



Principals' sense of efficacy: the influence of the Arkansas Leadership Academy

Denise T. Airola

*Office of Innovation for Education, University of Arkansas,
Fayetteville, Arkansas, USA*

Ed Bengtson

*Department of Curriculum and Instruction, University of Arkansas,
Fayetteville, Arkansas, USA, and*

Deborah A. Davis and Diana K. Peer

*Arkansas Leadership Academy, University of Arkansas, Fayetteville,
Arkansas, USA*

Abstract

Purpose – The purpose of this paper is to examine the relationship between school principals' sense of efficacy and their involvement with the Arkansas Leadership Academy's (the Academy) School Support Program (SSP).

Design/methodology/approach – Data were collected from participating SSP principals to explore differences in mean principal self-efficacy given varied years of participation in SSP. The Principal Self-Efficacy Survey was used to measure the construct of principal self-efficacy of 27 principals participating in the Academy's SSP for low-performing schools.

Findings – The findings suggest that principals of low-performing schools that participated in the Arkansas Leadership Academy's SSP for more years have a stronger sense of leadership efficacy than principals of low-performing schools that are just beginning the SSP. *Post hoc* qualitative data were collected through a focus group discussion to provide insight regarding actual practices that led to increased perceived self-efficacy as a result of participating in the SSP.

Research limitations/implications – This study is highly contextualized to the principals and school systems participating in the SSP, a limited population due to conditions under which schools qualify to participate in the program.

Practical implications – As schools continue to be identified as needing to improve based on accountability measures, external sources of leadership development for the principals leading these schools should be considered as a possible means for increasing their senses of efficacy, and indirectly supporting the potential for improved school performance.

Social implications – The attributes of highly efficacious principals – self-regulating, confident, and calm in difficult situations – may be more critical to leaders engaged in systemic change in low-performing schools where the challenges may be more complex.

Originality/value – There could be a strong argument that the influence of an outside support program might be one strategy to consider when addressing the improvement of low-performing schools through raising leader efficacy.

Keywords Change management, Decision making, Leadership development, Arkansas Leadership Academy, Principal efficacy, Outside support program, School Support Program

Paper type Research paper



The job responsibilities of the school principal have grown over the past several decades. This role augmentation has resulted in an increase of responsibility driven by accountability mandates that has made school leadership one of the most complex

and challenging positions in education today (Crow, 2006; O'Day, 2002). While there is concern that the desirability of being a school leader has waned due to long work hours coupled with inadequate compensation, there is a parallel perception that the role of the principalship has evolved into an expectation that few can be successful in meeting (Pounder and Merrill, 2001). In other words, the principalship has evolved to a role that generally challenges the sense of efficacy in those that are serving as school leaders. Furthermore, having a strong sense of efficacy related to instructional leadership has been found to connect positively with a higher level of role engagement by principals (Federici and Skaalvik, 2011, 2012). Given these insights from past research, increasing the sense of efficacy among school leaders should be considered an important part of leadership development programs.

The purpose of this study is to examine the relationship between school principals' sense of efficacy and their involvement with the Arkansas Leadership Academy's (the Academy) School Support Program (SSP). Efficacy has received sparse attention in the empirical literature addressing leadership (Hannah *et al.*, 2008). More specifically, efficacy has largely escaped the wide range of studies that have been conducted on school leadership to this point (Tschannen-Moran and Gareis, 2004). Given the principles of social cognitive theory that underline the connections between efficacy and job performance (Judge and Bono, 2001; Wood and Bandura, 1989), how leaders feel about their ability to succeed is now more important than ever before; and as McCollum and Kajs (2007, p. 132) suggest, "Efficacy, which is a component of social cognitive theory, is a powerful construct and holds great promise for the development of effective school leaders who face challenging times."

Hannah *et al.* (2008) stated, "Leadership efficacy is a specific form of efficacy associated with the level of confidence in the knowledge, skills, and abilities associated with leading others" (p. 669). As the field of educational leadership looks to the future, understanding efficacy and how to develop or influence the level of confidence in leadership skills will become increasingly important as the role of the principal continues to become more complex and demanding.

How the accountability movement has directly affected school leadership efficacy has not been studied to any great extent; however, there are connections between efficacy, motivation, and goals made by social cognitive theorists (Bandura, 1999). Goal selection seems to play a significant role in the obtainment or development of efficacy as Bandura (1999) suggests; "Goal adoption enlists self-investment in the activity. Once people commit themselves to valued goals, they seek self-satisfaction from fulfilling them and intensify their efforts by discontent with substandard performances" (p. 28). However, principals in the USA strive to meet goals that are often extrinsic in nature – being established by external accountability mandates (e.g. the No Child Left Behind Act of 2001). Externally mandated goals may or may not be seen as obtainable which potentially has an influence on an individual's sense of efficacy. According to Stajkovic and Luthans (1998), "people do not tend to enter into challenging environments that they find to be beyond their perceived capabilities. In fact, they may take actions to avoid being engaged in such endeavors" (p. 253). The principals in this study all find themselves in an environment where they are striving to meet externally mandated goals. According to outcome expectancy theory as explained by Bandura (1997), the degree to which principals perceive their abilities to produce certain outcomes (i.e. mandated goals) has an influence on their sense of self-efficacy. It is the relationship of the work done by the SSP with these principals and their developing a sense of efficacy that this study examines.

The SSP

The Academy's SSP provides professional development (PD) and school improvement services to schools and their districts in Arkansas to enable rapid transformation within district and school systems to meet the goal of ensuring all students have access to and success in achieving college and career readiness. The SSP provides support for a minimum of three consecutive years to schools or school districts that had "School Improvement" status under No Child Left Behind accountability in the state of Arkansas, and more recently "Priority" or "Focus" status under Arkansas's Elementary and Secondary Education Act (ESEA) Flexibility plan (Arkansas Department of Education (ADE), 2012). Prior to 2012 ESEA Flexibility, a school received a status of School Improvement when a school's performance did not meet the adequate yearly progress (AYP) indicator for two consecutive years. The AYP indicator was established by the state in conjunction with the federal guidelines. Each additional year that the school received a status of School Improvement there were additional sanctions ranging from deferment of programmatic funds to state-directed restructuring of the school which may have involved the removal of existing personnel (ADE, 2012).

Under Arkansas's approved ESEA Flexibility plan schools were designated as Priority Schools if performance in mathematics and literacy was among the lowest 5 percent of schools' performance. Schools were designated as Focus Schools if the gap in performance of educationally at-risk students, Targeted Achievement Gap Group (TAGG), and students not educationally at-risk was among the 10 percent of schools with the largest gaps. TAGG students are students with educational risk factors due to poverty, English learner status, and/or student with disabilities status (ADE, 2012).

As indicated in Arkansas's ESEA Flexibility Request, "Priority Schools have persistent, systemic improvement needs that are evidenced in academic expectations and school culture, as well as instructional, leadership and community engagement practices" (ADE, 2012, p. 88). "Focus Schools have persistent and oftentimes systemic concerns [...]" (ADE, 2012, p. 100). Many school leaders and staff in Priority/Focus Schools are underprepared to lead the rapid turnaround efforts required on their own. These schools may have persistent obstacles in organizational culture and climate that are difficult to overcome without external mechanisms to facilitate change. Furthermore, Priority/Focus Schools are required to undergo an assessment of the effectiveness of the principal and teaching staff and to replace the principal and/or teaching staff if the assessment finds these individuals to be ineffective and without the potential to develop effectiveness (ADE, 2012). Priority Schools are required to engage the services of an external provider to assist the school in its needs assessment and subsequent development and implementation of a minimum three-year plan for school improvement.

The Academy SSP administers PD as well as a system of capacity-building support that enable schools/districts to engage in meaningful, continuous improvement actions designed to expedite an effective school learning community with commensurate beliefs and practices for high achievement (Arkansas Leadership Academy, 2012). The SSP focusses on building leadership capacity at the school and district levels to support transformational and continuous school improvement. The SSP represents a dynamic form of job-embedded leadership development offered through a capacity-building, supportive structure involving coaching and mentoring that is unique in its design as it targets the building of leadership capacity throughout the school and system. Grounded in empirical research, the SSP combines role-based PD institutes to develop content knowledge/skills with onsite, customized, job-embedded PD to provide coherence and

collaborative structures that enhance adult learning and application of new knowledge and skills within the school/district context. Participation in the Academy's institutes provides partner schools/districts with ongoing, content-rich PD in effective leadership and instructional practices to develop deep knowledge regarding teaching and learning to align instructional systems with the academic rigor and relevance required in Common Core State Standards necessary to ensure all students access and maintain a path to college and career readiness.

The Academy institutes provide PD at all levels of the district and school systems: Superintendent, Central Office, Master Principal Program, Assistant Principal, Deep Knowledge Team, and Teacher Leadership Institutes. Each institute addresses role-relevant content and skills in five Performance Areas: creating and living the mission, vision and beliefs, leading and managing change, developing deep knowledge of teaching and learning, building and maintaining collaborative relationships, and building and sustaining accountability systems. These Performance Areas emerged from the literature base on educational leadership, instruction, and student learning (Leithwood and Jantzi, 2008).

An important component of leadership capacity is leaders' self-efficacy for leadership tasks. The Academy uses learning "tools" to support self-efficacy building through vicarious and mastery learning experiences in the development of leader capacity. Hoy and Woolfolk (1993), Woolfolk *et al.* (2005), and Knoblauch and Woolfolk Hoy (2008) noted the influence of mastery experiences on teachers' efficacy related to student teaching experiences. Just as the "context of the teaching task is paramount in weighing efficacy beliefs" for teachers, the contextual factors of external accountability pressures and persistent low student achievement may have differential impact on the efficacy with which leaders in Priority and Focus Schools approach leadership tasks (Knoblauch and Woolfolk Hoy, 2008, p. 167). The Academy tools are a collection of activity-based teaching/learning tools that integrate important content and process skills learned through vicarious experiences and then applied in mastery experiences within the Priority or Focus Schools' contexts. These tools help leaders engage in learning the deep content of the Performance Areas through active learning followed by reflection with SSP capacity-building leaders (CBs). These tools, used during institute PD to enable leader development through vicarious experiences, are practiced throughout the year in mastery experiences as leaders and their leadership teams engage in the work of improving student learning.

Through the SSP, the Academy collaborates with district/school leaders and staff to providing a system of capacity-building support to affect rapid change in school culture, leadership and instructional behaviors, and potentially, student achievement. The SSP provides support for a minimum of three consecutive years in a gradual release model that enables the school/district to move from explicit support and modeling to self-sustaining structures, processes and strategies within a positive school culture. Highly trained, experienced CBs work alongside school and district leaders to build efficacy and skills in instructional leadership; thus facilitating building leaders' efforts to effect transformational, systemic change in instructional systems within their unique contexts. CBs are onsite weekly to develop and sustain a positive support network for leadership. CBs engage in mentoring, modeling, and facilitation activities at participating schools with the goal of building the leadership capacity of low-performing schools to create and sustain positive effective school cultures.

A strong research foundation supports this holistic approach to school turnaround and continuous improvement. Pervin *et al.* (2012) found that capacity, motivation, and

circumstances interact to impact the success of school leaders in transforming schools. Hargreaves and Shirley (2009) asserted that to achieve long-term, persistent change leaders must attend to coherence, professionalism, and partnerships; the foundational tenets of an effective school culture. Priority and Focus Schools require rapid change that may be achieved through a focus on vertical development-learning that ascends through increasingly complex ways of applying real-time learning to contextual challenges (Petrie, 2011). According to Kegan and Lahey (2009), leaders working in challenging environments must engage in systems thinking, collaborative problem solving, and strategic change facilitation-thinking and behaviors that Fisher and Torbert (2000) found were exhibited in fewer than 8 percent of leaders. Developing skills and competencies of leaders to successfully manage complex change required to transform low-performing schools requires attention to the complexity of the schools' leadership and support systems, a central tenet of the Academy's institutes and SSP.

Theoretical framework

While there is a continued emergence of literature that specifically addresses efficacy in school leaders, to fully understand how leaders gain confidence in their abilities as individuals it is necessary to examine the general literature that addresses efficacy. The theoretical framework for this study addresses social cognitive theory, and more specifically the areas of efficacy, the relationship of efficacy and performance, threat rigidity as a barrier to efficacy, and external support as a source of efficacy.

Social cognitive theory

Social cognitive theory addresses efficacy and human agency through a framework of triadic reciprocal causation (Bandura, 1986, 2001). The reciprocal interaction between behavior, environment, and personal factors contribute to in the sense of efficacy and/or agency that one experiences. The theory behind triadic reciprocal causation suggests that these three factors are not necessarily equal in their reciprocity; however, instead, they interact in ways that suggest that there are dominant factors that exist in any given context of one's sense of agency and efficacy. When the personal factor is dominant, a higher sense of agency or efficacy is present. When the environment dominates the reciprocal relationship, there is often a lower sense of agency. In addition, there is often a higher contribution to the reciprocity by behavior that is dictated, more or less, by the environment.

Furthermore, the environment as one of the three primary factors involved in triadic reciprocal causation can have one of three qualities. Bandura (1999) explains, "The environment is not a monolithic entity. Social cognitive theory distinguishes between three types of environmental structures (Bandura, 1997). They include the imposed environment, selected environment, and constructed environment" (p. 23). These environmental structures are flexible and can change over time. When there is a strong imposed environment (e.g. the educational accountability mandates in the USA), there can be a lack of perceived control belonging to the individual (e.g. school leaders); therefore, a low or non-existent sense of agency may prevail (see Figure 1).

The current mandate of accountability standards with their accompanying sanctions represents an imposed environmental causation factor which many times results in a sense of low agency on the part of school leaders in already low-performing schools as the standard for making progress raised year after year under NCLB and ESEA Flexibility (ADE, 2012). Notice in Figure 1 how the arrows representing influence between the factors are heavier coming from the environmental factor to the

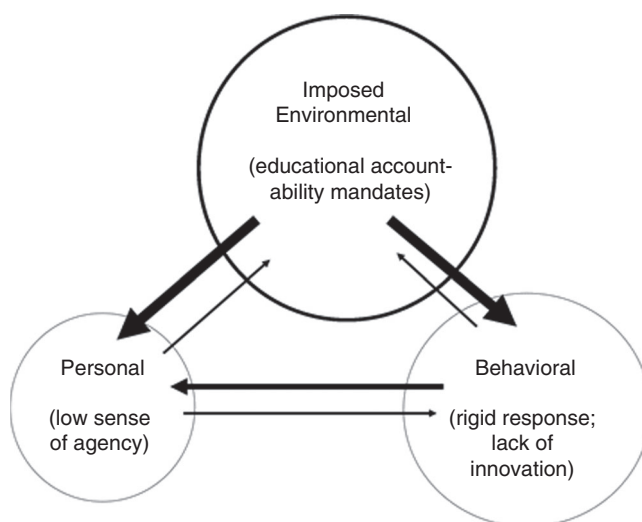


Figure 1. Social cognitive theory's triadic reciprocal causation model applied to low-performing schools where school leaders have low sense of agency

behavior and personal factors. This symbolizes the dominance of the accountability environment as it imposes on the behavioral and personal factors of school leaders. The significance of this theoretical model for this study is undergirded by the relationship between agency and efficacy. According to Bandura (2001):

Efficacy beliefs are the foundation of human agency [...]. Perceived self-efficacy occupies a pivotal role in the causal structure of social cognitive theory because efficacy beliefs affect adaptation and change not only in their own right, but through their impact on other determinants (p. 10).

Efficacy

Self-efficacy is a construct that may be conceptualized as a person's confidence or belief that they can accomplish a task within a particular context given their current skills, knowledge, and resources available. Perceived self-efficacy has been defined "as people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives" (Bandura, 1998, p. 421). The actions of leaders are influenced by their thoughts and beliefs (Leithwood and Steinbach, 1995; Leithwood *et al.*, 1994; McCormick, 2001; Sergiovanni, 1991 as cited in Tschannen-Moran and Gareis, 2004). According to Bandura and Locke (2003), "efficacy beliefs contribute significantly to the level of motivation and performance" (p. 87). Self-efficacy impacts an individual's persistence toward a goal in the face of obstacles (Bandura, 1997; Tschannen-Moran and Gareis, 2004), as "perceived self-efficacy is concerned with judgments of how well one can execute courses of action required to deal with prospective situations" (Bandura, 1982, p. 122).

Early research on the construct of teacher efficacy introduced the notion that contextual factors may influence an individual's level of self-efficacy for a particular task. Hoy and Woolfolk (1993), seeking to differentiate early conceptions of the dimensions of teacher efficacy, found that teachers' level of efficacy for influencing students' learning was related to school climate factors to include a school leader's willingness to use influence with superiors to buffer external factors. Tschannen-Moran and Woolfolk Hoy (2007) described self-efficacy as a "motivational construct based on self-perception of competence

rather than actual level of competence” (p. 946). In an examination of antecedents of self-efficacy beliefs, they found mastery experiences “made the strongest contribution to self-efficacy judgments” (p. 954) with novice teachers demonstrating a greater impact of mastery experiences on self-efficacy than career teachers.

The examination of the sense of efficacy held by school leaders has highlighted the importance of confidence in meeting the challenges produced by the increasingly high-stakes educational environment. Lyons and Murphy (1994) found that highly efficacious principals used personal, internal resources in their leadership roles when confronted with challenges. They were described as self-regulating, confident, and calm in difficult situations. These attributes of highly efficacious principals may be critical to leaders engaging in systemic change to improve student outcomes, and perhaps more so in persistently low-performing schools where the challenge of changing school culture is a prerequisite to improving student academic achievement. Resilience and persistence in the face of obstacles represent desirable qualities in leaders charged with change in schools at the lowest extreme of student performance. Tschannen-Moran and Gareis (2004) suggested that principals weigh the challenge of particular leadership tasks against existing personal and other resources that may enable completion of tasks within specific contexts.

An interesting finding by Smith *et al.* (2006) indicated that principals in low-performing schools tend to have a high sense of efficacy in relation to instructional matters; however, study participants acknowledged that a vast majority of their time was spent addressing managerial duties and issues as opposed to instructional issues. Dimmock and Hattie (1996) found that when restructuring schools, principals with a high sense of efficacy felt they could manage change successfully. Furthermore, Dimmock and Hattie (1996) found “Those principals who considered they were likely to retain leadership in the future were those who had the highest self-efficacy” (p. 73) – a finding that perhaps has significance related to school leader attrition concerns.

Efficacy and performance

Establishing a link between efficacy and performance is imperative for identifying the significance of this study. The SPP’s influence of school leader efficacy may be seen as insignificant unless there is a possible relationship between leader efficacy and performance. In Arkansas schools, leaders are seen as high performing when student achievement scores are high or are improving. Likewise, when schools as a whole perform well on student achievement tests, the organization (i.e. school or system) is seen as a high performing. Efficacy has been found to have a positive relationship with job performance (Judge and Bono, 2001) and with organizational performance (Wood and Bandura, 1989). Therefore, we are looking at efficacy as being an important trait to have for principals leading Arkansas schools as they attempt to improve the performance of their organizations.

While Judge and Bono (2001) linked efficacy to job performance and Wood and Bandura (1989) linked efficacy to organizational performance, we view job performance and organizational performance to be tightly woven together in the context of principals leading schools in Arkansas. School (i.e. the organization) performance is measured by student achievement and principal job performance is becoming increasingly tied to instructional leadership behaviors that promote, enhance, and result in improved student academic performance (Louis *et al.*, 2010). Louis *et al.* found impact of school leaders on student academic performance through their influence on the motivation and working conditions of teachers within their building. Bruggencate *et al.* (2012) found that school

leader behavior impacted student outcomes indirectly, by affecting mediating variables. Specifically, the development orientation of principals had an indirect effect on increasing promotion rates. Development orientation was characterized by fostering of cooperation, professionalism, and innovation. Given the effect of principals on mediating factors that affect student achievement, and using both Judge and Bono's (2001) and Wood and Bandura's (1989) theories that tie high efficacy to high job and organizational performance, we further theorize that the PD that the SSP provides to Arkansas principals in low-performing schools enhances their efficacy which enhances their ability to influence teacher motivation and working conditions; thus, increasing student performance (see Figure 2).

Threat rigidity as a barrier to efficacy

Change theorists suggest that an important ingredient in any change process is to establish a sense of urgency (Kotter, 1995; Zimmerman, 2006). Establishing a sense of urgency from within the organization by creating an autogenic crisis (Barnett and Pratt, 2000) is considered to be an essential act of leadership if members of that organization are going to be pliable or amenable to change (Wagner, 2001). However, when the sense of urgency originates from an external source that specifies penalties for not changing, often attempts at change fail (Zimmerman, 2006).

In the educational accountability era, the external threat experienced by many low-performing schools is the set of consequences delineated in the laws, rules, and regulations that govern them. These threats (e.g. closing schools, replacing administrators, replacing teachers, etc.), are more often than not seen as punishments that are done to schools as a result of low student achievement if they do not change the way they operate, the way they conduct daily matters, and the manner in which their students perform on the standardized assessments sanctioned by the state and/or the federal government (Daly *et al.*, 2011; Farkas *et al.*, 2003). For example, Priority and Focus Schools in Arkansas are subject to specific sanctions based on state-directed assessment of schools' needs. These sanctions may include leader removal or reassignment depending upon whether the leader is determined to be effective, or capable of being developed into an effective leader (ADE, 2012). Additionally, principals retained in Priority Schools are expected to impact the effectiveness of their teachers or replace them.

Organizations that perceive being threatened by outside forces often operate through contrived responses resulting in a climate or culture driven by threat rigidity. The theory of threat rigidity postulates that when organizations are under stress, there is a narrow and focussed response that often leads to further unchanging operations (Staw *et al.*, 1981). In school settings, where schools that have been identified as needing improvement through the mandates of accountability, threat rigidity results in a lack of open communication, a decrease in innovative thought, and an absence of collaboration between building leaders and district office leaders (Daly *et al.*, 2011). Using a sample of 549 principals in

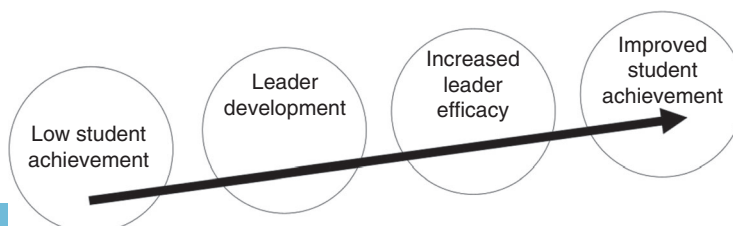


Figure 2. The theory of change in student achievement once leadership efficacy is increased through leader development

California, Daly *et al.* (2011) found that principals in schools that were labeled needs improvement under the No Child Left Behind mandate exhibited a lower sense of self-efficacy and identified an increased threat rigidity response in their schools. Furthermore, Daly *et al.* (2011) offered, “Persistent ‘failure’ to improve performance within a district that is perceived to be responding in a threat-rigid manner may also impact a leaders’ [*sic*] belief in his/her ability to lead change and thus limit effectiveness” (p. 173).

External support: tipping the triadic reciprocal causation balance

External support is more influential than intrinsic sources or directives in the developing of a sense of efficacy in school leaders (Leithwood and Jantzi, 2008; Osterman and Sullivan, 1996; Tschannen-Moran and Gareis, 2005). According to Leithwood and Jantzi (2008), “The efficacy of school leaders, it would seem, arises less from direction and inspiration and more from the aligned and supportive nature of their working conditions” (p. 521). Tschannen-Moran and Gareis (2005) identified the interpersonal support from six sources: superintendent support, central office support, teacher support, staff support, parent support, and student support as potentially having a positive effect on higher levels of self-efficacy among principals. It is the external capacity-building support of school leaders provided through the Academy’s SSP and its relation to the efficacy levels of principals that is the focus of this study.

The SSP does not only provide an external capacity-building support to school leaders. One of the primary emphases of the SSP is to increase the leadership capacity of the school and school system which in turn leads to additional interpersonal support suggested by Tschannen-Moran and Gareis (2005). By increasing the leadership capacity in low-performing schools, the sense of collective efficacy will be increased among school personnel, resulting in a raised level of individual self-efficacy. By doing so, the relationship between the factors in the triadic reciprocal causation model will shift (see Figure 3) and the potential for impacting student achievement via improved teacher motivation and work conditions, among other benefits is increased.

Notice the difference between Figures 1 and 3. The relationship between the causation factors have shifted with the personal factor being dominant and the environmental factor now being constructed rather than imposed. The different sizes of arrows indicate possible shifts in the magnitude of influence that each factor has on the others.

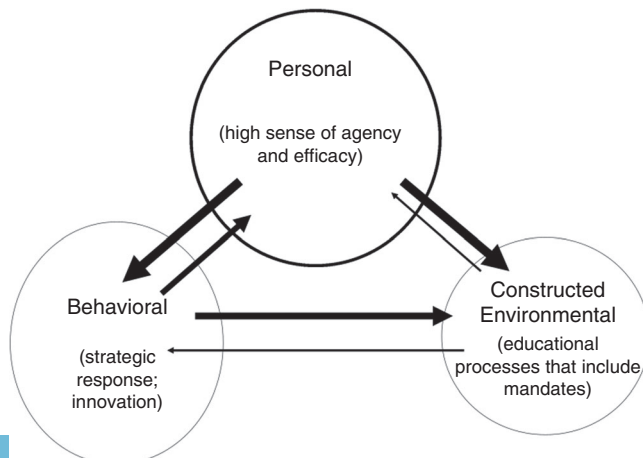


Figure 3. Social cognitive theory's triadic reciprocal causation model applied to low-performing schools where school leaders have high sense of agency and efficacy

By building leadership capacity through the SSP, school leaders develop a greater sense of efficacy that will allow them to construct their environment more so than react to their environment through strategic planning to meet accountability mandates and engage in risk-taking through innovative approaches. This, by no means, suggests that school leaders with a high sense of efficacy disregard the accountability mandates; however, it does suggest that school leaders see the accountability mandates as part of their environment – not their total environment.

Hypotheses

Therefore, a central hypothesis of the SSP is that leadership efficacy will increase as a result of principal development through participation in SSP capacity-building support and PD. As a result of that increase, there will be a change in school performance as measured by student achievement scores on standardized tests. Formal hypotheses for this paper are provided below:

- H1.* Among SSP principals, those that participated in at least one year of PD through weekly SSP capacity-building support have significantly higher self-efficacy for leadership tasks compared to principals that have not participated in at least one year of the PD and capacity-building support of SSP.
- H2.* Principals with two years of SSP will have higher leadership efficacy levels than principals with one or fewer years as measured by Principal Self-Efficacy Survey (PSES).

Methods

Data were collected from participating SSP principals to explore differences in mean principal self-efficacy given varied years of participation in SSP.

Participants

Participants for this study were 27 principals participating in the Academy's SSP for low-performing schools. While this is a low number of participants, it should be noted that at the time of the study there were a total of 27 principals involved with SSP. Therefore, it is a comprehensive sample of principals experiencing the SSP initiative. At the beginning of the study two-thirds of principals had been participating in PD and capacity-building support through SSP for one or two years. A third cohort of principals was beginning participation in SSP. The principals were grouped in cohorts by the level of participation in the SSP. Cohort 1 leaders were beginning their third year of the SSP, Cohort 2 leaders were beginning their second year of the SSP, and Cohort 3 leaders were beginning their first year of the SSP. Principals were asked to complete the PSES in October 2011 and again in May 2012. Of the 27 principals completing the survey in October 2011, only 15 provided completed survey responses in May 2012. Therefore, this study is limited to the investigation of initial differences in SSP principals' self-efficacy based on the number of years the principal participated in the SSP.

Instrument

The PSES (Tschannen-Moran and Gareis, 2004) was used as the instrument for measuring levels of leadership efficacy. Tschannen-Moran and Gareis (2004) developed the PSES to measure the construct of principal self-efficacy. The PSES was adapted from the Teacher Self-Efficacy Survey developed by Tschannen-Moran and Woolfolk Hoy (2001).

The PSES is comprised of 18 items. Factor analysis conducted by Tschannen-Moran and Gareis (2004) resulted in three factors associated with three subscales:

- (1) Management Efficacy (factor loadings, 0.53-0.82);
- (2) Instructional Leadership Efficacy (factor loadings, 0.45-0.81); and
- (3) Moral Leadership Efficacy (factor loadings, 0.42-0.78).

The cumulative variance explained by their three-factor model was 59.64. The authors investigated construct validity using instruments for work alienation ($r = -0.45$, $p < 0.01$), trust in teachers ($r = 0.42$, $p < 0.01$), and trust in students and parents ($r = 0.47$, $p < 0.01$).

Statistical analysis

The Kruskal-Wallis test was conducted to evaluate $H1$ for each subscale of the PSES with SSP cohort as the independent or between-groups variable using the NPAR1WAY procedure in SAS® 9.2 to determine whether cohort mean differences were statistically significant for each subscale of the PSES. The Kruskal-Wallis test is the nonparametric alternative to the parametric one-way Analysis of Variance and particularly useful when parametric methods are limited by extremely small sample size, skewness, or scant values (Decker, 2000; Hobbs, 2009; Narayanan and Watts, 1996). The principals in this study comprise the small population of leaders participating in the SSP for varying durations. Given this small population the assumption of normality is not tenable. Thus, a distribution-free method was selected. Assumptions were tenable for the use of the Kruskal-Wallis test. When sample sizes are small p -value estimates may be biased. The SAS® Exact option may be used to derive exact p -values; however, Hobbs (2009) offered a less resource intensive solution. The Monte Carlo option was used with the Exact option providing 10,000 simulated samples to estimate p -values for the Exact test (Hobbs, 2009).

The use of Kruskal-Wallis nonparametric test changes the statistical null hypothesis. Rather than testing for identical means ($H0: m_1 = m_2 = m_3$), this test evaluates whether the three distribution functions are equal ($H0$). Alternately, $H1$ is that at least one of the populations has a different distribution (location of median value) and tends to yield higher or lower values than one of the other populations (Decker, 2000; Hobbs, 2009; Narayanan and Watts, 1996). Cramer's V Coefficient was calculated as a measure of association for significant test results (Cramér, 1999).

$H2$ was evaluated using the Jonckheere-Terpstra (JT) test for ordered alternate hypotheses. The JT test is useful in situations where an ordered or directional inference is hypothesized (Hobbs, 2009). $H2$ reflects the alternate hypothesis that increased duration of participation in SSP is associated with higher leadership efficacy levels. Given the small number of principals, the Monte Carlo estimates of the Exact test were obtained for the JT test.

The Wilcoxon rank-sum test with the Bonferroni correction was used to evaluate significant pairwise differences following a significant χ^2 from the Kruskal-Wallis test (Pappas and DePuy, 2004). α for pairwise significant differences was set at 0.0167. Effect size (r) was calculated for significant pairwise contrasts using the following equation:

$$r = Z/\sqrt{N} \quad (1)$$

Effect size provides a standardized measure of the magnitude of the differences.

Results

A Kruskal-Wallis test was conducted to evaluate the differences in leadership efficacy among three cohorts of school principals participating in the SSP. The PSES was used to measure leadership efficacy. Cohort 1 principals had completed two years of PD and capacity-building support through SSP at the time of completing the PSES. Cohort 2 principals had completed 1 year of SSP and Cohort 3 principals completed the PSES at the beginning of their first year of SSP. The test was significant for the subscale Instructional Leadership Efficacy with $\chi^2_{(2, n=27)} = 8.27, p = 0.01$. The Monte Carlo estimated confidence interval was $0.00 \leq p \leq 0.02$. The Cramer's V Coefficient indicated a strong association between cohort (number of years in SSP) and Instructional Leadership Efficacy ($V = 0.72$). Results for the Kruskal-Wallis test are summarized in Table I.

The JT test resulted in a significant value (JT = 57.00, $Z = -2.86$, MC estimated Exact p -value 0.001). Wilcoxon rank-sum tests were conducted to evaluate pairwise differences among the cohorts for the significant Kruskal-Wallis test for Instructional Leadership Efficacy using the Bonferroni adjusted (0.05/3 analyses) α level of 0.0167. Results are reported in Table II.

The means, standard deviations, minimum, and maximum values for each cohort and PSES subscale are provided in Table III. Cohort 1 principals (SSP for two years)

PSES subscale	χ^2	p -value	MC estimate*	99% CI*
Management Efficacy	1.85	0.40	0.42	0.41, 0.43
Instructional Leadership Efficacy	8.27	0.02	0.01	0.01, 0.02
Moral Leadership Efficacy	5.12	0.08	0.06	0.06, 0.08

Note: *MC p -value estimate for Exact test

Table I.
Kruskal-Wallis summary table for principal self-efficacy survey subscales by cohort

Pairwise contrast	T	Z	One-sided p -value	r
Cohort 1 and Cohort 2	104.50	0.80	0.21	0.15
Cohort 1 and Cohort 3	131.00	2.50	0.01	0.48
Cohort 2 and Cohort 3	95.50	2.22	0.01	0.43

Table II.
Wilcoxon rank-sum test summary table: Instructional Leadership Efficacy pairwise contrasts

Cohort	n	M (SD)	Minimum	Maximum
<i>Management Efficacy</i>				
Cohort 1	10	6.75 (1.05)	5.50	8.33
Cohort 2	8	6.50 (1.33)	4.50	8.00
Cohort 3	9	5.94 (1.17)	4.33	7.50
<i>Instructional Leadership Efficacy</i>				
Cohort 1	10	7.47 (0.80)	6.33	9.00
Cohort 2	8	7.21 (0.45)	6.50	7.83
Cohort 3	9	6.48 (0.63)	5.83	7.67
<i>Moral Leadership Efficacy</i>				
Cohort 1	10	7.57 (0.73)	6.50	8.67
Cohort 2	8	7.56 (0.75)	6.00	8.50
Cohort 3	9	6.96 (0.58)	6.00	7.67

Table III.
Mean principal self-efficacy survey scores by cohort and subscale

demonstrated the highest means efficacy levels in each subscale, whereas Cohort 3 principals (beginning SSP) demonstrated the lowest mean efficacy levels in each subscale. The JT test results support an ordered inference for Instructional Leadership Efficacy – principals with more years of SSP have higher levels of efficacy. The paired comparisons revealed the differences between Cohort 1 and Cohort 3 principals’ Instructional Leadership Efficacy levels are statistically significantly higher as indicated in Table II. Cohort 2 principals’ Instructional Leadership Efficacy approached a statistically significantly difference.

Effect sizes provide a standardized measure of the magnitude of the effect observed in the data. Effect size provides a measure of the meaningfulness of the statistical differences. The effect sizes (r) indicate a strong efficacy response from principals with two years of SSP compared to the efficacy response of principals with only one year of participation in SSP (Cohort 3 to Cohort 2, $r = 0.43$). A stronger efficacy response is observed between principals with two years of SSP compared to principals beginning in SSP (Cohort 3 to Cohort 1, $r = 0.48$). The effect on efficacy response for principals completing one year of SSP compared to principals beginning in SSP is small (Cohort 2 to Cohort 1, $r = 0.15$). A visual representation of the comparative means is provided in Figure 4.

The findings above spurred further questions that called for the exploration of the actual causes of the increase of self-efficacy of the participating principals. What, specifically, did the SSP experiences provide that may have caused an increase in the perceived self-efficacy of school leaders? Answering this query required a qualitative investigation that involved an open discussion. The discussion was conducted as a focus group via conference call and the comments and perceptions of the participants provide some insight regarding actual practices that led to the increase of perceived self-efficacy; thus, providing a possible bridge between theory and practice. Three themes emerged from the analysis of the focus group discussion

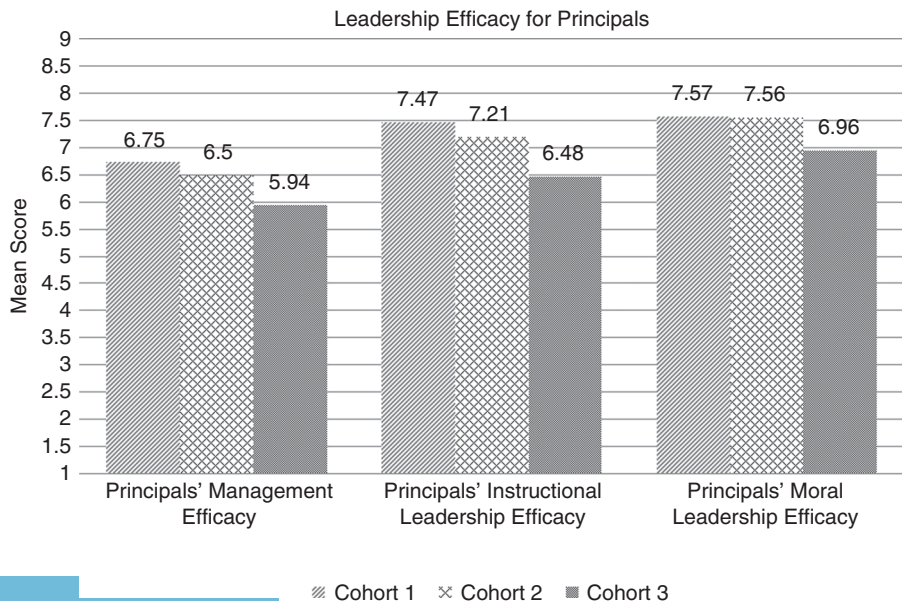


Figure 4.
Mean self-efficacy scores for the PSES subscales by cohort

transcript: the job-embedded nature of the SSP; the sharing of the leadership role; and establishing the necessary focus to improve schools.

Principals' sense
of efficacy

"They became one of us"

The SSP capacity builders became embedded in the school as a member of the staff. The nature of the work that the SSP personnel required that they understood, experienced, and became part of the organizational culture of the school. A deep knowledge of context was developed over time through repeated interaction with school administrators, teachers, and staff. One elementary principal offered:

They [SSP personnel] were in my building every week as a critical friend, as someone there to support, as someone there to provide resources, to provide professional development, to be another set of eyes and ears. They bonded with my staff – actually they just became a part of who we were. I mean they were just in the building and they were part of who we were. They became a part of our professional learning communities and part of our professional development, and they were a part of who we were.

This submersion into the context of each individual school culture could very well positively impact the development of the sense of efficacy, as SSP personnel were able to understand those barriers to efficacy (e.g. poverty, low parent involvement, etc.) that were context-driven as Hoy and Woolfolk (1993) suggest. In addition, the extended time immersed in the organization alleviated any concerns that teachers might have had regarding an outside entity coming to evaluate their performance as one high school principal explained:

I think initially the people in the building thought this is something being done to us. It's the Boogey man, it's the State Department coming down here to [evaluate us]. Dr Goodman really just became part of our staff before it was all said and done. I guess it's good to have that expert who travels more than 50 miles. You have somebody come in from the outside that says some of the same things, or supports you. She was skillful in letting people develop ideas and dragging us along.

Tying back into the threat rigidity thesis of Staw *et al.* (1981), the longevity of the SSP involvement with schools helped create an open willingness to change compared to a more rigid response that might have occurred if the SSP were perceived as a threat to the organization. The "becoming one of us" created a culture of trust and mutual understanding of what needed to be done in relation to turning around a failing school; thus, contributing to the efficacy of the principals charged with improving their schools performance.

Sharing of the leadership role

A main emphasis of the SSP was the building and expanding the capacity of the principals and their fellow educators. One principal pointed out that it was the involvement with the Academy and the SSP "built capacity within the leadership team and the teachers." This was done by the SSP providing a "kind of blue print or kind of structure to delegate responsibility." Another principal shared:

I think the SSP helped me out in that they really kind of took on and helped out my facilitators, my assistant principals, and taking on a little bit of that instructional piece. So, even though I was in touch and involved with all of that, but that freed me up a little bit to work on getting all of those resources in place, do you know what I mean? They were really there to work on the professional development, PLCs, all that kind of stuff. Like I said, I was very involved in all of that and knew what was going on, but I couldn't be at every

professional learning community meeting. Of course, I was there in the middle of the planning and everything, and you know disaggregating data and the leadership team. I was involved in all of that, but sometimes the support person would be right there in a meeting when maybe I could have not been.

The SSP's development of leadership capabilities among teachers and other administrators helped principals concentrate on areas of concern that might have otherwise gone un-attended. As an elementary principal who had not had prior experience working with at-risk student populations explained:

I had not been in a school of high poverty. I was going into a completely different situation than I have ever been in. So, my learning curve was really high, and I had to learn a lot really fast. Having that support [SSP] there really helped. As I said, my learning curve was really high. I had to learn about a different school culture – it had to do with student population, about student needs.

Principals in this study openly admitted that they still struggled with the workload that their positions presented. In general, they still had a difficult time finding the time to complete all of the tasks that required their attention. However, they also identified the support provided by the SSP as being beneficial in assisting them in accomplishing the most important aspects of the job.

According to the participants the SSP built capacity using two main strategies: the establishment of a shared language; and the construction of a tool box of school improvement strategies. As one elementary principal explained, “the support provided some tools that focussed on learning and student achievement.” Tools ranged from how to facilitate meaningful and productive meetings to working with data to insure sound decisions were being made to improve student achievement. Examples of SSP involvement were offered by an elementary principal:

I can tell you a couple of things that were facilitated by my school support person. One was a parent thing. We worked together to get parents in and how to function. That was really hard because we didn't have a lot of parent involvement. There was a carousel activity just to get their perceptions and interest about school and about their needs and how the school can meet their needs, so that was a really successful piece and had a lot of good input from parents. Another piece that was really, really good was the strategic planning process my first year there, but we went back after two, well every year we revisited it, the third year we really went back to core beliefs again. We went back through the whole process again at the beginning of the year, and did a really thorough job with that and that was very successful. I had staff members come back and say that's one of the best things we have ever done.

It was through these types of activities that a common language among the school community was established, resulting in a shared focus for school improvement.

Focussing on instruction and learning

Participants consistently mentioned the support they received in terms of maintaining a focus on instruction and learning through persistent conversations about teaching and learning and the development of genuine professional learning communities. One participant found the critical friend aspects of the SSP involvement to be valuable:

That critical friend process is just so important. Having someone else there – especially when you are trying to improve a school – having that other set of eyes on what needs to be done. Especially, when there is so much that needs to be done.

When asked if they felt a greater capability of maintaining a focus on what was important, a high school principal replied, "Yes sir, I had no choice. I had a weekly meeting scheduled that we talked about the learning and what was going on in the building and building capacity in the leadership team and all those things." A major form of support from the SSP was identified as "just being here and continuously keeping our focus on what was important."

Participants agreed that the skills and knowledge that they gained from their experiences with the SSP increased their sense of efficacy, particularly in the areas of strategic planning, facilitating meaningful professional learning communities, and maintaining a focus in student learning. Even those principals who no longer were involved with the SPP admitted that they felt more capable in their work in relation to improving their school.

Discussion

This paper presents an investigation into the relationship between the efficacy of principals and their participation in a PD and support program designed to build capacity and turn around low-performing schools. The findings suggest that principals of low-performing schools that participated in the Academy's SSP for longer periods have a stronger sense of leadership efficacy as compared to principals of low-performing schools that are just beginning the SSP. Specifically, Principals' Instructional Leadership Efficacy as measured by the PSES is significantly higher. Furthermore, the results suggest the longer principals are involved with the SSP, the higher their sense of efficacy for instructional leadership.

Based on the theoretical assumption that efficacy is related to human agency and thus, job performance (Bandura, 1997), this study suggests that when a focussed attempt to build leadership capacity in a school or school system takes place, a greater sense of leadership efficacy will occur. Furthermore, this study describes the effect on efficacy by an external provider (i.e. the Academy) that is unique in both its structure and delivery of job-embedded PD for school leaders; specifically, the use of PD institutes to build principals knowledge and skills through vicarious experiences, interspersed with mastery experiences within the local school context wherein principals are expected to apply their learning and reflect on the effectiveness of their experiences while receiving support for their efforts from SSP CBs. The literature on high-quality school leadership that makes a difference in the performance of schools can be informed by this study as efficacy in school leadership becomes increasingly more important.

The results are particularly promising in the current policy landscape. Many school leaders in persistently low-performing schools are underprepared to lead ambitious turnaround efforts required under recent federal policy initiatives (United States Department of Education, Office of School Turnaround, 2011; United States Department of Education, 2012). Instructional Leadership Efficacy – principals' confidence in their ability to bring personal resources to the leadership tasks of managing complex change, motivating teachers, creating a positive learning environment, and facilitating student learning and improved achievement – is critical to the potential for leaders to effect rapid transformation of low-performing schools. Involvement of the principal in PD and capacity-building support through SSP's capacity building teams that originate from outside the system and undertake a systemic approach to school improvement may assist in the development of a greater sense of efficacy among school principals for accomplishing these important instructional leadership tasks.

Implications

While this paper represents the initial stages of a longer research effort, it does encourage further dialogue about how to develop a sense of efficacy in school leaders. The idea that outside support like the SSP might have a positive effect on school performance as an intervention that combats threat rigidity through increasing school leader efficacy is intriguing. Figure 5 shows the potential hypothesized effect of the SSP as a useful intervention.

If building leadership capacity throughout the school and system through the use of SSP strategies does increase leadership efficacy, then it might be feasible to tie SSP involvement with school improvement. This, we consider to be a major implication for future research. Therefore, further work will include an examination of the performance of the schools and school systems in this study as it may or may not relate to the increased sense of efficacy of principals.

A second significant implication of this study is the possible relationship between levels of self-efficacy in principals and the nature of the response of the organization to the external mandates that exist today. School leaders' potential to impact student achievement is primarily through mediating factors such as teacher motivation and working conditions, or a development orientation toward organizational leadership (Bruggencate *et al.*, 2012; Louis *et al.*, 2010). Leader actions in affecting teacher motivation, cooperative and positive working conditions, and innovation in the face of persistent low achievement may challenge principals' sense of self-efficacy. Because of the relationship established between threat rigidity and efficacy (Daly *et al.*, 2011) and the established idea that threat rigidity inhibits organization performance (Staw *et al.*, 1981), the intervention

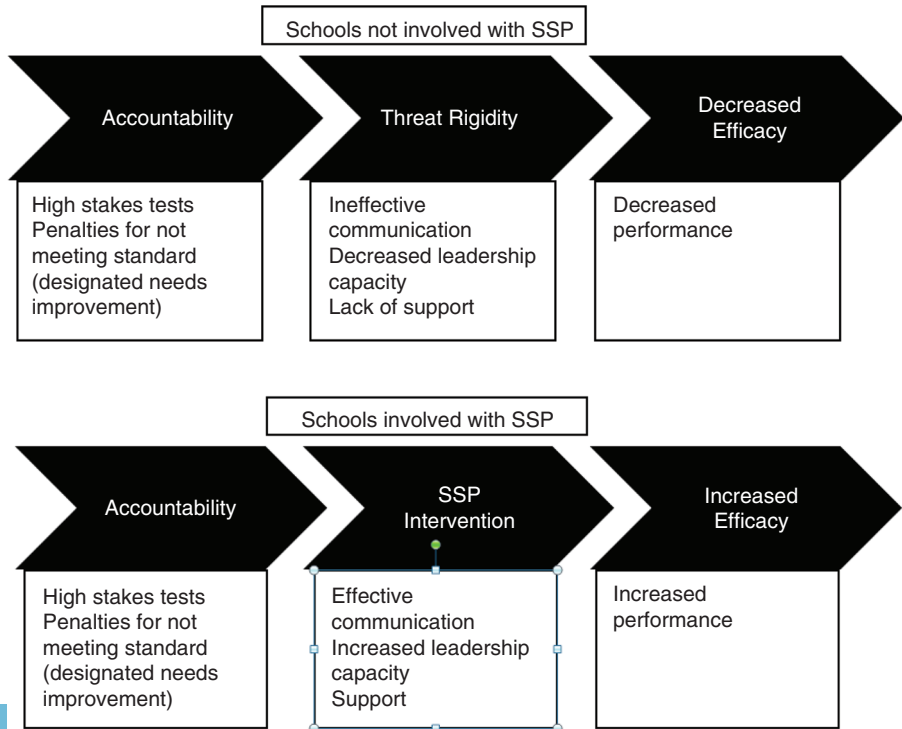


Figure 5. Depiction of hypothesized effect of the SSP intervention

of the SSP in low-performing schools may be seen as a possible solution to improving performance in low-performing schools.

Principals' sense
of efficacy

Conclusion

This study indicates that the Academy's SSP may have a positive influence in the development of the sense of efficacy in school principals. While the process of school improvement is complex and finding a specific cause for that improvement is complex, the findings of this study might suggest a link to the amelioration of both school and system performance. It is recognized that this study is highly contextualized to a group of 27 principals and their systems' experiences with the SSP. Part of this contextualization involves the uniqueness of the SSP as an external provider of development focussed on building leadership capacity.

An additional limitation is the not accounting for other variables that might have come into play in increasing the level of the participants' sense of efficacy. For example, the findings show that as each participant had more experience with the SSP, their efficacy seemed to grow. However, with each year in the SSP there was also another year of experience as a leader which could be a contributor to a higher sense of efficacy. Without a control comparison group, it is difficult to isolate the effect of the SSP.

However, if further studies examining the SSP reveal continued progress in promoting school and system improvement, there could be a strong argument that the influence of an outside support program such as the SSP might be one strategy to consider when addressing improving low-performing schools through raising leader efficacy.

References

- Arkansas Department of Education (ADE) (2012), "ESEA flexibility request", available at: www.arkansased.org/public/userfiles/ESEA/AR_ESEA_Flexibility_Amended_10252012.pdf (accessed June 10, 2013).
- Arkansas Leadership Academy (2012), *School Support Program External Provider Application*, unpublished handbook, University of Arkansas, Fayetteville, AR.
- Bandura, A. (1982), "Self-efficacy mechanism in human agency", *American Psychologist*, Vol. 37 No. 2, pp. 122-147.
- Bandura, A. (1986), *Social Foundations of Thought and Action.*, Prentice Hall Inc., Englewood Cliffs, NJ.
- Bandura, A. (1997), *Self-Efficacy: The Exercise of Control*, W.H. Freeman and Company, New York, NY.
- Bandura, A. (1998), "Self-efficacy", in Friedman, H.S. (Ed.), *Encyclopedia of Mental Health*, Vol. 3, Academic Press, New York, NY, pp. 421-432.
- Bandura, A. (1999), "Social cognitive theory: an agentic perspective", *Asian Journal of Social Psychology*, Vol. 2 No. 1, pp. 21-41.
- Bandura, A. (2001), "Social cognitive theory: an agentic perspective", *Annual Review of Psychology*, Vol. 52, pp. 1-26.
- Bandura, A. and Locke, E.A. (2003), "Negative self-efficacy and goal effects revisited", *Journal of Applied Psychology*, Vol. 88 No. 1, pp. 87-99.
- Barnett, C.K. and Pratt, M.G. (2000), "From threat-rigidity to flexibility: toward a learning model of autogenic crisis in organizations", *Journal of Organizational Change Management*, Vol. 13 No. 1, pp. 74-88.
- Bruggencate, G., Luyten, H., Scheerens, J. and Slegers, P. (2012), "Modeling the influence of school leaders on student achievement: how can school leaders make a difference?", *Educational Administration Quarterly*, Vol. 48 No. 4, pp. 699-732.

- Cramér, H. (1999), *Mathematical Methods of Statistics*, Princeton University Press, Princeton, NJ.
- Crow, G.M. (2006), "Complexity and the beginning principal in the United States: perspectives on socialization", *Journal of Educational Administration*, Vol. 44 No. 4, pp. 310-325.
- Daly, A.J., Der-Martirosian, C., Ong-dean, C., Park, V. and Wishard-Guerra, A. (2011), "Leading under sanction: principals' perceptions of threat rigidity, efficacy, and leadership in underperforming schools", *Leadership and Policy in Schools*, Vol. 10 No. 1, pp. 171-206.
- Decker, C. (2000), "Calculating a nonparametric estimate and confidence interval using SAS® software", paper presented at the SAS® Global Forum, Indianapolis, IN, April 9-12.
- Dimmock, C. and Hattie, J. (1996), "School principals' self-efficacy and its measurement in a context of restructuring", *School Effectiveness and School Improvement*, Vol. 7 No. 1, pp. 62-75.
- Farkas, S., Johnson, J. and Duffett, A. (2003), *Rolling Up Their Sleeves: Superintendents and Principals Talk about What's Needed To Fix Public Schools*, Public Agenda Foundation, New York, NY.
- Federici, R.A. and Skaalvik, E.M. (2011), "Principal self-efficacy and work engagement: assessing a Norwegian principal self-efficacy scale", *Social Psychology of Education*, Vol. 14 No. 4, pp. 575-600.
- Federici, R.A. and Skaalvik, E.M. (2012), "Principal self-efficacy: relations with burnout, job satisfaction and motivation to quit", *Social Psychology of Education*, Vol. 15 No. 3, pp. 295-320.
- Fisher, D. and Torbert, E.B. (2000), *Personal and Organizational Transformations Through Action Inquiry*, Edge/Work Press, Boston, MA.
- Hannah, S.T., Avolio, B.J., Luthans, F. and Harms, P.D. (2008), "Leadership efficacy: review and future directions", *The Leadership Quarterly*, Vol. 19 No. 6, pp. 669-692.
- Hargreaves, A.P. and Shirley, D. (2009), *The Fourth Way: The Inspiring Future for Educational Change*, Corwin Press, Thousand Oaks, CA.
- Hobbs, G. (2009), "Using SAS® for Nonparametric Statistics", paper presented at the SAS® Global Forum, Washington, DC, March 22-25.
- Hoy, W.K. and Woolfolk, A.E. (1993), "Teachers' sense of efficacy and the organizational health of schools", *The Elementary School Journal*, Vol. 93 No. 4, pp. 355-372.
- Judge, T.A. and Bono, J.E. (2001), "Relationship of core self-evaluations traits – self-esteem, generalized self-efficacy, locus of control, and emotional stability – with job satisfaction and job performance: a meta-analysis", *Journal of Applied Psychology*, Vol. 86 No. 1, pp. 80-92.
- Kegan, R. and Lahey, L. (2009), *Immunity to Change: How to Overcome It and Unlock the Potential in Yourself and Others*, Harvard Business School Press, Boston, MA.
- Knoblauch, D. and Woolfolk Hoy, A. (2008), "'Maybe i can teach those kids.' The influence of contextual factors on student teachers' efficacy beliefs", *Teaching and Teacher Education*, Vol. 24 No. 1, pp. 166-179.
- Kotter, J.P. (1995), "Leading change: why transformation efforts fail", *Harvard Business Review*, Vol. 73 No. 2, pp. 59-67.
- Leithwood, K. and Jantzi, D. (2008), "Linking leadership to student learning: the contributions of leader efficacy", *Educational Administration Quarterly*, Vol. 44 No. 4, pp. 496-528.
- Leithwood, K. and Steinbach, R. (1995), *Expert Problem Solving: Evidence from Schools and District Leaders*, State University of New York, Albany, New York, NY.
- Leithwood, K., Begley, P.T. and Cousins, J.B. (1994), *Developing Expert Leadership for Future Schools*, The Falmer Press, London.
- Louis, K.S., Leithwood, K., Wahlstrom, K.L. and Anderson, S.E. (2010), "Investigating the links to improved student learning: final report of research to the wallace foundation", available at: www.wallacefoundation.org/knowledge-center/school-leadership/key-research/Documents/Investigating-the-Links-to-Improved-Student-Learning.pdf (accessed June 15, 2013).

- Lyons, C.A. and Murphy, M.J. (1994), "Principal self-efficacy and the use of power", paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA, April 4-8.
- McCollum, D.L. and Kajs, L.T. (2007), "School administrator efficacy: assessment of beliefs about knowledge and skills for successful school leadership", in Donahoo, S. and Hunter, R.C. (Eds), *Teaching Leaders to Lead Teachers: Educational Administration in the Era of Constant Crisis*, Elsevier, New York, NY, pp. 131-148.
- McCormick, M.J. (2001), "Self-efficacy and leadership effectiveness: applying social cognitive theory to leadership", *Journal of Leadership Studies*, Vol. 8 No. 1, pp. 22-33.
- Narayanan, A. and Watts, D. (1996), "Exact methods in the NPAR1WAY procedure", paper presented at the SAS® Global Forum, Chicago, IL, March 10-13.
- O'Day, J.A. (2002), "Complexity, accountability, and school improvement", *Harvard Educational Review*, Vol. 72 No. 3, pp. 293-329.
- Osterman, K. and Sullivan, S. (1996), "New principals in an urban bureaucracy: a sense of efficacy", *Journal of School Leadership*, Vol. 6 No. 6, pp. 661-690.
- Pappas, P.A. and DePuy, V. (2004), "An overview of non-parametric tests in SAS®: when, why, and how", paper presented at the SAS® Global Forum, Montreal, May 9-12.
- Pervin, B., Connor, M., Leithwood, K., Pedwell, L. and Sun, J.P. (2012), "Ontario leadership strategy and district effectiveness framework", paper presented at the American Educational Researchers Association, Vancouver, April 13-17.
- Petrie, N. (2011), "Future trends in leadership development", available at: www.ccl.org/leadership/pdf/research/futureTrends.pdf (accessed June 20, 2013).
- Pounder, D.G. and Merrill, R.J. (2001), "Job desirability of the high school principalship: a job choice theory perspective", *Educational Administration Quarterly*, Vol. 37 No. 1, pp. 27-57.
- Smith, W., Guarino, A., Strom, P. and Adams, O. (2006), "Effective teaching and learning environments and principal efficacy", *Journal of Research for Educational Leaders*, Vol. 3 No. 2, pp. 4-23.
- Stajkovic, A.D. and Luthans, F. (1998), "Self-efficacy and work related performance: a meta-analysis", *Psychological Bulletin*, Vol. 124 No. 2, pp. 240-261.
- Staw, B.M., Sandelands, L.E. and Dutton, J.E. (1981), "Threat rigidity effects in organizational behavior: a multilevel analysis", *Administrative Science Quarterly*, Vol. 26 No. 4, pp. 501-524.
- Tschannen-Moran, M. and Gareis, C.R. (2004), "Principals' sense of self-efficacy: assessing a promising construct", *Journal of Educational Administration*, Vol. 42 No. 5, pp. 573-585.
- Tschannen-Moran, M. and Gareis, C.R. (2005), "Cultivating principals' sense of efficacy: support that matters", paper presented at the annual meeting of the University council for Educational Administration, Nashville, TN, November 10-13.
- Tschannen-Moran, M. and Woolfolk Hoy, A. (2001), "Teacher efficacy: capturing an elusive construct", *Teaching and Teacher Education*, Vol. 17 No. 7, pp. 783-805.
- Tschannen-Moran, M. and Woolfolk Hoy, A. (2007), "The differential antecedents of self-efficacy beliefs of novice and experienced teachers", *Teaching and Teacher Education*, Vol. 23 No. 6, pp. 944-956.
- United States Department of Education (2012), "ESEA flexibility request", available at: www.ed.gov/esea/flexibility (accessed June 30, 2013).
- United States Department of Education, Office of School Turnaround (2011), "An overview of school turnaround", available at: www2.ed.gov/programs/sif/sigoverviewppt.pdf (accessed May 23, 2013).
- Wagner, T. (2001), "Leadership for learning: an action theory of school change", *The Phi Delta Kappan*, Vol. 82 No. 5, pp. 378-383.

- Wood, R. and Bandura, A. (1989), "Impact of conceptions of ability on self-regulatory mechanisms and complex decision making", *Journal of Personality and Social Psychology*, Vol. 56 No. 3, pp. 407-415.
- Woolfolk, A.E., Hoy, W.K. and Spero, R.B. (2005), "Changes in teacher efficacy during the early years of teaching: a comparison of four measures", *Teaching and Teacher Education*, Vol. 21 No. 4, pp. 343-356.
- Zimmerman, J. (2006), "Why some teachers resist change and what principals can do about it", *NASSP Bulletin*, Vol. 90 No. 3, pp. 238-249.

Further reading

- National Association of Elementary School Principals (NAESP) and National Association of Secondary School Principals (NASSP) (2012), "Rethinking principal evaluation: a new paradigm informed by research and practice", available at: www.naesp.org/sites/default/files/PrincipalEvaluationReport.pdf (accessed May 2013).
- Tschannen-Moran, M., Woolfolk Hoy, A. and Hoy, W.K. (1998), "Teacher efficacy: its meaning and measure", *Review of Educational Research*, Vol. 68 No. 2, pp. 202-248.

About the authors

Dr Denise T. Airola is the Director of the Office of Innovation for Education at the University of Arkansas. Her research focusses on investigating the relationships between teachers' and leaders' collaborative use of data, professional development in educational assessment and data use, educator change, and the impact on student achievement. Dr Denise T. Airola is the corresponding author and can be contacted at: dairola@uark.edu

Dr Ed Bengtson is an Assistant Professor of Educational Leadership at the University of Arkansas. His research focusses on the socialization, succession, and development of teachers and school leaders. He also has research interest in the organizational behavior of schools in response to accountability mandates.

Dr Deborah A. Davis is the Director of the Arkansas Leadership Academy. Her work focusses on developing the leadership capacity of current and future school leaders, transformational and systemic change for struggling schools and leaders, and developing a culture of high expectations for student and adult learning.

Dr Diana K. Peer is the Master Principal Leader for the Arkansas Leadership Academy. Her research focusses on the impact of school leadership development curriculum and learning experiences as demonstrated in changes in the practices of principals and changes in school culture.

Reproduced with permission of copyright owner. Further reproduction prohibited without permission.