Such an interview method is utilized for its ability to respond to the data provided by the subject and develop a deeper understanding of the perception and experience of an individual within the research context through a richness and spontaneity not afforded in a questionnaire (Leonard, 2003). Further, by using the survey results to inform the interview protocol, the researcher can ask questions that allow for a more in depth understanding of the survey analysis. Interviews provide another advantage, an opportunity to learn what is not directly observable (Creswell, 2003). At the same time a limitation to interviews is that they rely on information filtered through individuals' perceptions rather than direct observation of phenomena (Creswell, 2003). According to Gall et al. (2015), another limitation of interviews is the possibility

of subjectivity and bias. Thus having complementary quantitative data serves as a way to triangulate data and to "increase the validity of the study and facilitate inferences and conclusions that can be stated about the findings" (Ponce & Pagán-Maldonado, 2015, p. 126).

Each data collection method in a mixed methods design strengthens the other and can also offset its weaknesses (Creswell, 2015), and according to Ponce and Pagán-Maldonado (2015), produces more reliable research. Such designs can offer a more complete understanding of the problem being studied (Creswell, 2015). Another strength of a mixed methods design is its ability to explore complex educational issues more deeply and completely (Ponce & Pagán-Maldonado, 2015). Such mixed methods generate distinct yet complimentary data sets which "allows the researcher greater certainty in inferences, conclusions or statements which formulate its findings" (Ponce & Pagán-Maldonado, 2015, p. 114).

Data Collection

Principal survey design. Five practicing principals piloted the survey instrument and provided feedback on the clarity of the items, vocabulary, and the extent to which items appropriately captured the essence of each domain of school leadership. Each principal returned the completed hard-copy survey with written comments and the amount of time it took to complete the survey. An additional response option was added to one question in the contextual factors section. A few small changes in wording to improve clarity were made based on the feedback as well. Pilot participants took between fourteen and forty minutes to complete the survey, with an average of just over twenty minutes.

The survey has four sections (appendix B). Section one asks participants to rate their confidence in their ability to perform specific tasks related to four domains of school leadership. There are six items in each domain. These items were designed to determine principal self-efficacy in each of the four domains of school leadership as well as the growth of self-efficacy. Domain-specific survey items were developed using a rational-empirical approach (Burisch, 1984; Worthington & Whittaker, 2006). The rational component draws on the research pertaining to the domains of school leadership and items from existing surveys of principal self-efficacy (see Federici & Skaalvik, 2011; Fisher, 2014; Leithwood & Jantzi, 2008; R. W. Smith & Guarino, 2006; Tschannen-Moran & Gareis, 2004) as well as expert practitioners in the field. As an example, one question regarding Setting Directions (Domain 1), asked participants to rate their confidence to, "*nurture a shared vision for your school for high performance of all students.*" All multiple-choice questions in this section used the same response options (Table 3.1). A domain score was calculated for each of the four domains by taking the mean point value from the 6 questions in the domain. There were also three open ended questions in this section.

Table 3.1

Survey Self-Efficacy Scale

Descriptor	**Point Value**
No confidence	1
Little confidence	2
Some confidence	3
Moderate confidence	4
Significant confidence	5
Complete confidence	6

Section two asked participants whether other principals in their district had participated in MPA. If yes, four survey items addressed the collective principal efficacy of the district principals who were MPA participants. These items were taken directly from the instrument developed by Leithwood & Jantzi (2008) to measure principal collective efficacy. Questions asked about improving student learning, continuous improvement, problem solving, and beliefs about teacher capacity using the response options in Table 3.2.

Table 3.2

Collective Efficacy Scale

Descriptor	**Point Value**
Strongly disagree	1
Moderately disagree	2
Slightly disagree	3
Slightly agree	4
Moderately agree	5
Strongly agree	6

The third section included several questions related to principal demographic information, characteristics of the school the participant leads, and characteristics of the district in which the participant is a principal. The purpose of these items was to help determine if particular factors were correlated to growth in principal self-efficacy or collective principal efficacy. Several of the factors were selected based on previous research on principal self-efficacy (Leithwood & Jantzi, 2008).

The final section of the survey was about coaching and support received around the time the participant was in MPA. Participants were asked, "*What type of professional support did you receive regarding your school leadership around the time you*

participated in MPA?" They were able to select one or more options as their reply. For example, one option was,

> I had the support of a coach. The principal coach was a formal role within the district, or the coach was outside consultant who was hired specifically to coach one or more principal(s). Coaching involved setting goals, making changes in practice, monitoring, and reflection. I met with the coach approximately monthly (or more).

For participants who reported receiving support, an open-ended question was posed about the perceived impact of the support.

Principal survey recruitment and administration. The sample for this study was drawn from past MPA participants who were practicing principals at the time the survey was administered (N = 144). A list of all past Minnesota Principals Academy (MPA) participants was obtained from the Director of MPA. Thorough Internet research was done to determine which past principals were currently practicing principals, including Internet searches, emails, and phone calls. The population received an introductory email from the Director of MPA encouraging them to participate. Using Qualtrics, the researcher followed up with an email inviting them to participate in the survey. Potential participants were provided information about the broad goal of the research, the approximate time the survey would take to complete, and the voluntary nature of their participation. A link to the survey was provided. Consent was given electronically prior to beginning the first survey question. Participants completed the battery of items twice: First, based on their confidence prior to participating in MPA, and then again based on their confidence in the present.

Principal interview. Survey responses were used to guide the development of principal interview questions. A sub-sample of survey respondents was selected for follow-up interviews. The sub-sample was selected on the following variables: school level, geographic area of the school, principal type (head or assistant), and type of coaching received. Further, variation was sought in characteristics of the participants themselves, including gender, race, and tenure as a principal. The interviewees were selected to provide data on the subjective perspectives of MPA participants that represent maximum variation in the characteristics of the schools of all survey participants (Mertens, 2015).

The interview was semi-structured with a few broad questions designed to probe how MPA contributed to changes in principal self-efficacy, how contextual factors may have influenced self-efficacy changes, and how a coaching relationship influenced changes in self-efficacy. Follow-up questions were asked based on the answers provided.

All interviews, whether conducted in person or using video conferencing, were recorded and transcribed using Rev.com. Transcripts were then corrected by the researcher while listening to the audio recordings. Transcripts were then coded based on the research questions. A set of codes was developed based on participants' perceptions of how MPA or other contextual factors supported growth in their self-efficacy and the principal leadership domains in which they grew the most. See appendix C for the interview protocol.

Data Analysis

This study employed descriptive and inferential statistics. Descriptive statistics were used to determine the average amount of growth in principal self-efficacy in each

leadership domain, the percentage of participants who reported engaging in each level of coaching, and the percentage of participants who work in districts with a majority of principals who have participated in MPA versus those who do not. Further, descriptive statistics were used to inform the researcher about the characteristics of the population sample including gender, race, tenure, and other factors.

Paired T-Tests were run on the growth in each domain to determine if the change was statistically significant. Correlations between the growths in each domain were conducted to determine the concept validity of each domain. MANOVAs/Regressions were run in each domain on a number of school and principal contextual factors (e.g. school free and reduced-price meal percentage, principal gender, etc.) to determine if they were associated with changes in self-efficacy. Effect size of the growth in PSE was calculated using Cohen's *d* to determine the strength of change between pre and post means. While tests of significance can tell us if an intervention works, effect size can tell us how well it works and allows for comparisons to other interventions. Changes in variability between pre-MPA and post-MPA PSE ratings were calculated for range, interquartile range, and variance.

Spearman correlations between collective principal efficacy and principal self-efficacy were run in each domain to determine any associations between the two. An ANOVA of collective efficacy by the percentage of principals in the district who participated in MPA, and by district size, were run to determine if there were statistically significant differences between the means of the different variables. Findings from the analyses above were used to answer the research questions.

MPA participant interviews, as well as open-ended responses on the survey, comprise the qualitative data for this study. These data were coded using thematic content analysis from the research questions.

Summary

This retrospective study used a mixed method design to explore and describe the impact of leadership development practices on principal leadership self-efficacy. A survey was used to determine principal perceptions of their growth in self-efficacy that they experienced in four domains of leadership after having participated in principal leadership development, and which domains, if any, had greater growth overall. In addition, the survey was used to determine differences in self-efficacy growth between participants who received leadership coaching and those who did not. Finally, the survey was used to explore and describe collective principal efficacy, its relationship to principal self-efficacy, and differences in collective principal efficacy among participants who work in districts with a majority of principals who participated in MPA and those who do not. The survey was offered to all past participants of MPA who were currently practicing principals.

Using maximum variation, nine survey participants were selected and agreed to participate in follow up interviews. These interviews were used to determine what factors the participants believed contributed to their growth in self-efficacy. Further, interviews provided a greater depth of understanding in participants' perceptions of which domains MPA had the greatest impact on and why.

Chapter 4

Findings

Introduction

This research study focused on three research questions.

1. What is the association between principal participation in the Minnesota Principals Academy (MPA) and their growth in self-efficacy as a principal in the four domains of school leadership?
    a. Sub 1: Using four domains of principal leadership (Setting Directions, Developing People, Redesigning the Organization, Managing the Instructional Program), how did participants' sense of their self-efficacy as a principal change from their Pre- to Post- experience in the MPA? To what do principal participants attribute those changes?
    b. Sub 2: In which leadership practice domains do the principal academy participants feel greater growth in self-efficacy efficacy as a principal in Pre--Post experience in MPA? Why?
    c. Sub 3: What roles do contextual factors (school, district, and personal) play in principal academy participants' principal self-efficacy assessments?
2. What are the differences in principal self-efficacy between MPA participants who also received principal coaching versus those who did not?
3. What are the differences in collective efficacy for participants who work in districts where the majority of the principals from their school district have participated in MPA and those who do not?

a. Sub 1: What is the association between principal self-efficacy and principal collective efficacy?
b. Sub 2: What is the association between district size and principal collective efficacy?

Survey Respondents

Of the 144 people in the population of practicing principals, 65 completed the survey for a response rate of 45.1%. At the time of the survey, 10 of the 65 (15.4%) participants were assistant or associate principals. The remaining 55 (84.6%) were head principals. Of the head principals, 30 (54.5%) had been a head principal five years or less. Another 7 (12.7%) had been head principal for more than 15 years. A total of 64 people reported their gender with 48.4% female and 51.6% male. Ten (15.4%) of the respondents identified as people of color, the majority of those as Black or African-American. There was a mix of school levels among the respondents, including 24 (36.9%) who were elementary principals, 15 (23.1%) who worked in a middle school, 19 (29.2%) who were high school principals, and 7 (10.8%) who worked in multi-level school buildings (e.g. Kindergarten through 8th grade). Three principals led charter schools, one a private school, and the rest traditional public schools. Of the 65 respondents, nearly half (46.2%) reported that they worked in schools in greater Minnesota. Another 16 (27.7%) worked in urban schools. The remaining 17 (26.1%) reported working in schools located in the suburbs. School populations ranged from a minimum of 200 students to a maximum of 3000 students. Although there were some outliers, student population largely matched school level with elementary schools typically ranging between 300 and 600 students, middle schools typically ranging

between 500 and 850 students, and high schools typically ranging between 580 and 3000 students. Twenty-four (36.9%) of the schools had a free and reduced-price meal (FRPM) qualification rate of 30% or less. Another 30 (46.2%) schools had FRPM qualification rates between 31% and 70%. The remaining 11 (16.9%) schools had FRPM qualification rates above 70%.

Table 4.1

Characteristics of Survey Respondents by School Level

Characteristic	Elementary	Middle School	High School	Multi-Level
Gender				
Male	6	8	14	5
Female	18	6	5	2
Race/Ethnicity				
Principals of Color	2	4	2	2
White Principals	22	11	17	5
Tenure				
5 years or less	6	9	7	4
Between 5 and 15 years	8	3	8	2
More than 15 years	10	3	4	1
School Region				
Urban	6	5	4	3
Suburban	8	2	6	1
Greater MN	10	8	9	3
School FRPM rate				
30% or less	10	2	9	3
31-70%	10	11	7	2
71% or higher	4	2	3	2

Interview Respondents

Interviewees were selected for maximum variation in the contextual factors of school level, geographic region, principal type, and type of coaching received. The group of interviewees was roughly proportional to the overall sample for the contextual factors of race and school size. Compared to the overall sample, interviewees were slightly less experienced as head principals with 55% having five years or less of experience.

Additionally, 48% of survey respondents were female, while 67% of interviewees were female. Finally, the interview respondents were more likely to work in a school with 71% or more of the students qualifying for FRPL (44%) compared to the overall sample of survey respondents (17%).

All nine interview participants were invited to participate via email a few months after the survey closed and agreed to participate. They had the choice to be interviewed in person or through an online audio-video interface. Four interviews were conducted in person at a location of the participant's choice. Four additional interviews were conducted using an online interface, while one was completed over the telephone due to technical difficulties with the online interface. Interviews lasted between 23 and 37 minutes. Interviews were recorded, transcribed and coded.

Table 4.2

Interview Participants and Their Characteristics

Principal	School Level	Geographic Region	Principal Type	Coaching Level Received
1	Elementary	Suburban	Head	Formal coaching from supervisor
2	High School	Greater MN	Head	Informal coaching from supervisor
3	Middle School	Urban	Assistant	Formal coaching from coach outside the school
4	High School	Suburban	Head	No coaching
5	Elementary[a]	Urban	Head	Informal coaching from colleague
6	Elementary	Greater MN	Head	Informal coaching from supervisor
7	Elementary[a]	Urban	Head	No coaching
8	Middle School	Greater MN	Head	Formal coaching from supervisor
9	High School	Suburban	Assistant	Informal coaching from colleague

[a] Charter school

Findings

The information described below includes both survey and interview responses. It is organized by research question.

Changes to Principal Self-Efficacy in the Four Domains of School Leadership. Using four domains (D) of principal leadership (Setting Directions (D1), Developing People (D2), Redesigning the Organization (D3), Managing the Instructional Program (D4)), the first research question explored how participants' sense of self-efficacy changed after participating in MPA compared to before participating in MPA. Question 1 also explored to what principal participants attribute those changes.

Survey findings. To determine growth in self-efficacy, descriptive statistics were run for each of the four principal leadership domains (Table 4.4). Overall, mean self-efficacy ratings prior to participating in MPA ranged from 3.7 to 4.1 across the four domains, a spread of 0.4 points. In general, participants rated their self-efficacy as having *moderate confidence*. The spread in mean post MPA ratings between the four domains was 0.13. The mean growth in self-efficacy rating was approximately one point in each of the four domains. It ranged from 0.9 points in Developing People (D2) and Redesigning the Organization (D3) to 1.2 points Managing the Instructional Program (D4). For example, before participating in MPA, principals reported a mean self-efficacy rating for Setting Directions (D1) was 3.9 on a six-point scale. Post-MPA, participants reported a mean self-efficacy rating of 4.9 for a growth of 1.1. In practical terms, on average, participants' self-efficacy judgments went from *moderate confidence* in their personal capabilities to accomplish the tasks related to each domain in their schools prior to participating in MPA, to *significant confidence* after participating in MPA.

Table 4.3

Survey Self-Efficacy Scale

Descriptor	Point Value
No confidence	1
Little confidence	2
Some confidence	3
Moderate confidence	4
Significant confidence	5
Complete confidence	6

Paired T-tests were run to determine if growth in self-efficacy was statistically significant (Table 4.4). For Domain 1, the difference between the mean pre-MPA self-efficacy rating and the mean post-MPA rating was 1.1 ($t(64) = 11.8,\ p < .001$). The lower and upper 95% confidence intervals of the difference were 0.9 and 1.2 respectively. Together, these statistics demonstrate that the difference in pre and post MPA mean self-efficacy is statistically significant. Domains 2, 3, and 4 had similar statistical results to Domain 1.

Additionally, in order to understand the strength of the growth in PSE, effect size was calculated using Cohen's *d*. Effect sizes of growth in PSE in each domain range from 1.24 (D1) to 1.7 (D4). Growth in all four domains show a strong effect (Table 4.4).

Table 4.4

Principal Self Efficacy Mean Growth and Effect Size

		Pre		Post			95% CI		
Domain	***n***	***Mean***	***SD***	***Mean***	***SD***	***Mean Growth***	***Low***	***High***	***Effect Size***
D1	65	3.9	0.9	4.9	0.7	1.1	0.9	1.2	1.24
D2	65	4.0	0.7	5.0	0.6	0.9	0.8	1.1	1.53
D3	65	4.1	0.8	5.0	0.6	0.9	0.8	1.1	1.27
D4	65	3.7	0.8	4.9	0.6	1.2	1.0	1.3	1.70

Note. All pre-post differences (Growth) are statistically significant at $p<.001$.

Finally, a goal for any profession is to identify effective practices, teach those practices, and reduce the variability in the quality of the implementation of those practices among practitioners. To determine not only if mean PSE ratings improved among MPA participants, but also examine changes in variability of PSE ratings from pre-MPA to post-MPA, range, interquartile range, and variance was calculated. Variability was reduced in all measures across all domains (Table 4.5). For example, in Developing People (D2), the range between the minimum and maximum score decreased from 3.2 to 2.0 on the six-point scale from pre-MPA to post-MPA. The interquartile range similarly narrowed from 1.0 to 0.7. There was also a reduction of 0.2 in variance between pre-MPA PSE and post-MPA PSE in Domain 2.

Table 4.5

Changes in Variation of Principal Self Efficacy Ratings Between Pre-MPA and Post-MPA

Domain	Range	IQR	s^2
D1	-0.8	-0.2	-0.3
D2	-1.2	-0.3	-0.2
D3	-1.3	-0.3	-0.3
D4	-1.0	-0.2	-0.3

Interview findings. Using the literature related to antecedents of principal self-efficacy (Leithwood & Jantzi, 2008; Osterman & Sullivan, 1996; Tschannen-Moran & Gareis, 2005) and characteristics of effective principal academies (Browne-Ferrigno, 2007; Cardno & Youngs, 2013; Duke, 2014; Robin et al., 2015; Versland, 2016), interview participants were asked what supported their growth in self-efficacy. They were given example categories of factors about MPA, their school, or their district. Aspects of MPA were most frequently mentioned. All nine interviewees indicated that the network

of colleagues they developed with their cohort played a significant role in their increasing self-efficacy. Some participants commented on how their cohort was an ongoing resource offering differing strategies and approaches. One participant (#3) put it this way,

> There have been a number of us that will send emails to each other if we have any questions or thoughts about different type[s] of things. At least I do know that I do have another support system outside of this district of people that I can also connect with.

For some, realizing how similar they were to other principals and leaders across the state in other districts built their confidence. For example, a participant (#4) commented about the network of MPA cohort, "So it was actually very affirming to talk [with my cohort], and it did build confidence, because talking with others, it was like oh, I know a lot about this. I know a lot more about this than I thought." Still others grew their confidence by learning from cohort members they identified as particularly skilled. A participant (#2) said, "and there were some really good leaders in [MPA] and I think being a part of that just rubs off on you, that idea that like, yeah, we can all do this." Two of the participants also mentioned non-MPA networks that helped build their confidence. For an African-American principal, he drew confidence from elders in his local community. Another participant had a strong community of regional principals in Greater Minnesota that helped build his confidence. The supports described above relate to vicarious experiences, which is one of the four antecedents of self-efficacy described by Bandura (1977). Vicarious experiences include observing or hearing about the successful task related behavior of another principal one views as similar to oneself.

Another theme that emerged from the interviews was the array of content within the curriculum, such as course readings, case studies, videos, and subsequent discussions, all of which helped build self-efficacy among principals. A number of participants commented how the case studies and videos especially helped them to apply the learning to their school buildings. For example, one principal (#8) commented, "I loved the [case studies] and videos that showed practice and action . . . so you could get in a visual idea of some of the conversations you were having [in your building]." Another principal (#6) stated, "I feel I'm much stronger in taking theory and applying it to what's happening in a classroom." Others pointed to the knowledge and understanding they developed from the readings and research. "And what I got from MPA is two years of going through content and leadership and best instructional practices and scholarly leadership. And by the end of that I found my confidence again" was a comment by one participant (#1) exemplifying this thinking. Participants regularly identified specific content in the curriculum that helped them build their confidence. One principal (#9) commented, "I just really remember talking about professional development . . . and how to lead that work . . . I had a lot of new learning from that. That helped me in leading not only new teachers but also veteran teachers." The increased knowledge interviewees described relates to person level antecedents of self-efficacy (Gist & Mitchell, 1992). Increased knowledge can lead to more favorable judgments of one's own capabilities to successfully complete a task.

School Leadership Domain(s) of Greatest Self-Efficacy Growth. This study, using a sub-question of research question one, examined which domains of school leadership principals reported greater growth in and to what they attributed their greater growth.

Survey findings. While no domain of school leadership stands out as having higher growth in self-efficacy among participants than the others, the participants reported meaningful growth in each of the four domains. Setting Directions (D1) had a growth in mean self-efficacy of 1.06 points on a 6-point scale. Developing People (D2) had a growth of 0.93 points. Redesigning the Organization (D3) and Managing the Instructional Program (D4) had a growth in mean self-efficacy ratings of 0.93 and 1.16 respectively. On a 6-point scale, the difference of 0.23 of a point between the minimum and the maximum gain in self-efficacy is not descriptively meaningful. In other words, for each domain, the growth in self-efficacy ratings moved the average rating from *moderate confid*ence prior to participating in MPA to *significant confidence* afterward.

Interview findings. Interview participants were asked in what one or two domains MPA most helped them develop their self-efficacy. Eight of the nine interviewees named Setting Directions (D1). A high school principal (#9) commented,

> We're really trying to take a look at what our mission is and collective voices, that's admin[istration], that's teachers, that's students, that's community members. But bringing everybody to the table, and so I do believe that the Principal Academy has helped me with that.

A high school principal in greater Minnesota (#2) stated, "Well, I think that vision process was important for me because that was actually the project I did, was to set a vision for our school building." A rural elementary principal (#6) commented, "The timing was very helpful for us, which resulted in a vision for the district, which then trickled down to a vision for the elementary school, which then meant identifying goals, and over time, measuring our progress on those goals." A middle school principal (#8),

when asked how MPA helped build her confidence in Setting Directions stated that "[MPA] just continually went back to things . . . and then all the other research and modules really grounded you [in] . . . what's good for schools, this is what's good for our school community, and giving more confidence in leading in that direction." Related to vision, she added, "I'm so much better at asking the why before we get to the what and how."

When asked which one or two school leadership domains MPA most helped build their confidence, Developing People (D2) was named with the second most frequency (6 of 9) by principals. An elementary principal in greater Minnesota (#6) added an instructional coach position, realizing the staff needed more support developing their instructional practice. According to the principal, "that started based on the conversation we had [at MPA]." He went on to say, "we talk quite often about how do we, as leaders, support the instruction in the classroom? How do we coach teachers up . . .?" Another principal (#4) called out learning about teacher evaluation as an important self-efficacy builder. She stated,

> It was super helpful to and hear there was so much change going on in our observation model in the IGP (individual growth plans), and what we were responsible for having and really coaching our educators, wherever they are in their journey, whether they were new or around awhile, or at the end of their career, I could really motivate as well. Plus, legally what was being discussed and what we were accountable for.

Another way growth in self-efficacy manifested itself for principals was confidence in knowing quality, research-based sources of professional development they could rely on

to train their staff. For example, one charter school principal (#5) put it this way, "the relationship with the Center for Reading Research wouldn't have happened either without [MPA]."

Less than half (4/9) of the interviewees mentioned Managing the Instructional Program (D4). One way in which principals experienced self-efficacy growth was through deepening their knowledge of research about learning and instruction in the disciplines. For example, a suburban elementary principal (#1) described her growth this way,

> When we were doing some of the math or science, some of that content specific stuff, I think that was really where I grew in those areas that then when I was in classrooms doing observations around social studies I had more in my repertoire around this is best practice in social studies instruction.

Another way principals experienced growth in their self-efficacy in Managing the Instructional Program was through changing their use of time and focusing on instruction. A charter school principal (#7) put it this way, ". . . now [I understand] the principal is, needs to be, the instructional leader and there has to be ways to keep that time sacred . . . that was kind of one of the biggest things."

Redesigning the Organization (D3) was only named twice. This may be due to the integrated nature of these domains. Few school change initiatives fall into only one of the four domains. Interviewees may have been more focused on the more tangible and early changes they made than the meta-level changes of Redesigning the Organization.

Role of Contextual Factors in Principal Self-Efficacy. A third sub-question to question 1explored the role contextual factors play in principal academy participants' self-efficacy assessments.

Survey findings. The survey asked participants to answer a variety of questions about contextual factors related to their school district, school, and them personally. Contextual factors were selected based on their inclusion in previous studies of principal self-efficacy and their potential influence on growth in principal self-efficacy. For example, at the personal level, women and people of color deal with barriers in their leadership such as sexism, racism, and stereotyping that males and whites do not. These barriers could potentially limit growth in self-efficacy. As such, examining these contextual variables provides insight into the extent to which participating in MPA influences growth in principal self-efficacy versus these contextual factors.

The association between each contextual factor and growth in each self-efficacy domain was tested using a MANOVA. Results for individual contextual factors suggest they are not associated with changes in pre and post MPA self-efficacy ratings in any of the four domains. For example, consider the association between the percentage of students who qualify for free or reduced priced meals (FRPM), for Domain 1, Setting Directions. Using the effect size Partial Eta Squared, 4.7% of the growth in Setting Directions ratings between pre and post was explained by FRPM. Further, the tests of between-subjects effects were not statistically significant ($F4, 60) = .8; $p = 0.544$). The multivariate tests revealed the lack of effect was the same across all four domains ($F(16, 252) = 0.8; $p = 0.655$). Regarding principal tenure, for all 4 domains collectively, the F-test was non-significant ($F(4, 60) = 1.2 ; $p = .33$). This indicates that average growth did

not differ between principals who had tenure as lead principal of 0-5 years and principals who had 6+ years' experience as head principal. Thus, it is unsurprising that F-test for Pillai's trace was also non-significant. Across all 4 domains, tenure only explained 7% of the variation in growth scores. For an individual domain, at most it explained 5% of the variation in D2 growth. Descriptive statistics reveal that other than the one participant with twenty-six or more years of tenure as a lead principal, self-efficacy growth was highest among participants who were assistant principals with zero years' experience as lead principal (Table 4.6).

Table 4.6

Mean principal self-efficacy growth by tenure

Tenure as lead principal	***n***	**D1 *Mean Growth***	**D2 *Mean Growth***	**D3 *Mean Growth***	**D4 *Mean Growth***
0 years (assistant principal)	7	1.6	1.2	1.4	1.7
1-5 years	21	1.1	1.1	0.9	1.2
6-10 years	10	1.1	0.9	1.0	1.3
11-15 years	10	0.8	0.7	0.8	0.9
16-20 years	10	0.9	0.8	0.8	1.0
21-25 years	6	0.8	1.0	0.7	0.9
26+ years	1	1.7	1.5	1.5	1.8
TOTAL	65	1.1	0.9	0.9	1.2

In addition, linear regressions with all of the contextual factors were run for each domain. While the contextual factors were not significantly related to growth individually, collectively the contextual factors explain a moderate to large portion of the variation in growth of principal self-efficacy in each domain. Contextual factors collectively explained the least amount of variation in growth for Domain 3, Redesigning the Organization, at 33%. For each of the other three domains the contextual factors explain over 40% of the variation in growth.

Interview findings. Interviewees were asked what impacted their confidence in the four domains outside of MPA. Four themes emerged from the thematic analysis of the qualitative data: (1) Principal tenure, (2) School district context, (3) Staff support, and (4) External organizations.

Principal tenure. Analysis revealed overall principal tenure, or tenure in their school at the time of MPA, played a factor in principals' confidence. Lack of experience, or practice in a given skill, is related to lower self-efficacy ratings in the literature (Bandura, 1992; Gist & Mitchell, 1992; Wood & Bandura, 1989a). A suburban secondary principal (#4) responded to the question about what impacted their confidence, "I think experience." She continued by describing how her confidence grew over time through various experiences. Similarly, a third-year principal at the time of MPA stated, "I think one of the things that builds, I don't think it is just my confidence, but principals' confidence in general, is just getting a few years under your belt" (#1).

School district context. Next, interviewees identified district-level factors that impacted their confidence. Some principals identified the small size of their district and therefore the close relationship with the superintendent, principals and district office staff that built their confidence. In response to the question, a secondary principal from greater Minnesota (#2) said, "Well, I definitely have the support of my superintendent, and I am in a small school district, so there's three administrators in my district, so we work pretty close[ly] together." A suburban secondary principal's (#9) confidence was built as a result of her superintendent asking her to participate in MPA and the overall culture in the district of the leadership investing in and supporting principal growth.

Staff support. Interview participants also identified teacher support as influencing their confidence. An elementary principal in greater Minnesota (#6) stated, ". . . I am fortunate. I have a very supportive staff. They're willing to take some risks . . ." An urban charter school principal (#5) stated having trusting relationships with teachers was a factor in building confidence. "I feel like I've built good relationships with teachers, too and so that's always helpful, too. I know my certain people to go to, to get a feel for it and people who are willing to be honest . . ."

External organizations. Finally, analysis revealed principals' work with external organizations as boosting their confidence. When an urban elementary principal (#7) who worked on developing a teacher practice rubric and implementing the Teacher Assistance Program (TAP) was asked what helped build her self-confidence she replied, "We began partnering with MDE to start, then we got this TIF grant so we started implementing the TACoP system." She went on to describe some of the supports she received from these external organizations.

These themes are not surprising, as principals' professional practice overall is heavily influenced by the people with whom they work most closely at both the district and school level. In addition, principals are also supported by and learn new ideas and techniques from outside organizations, especially during times of significant change. Interestingly, of the two participants who named staff as impacting their self-efficacy, they also named being in a small school district as having an impact on their self-efficacy. The other principal who identified staff as influencing her self-efficacy works in a charter school, which essentially is, for her, a school district. Being in a people intensive field, it follows that people play a significant role in self-efficacy assessments.

Impact of Coaching on MPA Participants' Principal Self-Efficacy.

Research question two focused on the influence of coaching in addition to participation in Minnesota Principals Academy (MPA). Specifically, it examined the differences in principal self-efficacy between Minnesota Principals Academy participants who also received principal coaching versus those who did not.

Survey findings. Survey participants were asked, "What type of professional support did you receive regarding your school leadership around the time you participated in MPA?" Response options fell into three categories.

In each of the four domains of school leadership, respondents who reported receiving informal coaching (n = 37) had higher average growth than those who had no coaching (n = 14) and those who had formal coaching (n = 14). The difference was greatest in the area of Setting Directions and Managing the Instructional Program where average growth was one-third of a point higher for informal coaching than the other categories (Table 4.7). However, none of these differences were statistically significant. The F-test for each domain in the MANOVA was not significant at alpha = .05, suggesting that mean growth did not differ between levels of coaching/support. Furthermore, the multivariate test suggested that the effect, or lack thereof, of coaching was the same across all four domains ($F(16, 252) = 0.8$; $p = 0.655$). This will be further discussed in Chapter 5. Coaching did explain a notable proportion of the variation in growth scores, particularly in D1 (9%).

Table 4.7

Principal Self-Efficacy Growth by Type of Coaching

		Domain 1 Setting Directions		**Domain 2** Developing People		**Domain 3** Redesigning the Org.		**Domain 4** Managing the Instructional Program	
Type of coaching	***n***	***Mean Grth.***	***Std. Dev.***	***Mean Grth.***	***Std. Dev.***	***Mean Grth.***	***Std. Dev.***	***Mean Grth.***	***Std. Dev.***
No Coaching	14	0.8	0.6	0.9	0.6	0.8	0.6	1.0	0.7
Informal Coaching	37	1.2	0.7	1.0	0.6	1.0	0.6	1.3	0.7
Formal Coaching	14	0.8	0.7	0.7	0.6	0.8	0.7	1.0	0.7
Overall	65	1.1	0.7	0.9	0.6	0.9	0.6	1.1	0.7

Interview findings. Interviewees were selected based on their survey responses to ensure perspectives from participants who had no coaching, informal coaching, and formal coaching. In order to corroborate survey responses, each interviewee was asked if they received any formal or informal coaching during or shortly after their participation in MPA. For those who responded that they did receive some type of coaching, they were asked to describe the coaching, including their relationship to the coach and how, if at all, the coaching impacted their confidence in their leadership. In total, two interviewees reported receiving no coaching, four reported receiving informal coaching, and three reported receiving formal coaching. These numbers are roughly proportional to the survey participants' coaching experience and therefore comments relate to the overall sample.

Formal Coaching. A number of studies (de Haan et al., 2013; Kampa-Kokesch & Anderson, 2001; Passmore & Fillery-travis, 2011) have identified the coach to coachee relationship as a key to successful coaching. Goal setting and action planning have also gotten considerable attention in the coaching literature (Grant et al., 2009; Ladegard & Gjerde, 2014; Moen & Federici, 2012a). Among interviewees who received formal coaching, they described the credibility of the coach and relatedly the trust the principal had in the coach, as well as the kind of resources the coach provided, as having played a role in building their confidence as leaders. The background, experience, and success of the coach impacted how the principal valued and ultimately integrated what they learned into their practice.

Respect for and trust in the coach was an important component for the principals whose confidence was built through their work with the coach. For one interviewee (#7), respect for the coach came from the coach's understanding of the context of charter schools and the experience of the principal as a female leader, as well as their own success in their jobs. This principal had two different external coaches at different points in time. When asked about her relationship with her coaches, she replied, "I trusted both of them. They're both women that I had respected and saw their trajectory and their work, you know, [which] led me to say like, 'Okay, I can trust them,' and they have had success in their area." Related to that trust was the confidentiality of the coach. "I mean trust was the biggest thing that I could like, you know share these things and that they wouldn't be sharing them elsewhere." She went on to describe it this way.

> I can kind of share everything with [my coach], like that I was struggling [with] and couldn't necessarily share or didn't want to share with my leadership team

> and all that just to kind of wrestle through some of those tougher issues so I would have the confidence, frankly, to kind of go back to the team say like, "I think this is a good idea."

A suburban elementary school principal (#1), when asked about her relationship with her supervisor and coach, said,

> I think we all find educators who are just our people. They are people that you agree with philosophically. They're people who are smart and have such integrity and are so committed to the work and view everything through the lens of equity and how we can create a more just educational system.

She went on to say, "When you see somebody that lives into their values and it emulates as a leader who you want to be, it just inspires us all to be better." She concluded by saying, "And so, when you have a leader like that . . . you almost have the sense of you don't want to let him down and so you push yourself even more. And so that is some of the best coaching I've ever received." Finally, when asked about his relationship with his coach appointed by the school district, an urban secondary assistant principal (#3), who did not have the same trust in and respect for his coach as the other two interviewees above, noted, " She had been an assistant principal in [another urban district] and then came to [my school district] and had been [here] for a number of years but had never really been a principal."

Related to the coach as a resource provider, an urban charter school principal (#7) reported confidence being built through the coach providing research-based resources that deepened her knowledge about the changes being implemented at her school. Another principal (#1) reported that her supervisor, who played a coaching role,

provided tools for self-evaluation, goal setting, and action-planning, which she described as, “awesome.” These experiences stand in contrast to an assistant principal in an urban secondary school (#3) whose district assigned coach provided resources he didn’t feel were a fit for his school context. In describing his reaction to the resources he was provided by his coach, he internally questioned himself about their usefulness, asking, “Well, what about [urban environments]? Where are those schools that are doing exceptional work or those buildings or those educators that are doing that work?”

Informal Coaching. Three interview participants described having an informal coaching relationship with a colleague or supervisor during or shortly after their participation in MPA. These coaches did not set goals or create action plans, like the formal coaches did. Rather, they acted as reflective problem-solvers, advice givers, and resource providers. For two MPA participants their colleagues played informal coaching roles, whereas for the third participant the coach was both a colleague and a district-level administrator.

For an elementary principal (#6) from Greater Minnesota, a colleague in the same district who was participating in MPA concurrently also acted as coach by talking through potential action steps and implementation ideas specifically related to material being learned at MPA. The principal pointed to the extended and uninterrupted time in the shared car rides to and from MPA sessions as allowing time for some of the best coaching. “There was very much some reciprocal coaching that happened.” He added, “[We] have different strengths, different areas that we’re continuing to work on, so it was a nice balance because we could bounce ideas off each other . . . with maybe some feedback.” When asked how this informal coaching impacted his confidence, he stated,

"Sometimes . . . as administrators, our confidence has to take a little bit of a hit so that we are willing to step back and say, 'What can we do better? What should we do better?'" He indicated that, in the end, his confidence increased because he had to wrestle with different perspectives and how he might need to change as a leader in order to make the changes he wanted in his school.

For a high school suburban principal (#9), a critical aspect to the informal coaching she received was that it was from a former high school principal who was also female. "I find it's important that I have that female mentorship in my life because it's still a pretty male-dominated field [referring to being a high school principal]." This MPA participant indicated that her informal coach's long-time experience as a female high school principal was a resource because "there is nothing I could say or do . . . that she hasn't seen." She drew on that principal's experience and asked, ". . . what would you do?"

Principal Collective Efficacy

Research question three examines the differences in collective efficacy for participants who work in districts where the majority of the principals from their school district have participated in MPA and those whose districts' majority do not. Collective efficacy is quite similar to individual efficacy except that the focus is on the given group's collective capabilities to plan, organize, and execute the courses of action needed to accomplish a task or produce a given level of attainment (Bandura, 1997). It is important to note that collective principal efficacy is not the sum of self-efficacy of the individuals within the group. Rather, it is the confidence group members have in their

group's collective capabilities. For this study, the group was defined as all of the school principals in a school district.

Survey findings. *F*-test results show that the percent of principals within a school district who have participated in MPA was unrelated to collective principal efficacy ($F(1,57) = 0.2$ $p = 0.63$). Further, there was not a meaningful difference in the mean collective principal efficacy between principals working in districts with 50% or fewer principals who have participated in MPA (5.1) and those working in districts with more than 50% (5.2) (Table 4.8). This is a tenth of a point difference on a six-point scale. Breaking the data down into ranges of 25 percentage points reveals only a slightly greater variation between groups. Average collective principal efficacy (Table 4.8) only varies 0.2 points on a six-point scale between the minimum average score (5.0 for districts with 0-25% of principals who have participated in MPA) and the maximum score (5.2 for districts with 26-50% of principals who have participated in MPA). With less than a quarter point of separation on a six-point scale this is not a meaningful difference.

Table 4.8

Mean Collective Principal Efficacy Ratings by Percent of District Principals Who Participated in MPA

Percent of District Principals Who Participated in MPA	***n***	***Mean* CPE**	***Std Dev***	***Std Error***
0-25%	30	5.0	0.7	0.1
26-50%	12	5.2	0.8	0.2
0-50% overall	42	5.1	0.8	0.1
51-75%	5	5.2	0.5	0.2
76-100%	8	5.2	0.5	0.2
51-100% overall	13	5.2	0.5	0.1
0-100% overall	55	5.1	0.7	0.1

Association between principal self-efficacy and principal collective-efficacy. As part of research question three, this study examined the association between principal self-efficacy and principal collective efficacy. Correlations were run between principal collective efficacy score and each of the four domains of school leadership post-MPA principal self-efficacy scores.

Survey findings. Due to the small sample size, a Spearman correlation was run, which has less stringent assumptions than the more common Pearson correlation (de Winter et al., 2016). Correlations between collective principal efficacy and principal self-efficacy on each of the four domains of school leadership range from .20 to .25 (Table 4.9). Collective principal efficacy and principal self-efficacy are not strongly correlated. However, post-MPA principal self-efficacy scores in each of the four domains of school leadership are correlated to each other at a statistically significant level.

Table 4.9

Correlation of Collective Principal-Efficacy and Post Minnesota Principals Academy Principal Self-Efficacy

	Domain 1 Setting Directions	**Domain 2** Developing People	**Domain 3** Redesigning the Organization	**Domain 4** Managing the Instructional Program
Collective Principal Efficacy	.24	.25	.21	.20
Domain 1 Setting Directions		.78	.82	.82
Domain 2 Developing People			.73	.79
Domain 3 Redesigning the Organization				.73

Association between district size and principal collective efficacy. As part of research question three, this study seeks to understand the association between district size and principal collective efficacy. To examine the question, participants were divided into four categories of district size. Mean collective efficacy scores were compared to determine if mean scores had a negative or positive trend related to the size of the district's student population.

Survey findings. District size is not associated with collective efficacy ($F(3, 57) = 0.5$, $p = 0.69$). Average collective efficacy (Table 4.10) only varies only 0.5 points on a six-point scale between the minimum average score (4.9 for districts from 5,001 to 10,000 students) and the maximum score (5.3 for districts of 1,000 students or fewer). Further, there were only seven respondents whose districts had one thousand or fewer students, which was also the category with the highest overall mean collective efficacy score. The spread between the upper bound and lower bound 95% confidence interval for principals in districts with 1,000 or fewer students was nearly four points whereas the spread was less than one point for each of the other three categories of district size. The difference in mean collective efficacy scores between different district sizes is not practically meaningful.

Table 4.10

Mean Collective Efficacy Ratings by District Size

District Size	*n*	*Mean*	*Std. Dev.*	*Std. Error*
1,000 or fewer students	7	5.3	0.74	0.28
1,001 to 5,000 students	27	5.1	0.73	0.14
5,001 to 10,000 students	10	4.8	0.70	0.22
More than 10,000 students	21	5.0	0.69	0.15
TOTAL	65	5.0	0.70	0.09

Summary

Using complimentary surveys and interviews, this study found that past participants of a principal leadership academy had a mean growth of approximately one point on a six-point scale in principal self-efficacy in each of four domains of school leadership. The effect size was very large in each domain of PSE. The impact of the principal leadership academy was both significant and strong.

In addition, participants perceived the cohort model and research-based curriculum as supporting their growth. Further, although descriptive statistics found differences in mean growth in principal self-efficacy among those participants who had no coaching, informal coaching, and formal coaching, these differences were not statistically significant. Participants did perceive coaching relationships characterized by trust supported their growth. Finally, this study found that collective principal efficacy was weakly correlated to principal self-efficacy. Principal collective efficacy did not differ in a statistically significant way because of variables in district size or the percent of principals in the district who had previously participated in Minnesota Principals Academy.

Chapter 5

Summary and Conclusions

Introduction

In recent decades there have been calls for school improvement and school reform due to the US's falling rank among countries in educational outcomes (National Commission on Excellence in Education, 1983). With little to show for reform efforts since the publication of *A Nation At Risk* (1983), the No Child Left Behind Act (2001) was heralded as a way to improve schools and student achievement through accountability. Yet, in 2015, US students ranked in the middle among seventy-one countries internationally on Programme for International Student Assessment (PISA) tests of science and reading (DeSilver, 2017). The country fared worse in mathematics, scoring thirtieth among the thirty-five member countries of the Organization for Economic Cooperation and Development, which sponsors the PISA. State education agencies and school districts are looking for ways to improve student achievement. While the research literature points to teacher quality as a key factor in student achievement (Leithwood et al., 2004a; Rivkin et al., 2005; Rowan et al., 2002; Wright et al., 1997), there is also evidence that principals play a critical role in school improvement (including teacher quality) and student achievement (Louis, Leithwood, et al., 2010; Marzano et al., 2005; Waters, Robert Marzano, et al., 2003). As such, improving principals' leadership capabilities is a key factor in school improvement and improving outcomes for students. This study examined the impact of principal professional development institutes on principal self-efficacy related to four domains of school leadership. In addition, the study explored factors related to principals' growth in self-efficacy.

Principal self-efficacy (PSE) is defined as "principals' judgments of their capabilities to plan, organize, and execute tasks and deal with their relationship to people and institutions in their environment" (Federici & Skaalvik, 2011, p. 3). Once again, Domain 1 is Setting Directions, which pertains to the tasks of "building a shared vision, fostering the acceptance of group goals, creating high performance expectations, and communicating the direction" (Louis, Leithwood, et al., 2010, p. 68). Developing People is the second domain and involves the intellectual stimulation (Leithwood et al., 2004a) of staff through formal and informal means such as professional development (Robinson, 2007), feedback (Chappelear & Price, 2012), and appropriate modeling (Leithwood et al., 2004a). Domain 3, Redesigning the Organization, is associated with building collaborative structures and processes, sharing and distributing leadership, and strengthening school culture (Hitt & Tucker, 2016). Managing the Instructional Program, the last domain, involves supervising and evaluating instruction (Fancera & Bliss, 2011), coordinating and aligning the curriculum (Robinson, 2007), and coordinating a system of assessments to monitor student progress (Hitt & Tucker, 2016).

A retrospective, mixed-methods approach, including a survey and follow-up interviews, was used to determine changes in perceived PSE in the four domains of school leadership, differences of PSE by type of coaching received, and principal perceptions of collective principal efficacy. Using mixed-methods enabled a broad approach to data collection by including many participants through the use of quantitative methods, such as surveys, and an in-depth view by including qualitative methods, such as participant interviews. According to Teddlie and Tashakkori (2009), this was a QUAN + qual study because the survey (quantitative method) was the dominant design and the

interviews (qualitative method) were secondary. Participants in this study included principals and assistant principals who led schools at the elementary, middle, and high school level, as well as some schools that were multi-level (e.g., K-12). Further, the schools they led were located in geographically diverse areas including urban, suburban, and rural areas.

Conclusions and Discussion

Self-efficacy is a significant factor in principals' ability able to navigate the varied and often difficult demands of school improvement and to lead their schools effectively. Personal self-efficacy plays a role in principals' choices related to goal setting, effort, persistence, resilience, and emotional regulation (Bandura, 1991; Maurer, 2001).

Overall, there were four areas in which conclusions were drawn from the evidence. Each area is described in depth below.

1. (Q1) Participation in ongoing principal leadership development programs is associated with increased PSE related to all four domains of school leadership.
2. (Q1) Increased knowledge of research and best practices related to the four domains of school leadership in the context of a cohort is critical to increased PSE.
3. (Q1, Q2) Having a critical colleague to support learning is associated with increased PSE.
4. (Q3) There is little difference in CPE based on percentage of principals in a district who had participated in MPA. Impacts of principal leadership academies, of which MPA is one example, appear to be more individual than collective.

Conclusion/Inference 1: Principal Self-Efficacy Growth

On average, principals' self-efficacy related their ability to lead their schools increased from *moderate confidence* to *significant confidence* after participating in an ongoing, cohort-based principal development program. Growth was consistent across all four domains of school leadership (Setting Directions, Developing People, Redesigning the Organization, and Managing the Instructional Program). Of particular note, not only were the findings statistically significant, but there was a strong effect with effect size in each domain ranging from 1.24 to 1.70. In addition, the variability in PSE ratings among participants was more densely distributed near the mean in post-MPA ratings. In conclusion, growth in PSE among MPA participants was strong and significant and the variability in ratings decreased from pre-MPA ratings to post-MPA ratings. Taken together these results demonstrate principal leadership academies like MPA have a strong impact on PSE and therefore on principals' professional growth and development and an indirect impact on the school environment and student learning. Given the notable, very large effect size, especially in Redesigning the Organization (Domain 4), perhaps the most advanced among the four domains, this finding tells educational leaders that brining principals through the professional development curriculum to this point is the ultimate goal.

Contextual factors. While past studies have drawn connections between higher levels of PSE at a specific point in time and particular contextual factors, no study to date has looked at PSE growth over time and examined associations with contextual factors. For example, school level factors such as teachers, staff, parents, and students (Tschannen-Moran & Gareis, 2005) were correlated to principal self-efficacy.

Additionally, Leithwood & Jantzi (2008) and Tschannen-Moran & Gareis, (2005) found correlations between principal self-efficacy and district level factors. In other words, contextual factors are associated to a principal's confidence in their ability to effectively lead a school. However, none of these studies looked at the association between contextual factors and growth in self-efficacy.

When looking at school-factors, such as school size, level, geographic region, and FRP percentage, there were no significant differences in PSE growth. In other words, the findings from this study reveals that these school level factors were not associated with higher or lower PSE growth among principals who participated in MPA.

In addition, district level factors showed little association with differences in PSE growth. Managing the Instructional Program (D4) was weakly associated with district size and the percentage of principals in the district who had participated in MPA. Although the predictive value was weak, the larger the district size the smaller the amount of PSE growth principals experienced in Domain 4. Managing the Instructional Program includes decision-making and implementation related to curriculum, instruction, and assessment. Larger districts typically have centralized departments that lead these tasks, whereas in smaller districts these tasks are left to principals directly, or principals are more directly involved in the district teams making decisions and leading implementation. Fewer opportunities to engage in these tasks by principals in larger district may lead to lower PSE growth as district size increases. Similarly, principals who had more than 50% of their principal colleagues in their district who had also participated in MPA experienced lower PSE growth in Domain 4 than those who had 50% or fewer.

Principal level factors such as gender and race did not provide predictive value for PSE growth. One factor of note, however, was the number of years respondents had been a lead principal at the time they completed the survey. The fewer years a principal had been a lead principal, the higher their growth in PSE tended to be. Furthermore, assistant principals, who were not yet head principals at the time they responded to the survey had the highest growth in PSE, followed by principals whose tenure as lead principal was from one to ten years. Experience is an antecedent to self-efficacy (Bandura, 1977; Gist & Mitchell, 1992). As such, it makes sense that those with fewer years as a lead principal experienced the greatest growth in PSE between the time they started MPA and when they completed the survey.

Higher growth in PSE among newer principals may also relate to the relevance and quality of principal preparation programs (Briggs et al., 2016; Davis, 2016; Manna, 2015). Novice principals may have gaps in their leadership knowledge and skills related to the principalship. Regarding assistant principals specifically, they are often relegated to school management tasks such as scheduling, behavior management, and monitoring school safety for large portions of their day and have fewer opportunities to engage in leadership tasks. This means fewer opportunities to practice for assistant principals. MPA, through the action-learning project, and through regular and ongoing interactions with practicing principals at MPA, may provide needed experience and models in order for assistant principals to develop higher self-efficacy assessments.

Overall, with principal tenure being the only contextual factor that had even a small predictive value for PSE growth, there is evidence that principal leadership

development programs like MPA are associated with growth in principals' leadership self-efficacy.

Conclusion/Inference 2: Cohort Model and Research-Based Content Important to Principal Self-Efficacy Growth

In open-ended survey responses and in interviews, two factors were consistently named by participants as supporting their increased confidence. First, the cohort model of the program allowed participants to develop positive relationships with other principals and to learn with and from them. Second, the quality of the curriculum content contributed to participants' knowledge and understanding of research and best practices, which increased their confidence in their leadership.

Cohort-based network. Researchers (Davis et al., 2005; Rowland, 2017; Sutcher et al., 2017) have identified cohort models as an effective design element of principal leadership programs. Findings in this current study confirm these previous research findings and add to the body of literature by demonstrating that the cohort-based network design is associated with not just to general self-efficacy, but, specifically with self-efficacy in each of the four domains of school leadership.

Principals' confidence in their leadership capabilities increased in three main ways as a result of the cohort-based network design. First, by comparing themselves to a sample of principals outside their own district, they found that they were very much like their colleagues in terms of their knowledge and leadership practices. Such social referential comparisons are a component of self-efficacy assessments (Bandura, 1991) resulting in participants feeling more confident. Second, through discussions during MPA, and for some, through discussions with cohort members outside of the context of

MPA, principals observed and heard about the successful practices of others. Hearing about such practices from a colleague that one might judge as being "like me" may vicariously lead to increased feelings of confidence in one's own ability to perform related tasks (Bandura, 1977; Schunk, 1995). Finally, through reflection on, and problem-solving of, current problems of practice in their leadership with cohort members, principals gained additional strategies they could exercise in their practice. Potentially, such social modeling (Bandura, 1991) led to greater confidence that they could better address the problems they faced.

Principal leadership development programs offer a structure and time that principals do not often get in their districts. Meetings among principals in school districts are often focused on management tasks and are often not designed to provide professional development. When they are focused on professional development, the learning is often about a specific program or practice the district is implementing and not on broader leadership skills. Further, time is not typically dedicated to reflection and problem solving related to their leadership of such programs and practices. Conversely, principal leadership development programs such as MPA often use interactive processes that provide principals opportunities to share problems of leadership practice with small groups of colleagues. One such process used in MPA is the Consultancy Protocol. The protocol provides an hour for a principal to describe a problem of leadership practice to a small group of colleagues and receive feedback. There is time for questions and answers about the problem as well as the sharing of possible strategies and tactics. Protocols like these can result in all three types of increased self-efficacy assessments described above: comparative, vicarious, and increased knowledge and skills. However, these processes

can be time consuming. Finding time during principal meetings with packed agendas can be challenging for school districts.

Quality research-based curriculum. Research-based content has been identified as a design characteristic of effective principal professional development programs (Davis et al., 2005; Rowland, 2017). Further, curriculum of effective programs is focused on content that matters to school improvement (Davis et al., 2005; Rowland, 2017; Sutcher et al., 2017). In this study, participant interviews reveal that these elements, indeed, played a critical role in participants' growth in self-efficacy.

During the review of literature for this study, it was notable that PSE growth had not been studied related to the four domains of leadership espoused by Leithwood, et al., 2004a. Previous research related to principal development programs and quality curriculum has not measured growth in PSE related to the four domains of school leadership. The present study provides evidence that participants in principal development programs with quality curriculum demonstrate growth in each of the four domains.

Minnesota Principals Academy, which is run by the University of Minnesota, uses the National Institute for School Leadership's (NISL) research-based curriculum. The academy supplements NISL's curriculum with additional research-based learning units designed and facilitated by faculty and staff at the university. This emphasis on academic research and its application is based on the mission of the program to develop scholarly leaders. Participants have described the impact of the "research-to-practice" focus of the program as getting them to think differently as a leader, to be more strategic and less tactical in their approach to problems and school improvement

generally. Participants reported frequently asking themselves and others in their schools, "what does the research say about that?" Equipped with a breadth of research and best practices across all four domains of school leadership, participants' confidence in their ability to lead increased.

Conclusion/Inference 3: Having a Critical Colleague to Support Learning is Associated with Higher Growth in Principal Self-Efficacy

Critical colleagues are those professionals whom a principal trusts and from whom they are willing to receive feedback. They are the people principals seek out for advice about, and problem-solving support with, school improvement issues. Critical colleagues can be formal principal coaches who work with principals to set goals, create action plans, and monitor progress. They can also be more informal relationships between two or more principal colleagues or between a principal and a central office administrator. In this study, survey results and interview findings both point to the important role critical colleagues play in principal self-efficacy growth.

As described in Conclusion/Inference 1 above, the cohort-based, ongoing nature of the MPA principal professional development program contributed to principals' growth in self-efficacy related to school leadership. The cohort design to support learning and self-efficacy growth was purposefully built into the principal leadership development program. When asked how they were supported to make changes in their school leadership, the most common response among survey respondents was having the support of a cohort of colleagues with whom they participated in MPA. Principals reported that their cohort colleagues provided ideas and resources, support in problem solving school

issues, different perspectives, accountability for completing the homework, and encouragement.

Minnesota Principals Academy participants who worked informally with a critical colleague or formally with a principal coach experienced more growth in their self-efficacy than those who did not. The differences were greatest between those who had no coaching and those who had informal coaching. Those who experienced informal coaching had the highest growth in principal self-efficacy across all four school leadership domains. Trust may play a role in the fact that those who experienced informal coaching had higher growth than those who had formal coaching. In informal coaching, the principal has a choice in whom they receive coaching from and trust likely plays a factor in their choice. Whereas, in many formal coaching relationships, the principal does not have a choice. It may be either their supervisor or someone else within the organization who has been assigned to be the coach.

Indeed, one interviewee whose coach was appointed by the district commented that his coach had not ever been a lead principal. He also questioned the usefulness of the resources the coach provided, in that they did not reflect his school context. This led to the principal feeling his coach did not provide credible guidance. In turn, this likely played a role in his feeling that their monthly meetings were perfunctory and not particularly helpful in his growth as a leader. On the other hand, one interviewee who had some choice in their formal coach emphasized that their coach had credibility and they trusted their coach. This principal experienced far more growth in their self-efficacy than the average among principals who had formal coaching. It is worth noting that the literature review on coaching revealed that the coach/coachee relationship is critical to

personal growth. Once again, this study found that those who experienced informal coaching had greater growth in self-efficacy than those who had formal coaching. It may be that some of the formal coaching relationships in this study were not a good match.

Another possible reason for the lower growth among participants who had formal coaching versus participants who had informal coaching is a lack of coaching training. While the literature has identified formal coaching as positively impacting self-efficacy, those studies have examined coaching relationships where the coaches were formally trained in coaching methods. While this study did not ask participants if their coach had formal training, it is likely that very few did. This is because principal supervisors typically come up through the ranks of principals and most do not have formal training in coaching. Over 60% of the formal coaches identified in this study were the participant's direct supervisor and is likely they did not have formal training as a coach. It is difficult to parse out the key factors among trust, credibility, and coaching training related to the differences in self-efficacy growth with a coach who had or did not have formal training. This may be an area for future study.

Another possible reason for the differences in principal self-efficacy between those who received informal coaching and those who received formal coaching could be whether or not the coach had the same background and knowledge related to the MPA curriculum as the coachee. From the roster of past participants in MPA, it is apparent that the supervisors who acted as formal coaches were known to have not participated in MPA themselves, except in one case. Those who had informal coaching had the ability to choose their coach. Such an opportunity allowed them to choose a colleague from MPA, with whom they had regular contact throughout the program. Their coaching

conversations would have been in the shared context of the research and best practices they were learning together. Participants may have also chosen a principal colleague from their school district. The majority of principals in this study had at least one principal colleague in their school district who had also participated in MPA. Having had the MPA experience may make them better equipped to provide feedback and advice aligned to what principals were learning through MPA. A lack of coaching training of the formal coach, the inability of the principal to choose their coach, and the likelihood that formal coaches had not themselves participated in MPA likely combined to result in lower levels of growth among those who had formal coaching versus those who had informal coaching.

Conclusion/Inference 4: Collective Principal Efficacy Is Weakly Related to Principal Self-Efficacy, District Size, or Percent of Principals in the District Participating in MPA

Perceptions of collective principal efficacy among MPA participants do not appear to be impacted by principals' perceptions of their own efficacy, the size of the school district in which they work, or the percent of principals within their district that have participated in MPA.

Principal self-efficacy and collective principal efficacy show little association with each other. Correlations between collective efficacy and PSE are .25 and under in all four domains of school leadership. This may be due, at least in part, to collective efficacy perceptions among principals being more dependent on perceived effectiveness of district leadership and perceived effectiveness of other principals in the school district rather than on their own effectiveness. Additional factors potentially influencing perceptions of

collective principal efficacy could include perceptions of the support school and district leaders have from school boards and the broader community.

District size does not help predict collective principal efficacy ratings. This may be due in part to how larger school districts tend to subdivide their districts for management purposes. Some districts may have a Secondary Assistant Superintendent and an Elementary Assistant Superintendent. Other districts divide by geography and have two or more "areas" with Area Superintendents who are responsible for the management of all elementary and secondary schools within their "area." In these scenarios, functionally for school principals, the districts do not feel like huge bureaucracies. Rather, they likely have opportunities to work with and build relationships with their supervisor and a small group of colleagues similar to principals in medium sized and smaller school districts.

Differences in perceived collective principal efficacy among different percentages of principals within a school district who had participated in MPA were not statistically significant. However, there were differences in perceived collective principal efficacy between those principals who had up to 25% of their principal colleagues who had participated in MPA and those who had more than 25%. This warrants further study.

Areas for Further Study

This study has demonstrated growth in principal self-efficacy in each of the four domains of school leadership among participants in an ongoing, cohort-based principal leadership development program. There are several areas worth further study. Some possible areas include investigating how networks and critical others support self-efficacy growth, how coaching specifically aligned to MPA from a trained coach impacts growth

in PSE, how central office staff participating in principal leadership development programs with principals in that district impacts principal growth in PSE, and how principals and central office staff participating in principal leadership development programs together impact CPE.

While the present study identified the cohort-based network and critical colleague as an important factor in principal self-efficacy growth, more study is needed to develop a deeper understanding of how they support growth. Further study could identify specific design elements within a cohort-based principals' professional development program that support principal growth. For example, are inter-district colleagues, or intra-district colleagues more likely to support growth? Another question could examine the possible ratio of content delivery to partner and small group processing, reflecting, and problem solving that potentially could be linked to greater principal self-efficacy growth. Further study might investigate or develop protocols for reflection and problem-solving (such as the consultancy protocol) that could potentially lead to higher levels of self-efficacy growth. Finally, do principals experience higher self-efficacy growth when they work repeatedly with the same critical colleague or small group of colleagues consistently throughout the program?

Differences in self-efficacy growth between the level of coaching received did not rise to a statistically significant level in this study. However, the coaching received was not necessarily happening concurrently with MPA, or shortly after. Further, this study did not explore the quality of coaching received. More exploration is needed regarding how coaching, from a trained coach who has a deep knowledge base of the curriculum, impacts self-efficacy growth among principal participants in leadership development

programs, especially when that coaching takes place concurrently with the program or in close proximity to its completion. Such a study could provide important insights into whether or not such a design element could enhance the amount of self-efficacy growth among principals.

A final area of further study is exploring how principals attending cohort-based leadership development programs with staff in their district office who have direct involvement in school improvement (principal supervisor, curriculum director, etc.) impacts both principal self-efficacy and collective principal efficacy. Obtaining support from district office personnel for enacting the kind of leadership called for in principal leadership programs could be difficult if it is not aligned to district philosophy or practice, or if district office personnel do not fully understand the practices or the research base to support it. Understanding the impact of such a district/site collaborative learning design to principal development could help districts decide how to better invest their principal leadership development funds. In addition, it could provide insight to organizations that develop and run principal development programs regarding design elements most likely to result in both self-efficacy growth and collective efficacy growth for principals and districts.

Final Summary

This study sought to discover the impact of principal leadership development programs on principal self-efficacy. Principals demonstrated self-efficacy growth in each of four domains of school leadership. Growth was significant and strong. Participants in the principal leadership development program perceived that the cohort-based network and the quality curriculum played important roles in supporting their growth. Those

participants who also received coaching perceived positive outcomes for their leadership because of the support they received. This suggests that an ongoing, cohort-based principal leadership development program with high quality curriculum improves principal self-efficacy related to four domains of school leadership. While further study is needed, there is evidence to suggest that coaching, in addition to participating in such programs, can provide additional support to principal growth. Self-efficacy is linked to higher levels of performance and principals play a critical role in school outcomes for staff and students. Consequently, participation in the kind of principal leadership development program examined in this study likely leads to better school outcomes. As such, principal leadership academies warrant further consideration as a policy mechanism for states, as an intervention for school districts, and an area of partnership for higher education.

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Appendix A

Self-Efficacy Sources

Self-Efficacy Source	Description
Mastery experiences through graduated attainments	Repeated successes of a particular task or behavior results in self-efficacy beliefs. Such successes should not come too easily or without some failures along the way or it may diminish perseverance and resilience.
Vicarious experiences	Seeing another, especially someone similar, successfully complete a task or engage in a behavior results in self-efficacy beliefs. Competent models demonstrate the knowledge, skills, and strategies necessary for successfully managing the demands of a task.
Verbal Persuasion	If people are persuaded that they can accomplish a task they are more likely to exert more effort. Verbal persuasion is most effective from a competent and trusted source. Persuasion is best used with appropriate aids. If individuals are not provided aids to increase the likelihood of success the credibility of the persuader may be diminished and self-efficacy beliefs diminished.
Emotional arousal	Positive moods enhance self-efficacy. Anxiety, depression, fear, and stress work against self-efficacy. Individuals are more likely to anticipate success when not experiencing such strong adverse emotions.

Based on Bandura (1977, 2009)

Appendix B

Survey Protocol

Impact of MPA on Principal Self-Efficacy

Thank you for your interest in participating in this survey. The detailed consent form is attached to the email you received. In order to participate you must provide your consent.

Answers are confidential.

The estimated time to complete this survey is 15-20 minutes.

Do you consent to participate in this survey as part of the research study?

- ○ Yes (1)
- ○ No (2)

Overview This study is designed to better understand the impact of the Minnesota Principals Academy on principals' perceptions of their confidence in their skills related to a variety of leadership practices.

In the first part of the survey you are being asked to recall your perception of your confidence in your ability to engage effectively in a variety of leadership practices prior to your participation in MPA and your perception of your confidence in your ability to effectively engage in those leadership practices currently.

Your Perceptions Before Participating in Minnesota Principals Academy

What was your position/title and school at the time you started Minnesota Principals Academy?

_____

PLEASE READ: *The following prompts ask for your perception of your confidence in your ability to engage effectively in various leadership practices. As you respond to these prompts consider the context of the school you were in at the time. In other words, given the staff, students, families, curriculum, assessments, time available, work demands, and other contextual factors you were facing at that time, what was your confidence in your ability to engage effectively in the given leadership practice?*

How confident were you in your ability to effectively engage in each of the following leadership practices immediately prior to your participation in Minnesota Principals Academy?

No confidence (1)	Little confidence (2)	some confidence (3)	Moderate confidence (4)	Significant confidence (5)	Complete confidence (6)

1. Model being a learner
2. Garner widespread staff acceptance of school goals for improving student learning
3. Ensure individualized support is provided to teachers
4. Execute ongoing professional development activities which facilitate teachers' beliefs in their abilities to provide effective learning activities to their students
5. Nurture a shared vision for your school for high performance of all students
6. Connect the school to the wider community
7. Use education research to make decisions about the instructional program
8. Work with teachers to implement a system of formative assessments that allows teachers to frequently gauge student learning
9. Support ongoing collaboration among teachers through organizational structures
10. Regularly monitor progress of attainment of school improvement goals
11. Nurture staff beliefs for high expectations of all students
12. Develop trust among staff
13. Periodically monitor progress of staff learning
14. Provide intellectual stimulation to staff
15. Regularly communicate the vision and schoolwide goals with stakeholders
16. Motivate teachers for excellence

17. Build a collaborative culture in the school
18. Be a resource of effective instructional strategies
19. Work with teachers to coordinate curriculum improvement
20. Develop a multi-year plan for school improvement to achieve the vision
21. Build productive relationships with families
22. Regularly provide specific classroom observation feedback to improve instruction
23. Nurture a shared vision for a just, fair, and caring school climate
24. Distribute leadership to others in the school

Your Perceptions Currently

What is your current position/title and school?

_____

PLEASE READ: *The following prompts ask for your perception of your confidence in your ability to engage effectively in various leadership practices. As you respond to these prompts consider the context of the school you are in now. In other words, given the staff, students, families, curriculum, assessments, time available, work demands, and other contextual factors you are facing right now, what is your confidence in your ability to engage effectively in the given leadership practice?*

How confident are you <u>currently</u> in your ability to effectively engage in each of the following leadership practices?

No confidence (1)	Little confidence (2)	some confidence (3)	Moderate confidence (4)	Significant confidence (5)	Complete confidence (6)

1. Model being a learner
2. Garner widespread staff acceptance of school goals for improving student learning
3. Ensure individualized support is provided to teachers

4. Execute ongoing professional development activities which facilitate teachers' beliefs in their abilities to provide effective learning activities to their students
5. Nurture a shared vision for your school for high performance of all students
6. Connect the school to the wider community
7. Use education research to make decisions about the instructional program
8. Work with teachers to implement a system of formative assessments that allows teachers to frequently gauge student learning
9. Support ongoing collaboration among teachers through organizational structures
10. Regularly monitor progress of attainment of school improvement goals
11. Nurture staff beliefs for high expectations of all students
12. Develop trust among staff
13. Periodically monitor progress of staff learning
14. Provide intellectual stimulation to staff
15. Regularly communicate the vision and schoolwide goals with stakeholders
16. Motivate teachers for excellence
17. Build a collaborative culture in the school
18. Be a resource of effective instructional strategies
19. Work with teachers to coordinate curriculum improvement
20. Develop a multi-year plan for school improvement to achieve the vision
21. Build productive relationships with families
22. Regularly provide specific classroom observation feedback to improve instruction
23. Nurture a shared vision for a just, fair, and caring school climate
24. Distribute leadership to others in the school

Impact of Minnesota Principals Academy on Your Leadership Practice

What are some key changes you made to your leadership practice as a result of your participation in Minnesota Principals Academy? What have been the results of those changes?

_____

How were you supported, through Minnesota Principals Academy or in your school/district, in making changes to your leadership practices?

_____

What is one leadership practice you attempted to change in your school context that was not as successful as you hoped? What might be some reasons?

_____

Principal Shared Leadership

Are you currently working in a school district where there is at least one other school principal?

- ○ Yes (1)
- ○ No (2)

This part of the survey examines principals' shared leadership in a school district. As you respond to these prompts consider the group of school principals in your school district right now.

Strongly disagree (1)	Moderately disagree (2)	Slightly disagree (3)	Slightly agree (4)	Moderately agree (5)	Strongly agree (6)

To what degree do you agree or disagree with the following statement about the group of principals in your school district?

1. Principals in my district have the knowledge and skills they need to improve student learning

2. In my district, continuous improvement is viewed by most principals as a necessary part of every job
3. In my district, problems are viewed as issues to be solved, not as barriers to action
4. Principals in my district communicate a belief in the capacity of teachers to teach even the most difficult kids

School Characteristics Information

What geographic region best describes the location of your current school?

- ○ Greater Minnesota (1)
- ○ Suburban (2)
- ○ Urban (3)

What school type best describes your current school?

- ○ Charter (1)
- ○ Traditional (2)
- ○ Private (3)

What school level best describes your current school?

- ○ Early Childhood (1)
- ○ Elementary (2)
- ○ K-8/PreK-8 (3)
- ○ Middle School (4)
- ○ High School (5)
- ○ K-12/PreK-12 (6)

How many students are enrolled in your school currently (please use numbers)?

_____

What percentage of students qualify for free and reduced-price meals at your current school?

- ○ 0-10% (1)
- ○ 11-20% (2)
- ○ 21-30% (3)
- ○ 31-40% (4)
- ○ 41-50% (5)
- ○ 51-60% (6)
- ○ 61-70% (7)
- ○ 71-80% (8)
- ○ 81-90% (9)
- ○ 91-100% (10)

District Characteristics Information

What is the number of students enrolled, K-12, in your current school district (if you are at a charter, please enter the number of students enrolled in your school)

- ○ Less than 1,000 (1)
- ○ 1,001-5,000 (2)
- ○ 5,001-10,000 (3)
- ○ More than 10,000 (4)

What is the total number of schools in your district, including yours (please use numbers)?

_____

Approximately what percentage of the current school principals in your school district have participated in Minnesota Principals Academy?

- ○ 0-25% (1)
- ○ 26-50% (2)
- ○ 51-75% (3)
- ○ 76-100% (4)
- ○ I am unable to determine an approximate percentage (5)

Principal Support Information

Choose an answer that most closely describes your situation.

What type of professional support did you receive regarding your school leadership around the time you participated in MPA?

- ☐ I had the support of a coach. The principal coach was a formal role within the district, or the coach was an outside consultant who was hired specifically to coach one or more principal(s). Coaching involved setting goals, making changes in practice, monitoring, and reflection. I met with the coach approximately monthly (or more). (1)
- ☐ I had the support of my supervisor. In addition to traditional supervisory roles, my supervisor acted as a coach. Coaching involved setting goals, making changes in practice, monitoring and reflection. I met with my supervisor for coaching approximately monthly (or more). (2)
- ☐ I had the support of my supervisor. My supervisor helped me to problem solve various leadership issues I was facing and/or provided feedback and suggestions regarding my leadership practice. I received this support on a somewhat regular basis, approximately monthly. We did not set specific goals related to my leadership practices, create action plans, and monitor them or, if we did, it was in the context of my evaluation and not as part of a coaching role. (3)
- ☐ I had the support of a colleague. My colleague helped me to problem solve various leadership issues I was facing and/or provided feedback and suggestions regarding my leadership practice. I received this support on a somewhat

regular basis, approximately monthly (or more). We did not set specific goals related to my leadership practices, create action plans, and monitor them. (4)

☐ I did not receive support on a regular basis for my school leadership from a formal coach, a supervisor, or a colleague. (5)

How did the support you received affect you as a leader?

_____

Principal Characteristics Information

How many total years, including the current year, have you been the lead principal of a school (please use numbers)?

_____

How many years, including the current year, have you been the lead principal at your current school (please use numbers)?

_____

Are you currently in the same position that you were in when you started Minnesota Principals Academy?

○ Yes (1)

○ No (2)

Gender identity:

_____

Race/Ethnicity (select all that apply)

- [ ] American Indian or Alaska Native (1)
- [ ] Asian (2)
- [ ] Black or African American (3)
- [ ] Hispanic/Latino (4)
- [ ] Native Hawaiian or Other Pacific Islander (5)
- [ ] White (6)

Appendix C

Chart of survey questions by leadership domain

Below are the 24 leadership tasks on which survey participants rated their self-efficacy. They are organized by their corresponding domain. Domain scores reflected the mean self-efficacy ratings on the six tasks identified.

Setting Directions (D1) • Nurture a shared vision for a just, fair, and caring school climate • Nurture a shared vision for your school for high performance for all students • Garner widespread staff acceptance of school goals for improving student learning • Nurture high expectations among staff for performance of all students • Regularly communicate the vision and schoolwide goals with stakeholders • Develop a multi-year plan for school improvement to achieve the vision
Developing People (D2) • Execute a year-long plan of effective professional development activities which facilitate teachers' beliefs in their abilities to provide effective learning activities to their students • Be a resource for pedagogical knowledge • Ensure individualized support to teachers • Provide intellectual stimulation to staff • Model being a learner • Motivate teachers for excellence
Redesigning the Organization (D3) • Build a collaborative culture in the school • Enhance trust among staff • Support collaboration among staff through organizational structures • Distribute leadership to other staff within the school • Build productive relationships with families • Connect the school to the wider community
Managing the Instructional Program (D4) • Work with teachers to implement a system of formative assessments that allows teachers to regularly gauge student learning • Use education research to make decisions about the instructional program • Regularly monitor progress of staff learning • Regularly monitor progress of attainment of school improvement goals • Regularly provide specific classroom observation feedback to improve instruction • Work with teachers to coordinate curriculum improvement

Appendix D

Interview Protocol

Hello! My name is Peter Mau. I am a student in Organization Learning and Policy Development at the University of Minnesota. Thank you for agreeing to answer some questions related to your participation in Minnesota Principals Academy and your school leadership practices.

Do you agree to having this conversation recorded? I am now recording.

I am here to learn about what how MPA has impacted participants' confidence in their ability to effectively engage in school leadership practices. The purpose of this interview is to better understand what supported school leaders' confidence in their ability to effectively engage in school leadership practices. There are no right or wrong answers. I would like you to feel comfortable saying what you really think. Everything you say will be confidential, meaning only myself and my advisor will be aware of your answers, or even aware that I am interviewing you. You can refuse to answer any question, or any part of any question. You can end the interview at any time for any reason. Do you have any questions before we begin?

Brief introductory questions
When did you participate in MPA?
Are you still in contact with any members of your cohort?

Question 1
When you think about the following four areas of school leadership, which one or two did MN Principals Academy most help you build your confidence with? (1) Setting a vision and/or goals for the school, (2) developing your staff (3) managing the instructional program, (4) redesigning the organization.

What do you believe were things that helped you in regard to _____?

- Things about MPA?
- Your school?
- Your district?
- A colleague or supervisor?

Question 2
Did you receive any coaching during the time you were in MPA, or shortly after?

- If yes, please describe that coaching.
    - Who coached you? Supervisor? Colleague? Formal principal coach role? External coach?
    - How would you characterize your relationship?
        - If NOT your supervisor, How, if at all, would the coaching experience have been different if your coach was your supervisor?

- What impact did the coaching have on your confidence to make changes in the school leadership domain(s) you described earlier?

- If no, do you believe having a coach would have helped you better implement components of what you learned in MPA? In what ways?

Question 3

When you think about the experience of your participation in the MPA, what two or three things stand out in those 18 months that helped you the most in growing your confidence to be the most effective leader you could be?