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EDUCATIONAL LEADERSHIP & MANAGEMENT | RESEARCH ARTICLE

Leading by example: A case study of the influence of principal self-efficacy on collective efficacy

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Abstract: Self-efficacy is a perceived judgment that one has the ability to execute a course of action that brings about a desired result. Principal self-efficacy describes a set of beliefs that enable a principal to enact policies and procedures that promote the effectiveness of a school. Principal self-efficacy beliefs are also important because they guide the leader's actions and behaviors that affect expectations for students as well as teachers' motivation and school improvement processes. In this qualitative case study, we sought to understand teachers' perceptions of how the self-efficacy beliefs and actions of the principal contributed to the school's collective efficacy. The study featured a single embedded case design highlighting one high poverty rural middle school with very high levels of achievement. While collective efficacy was developed through fidelity to instructional initiatives and relationship building among staff, the efficacy beliefs and actions of the principal influenced the school's collective efficacy by creating a steadfast instructional focus, developing teacher leaders, and leading by example.

Subjects: Education; Teaching Methodology & Practice; Teaching Practice - Education; Secondary Education; Teaching & Learning - Education; Education Studies; Middle School Education; School Leadership, Management & Administration; Classroom Practice; Continuing Professional Development

Keywords: principal self-efficacy; collective efficacy; principal leadership; single case study

ABOUT THE AUTHORS

Tena M. Versland is an assistant professor and the Program Leader for Educational Leadership at Montana State University. Joanne Erickson is faculty emeritus at Montana State University and a former Education Department Head. Our research focus draws inspiration from Bandura's seminal work on self-efficacy and collective efficacy in educational settings, in particular, rural schools. The focus of this article centers on leader self-efficacy and how leader beliefs and actions promote the collective efficacy of the school, and ultimately, student success. Previous studies also examined leader self-efficacy in the context of rural grow your own principal preparation programs, as well as the development of aspiring leaders' self-efficacy during their leadership education program experiences. We feel it is imperative to understand the beliefs and actions of self-efficacious leaders as they relate to developing human capital and the processes that promote high levels of achievement for all students in a school.

PUBLIC INTEREST STATEMENT

We've heard the adage, "it takes a village to raise a child." In a school, it takes a collaboratively focused effort from every educator to insure that all children in that school will have the opportunities they need to learn and grow. We call that collaborative effort, "collective efficacy," or the teachers' beliefs that their efforts as a whole will have a positive effect on students. Collective efficacy has enormous potential to positively influence student growth and level the playing field for students in poverty. We also know that in addition to effective teachers, school principals are also very important to the success of children in schools. This study asks teachers in a high poverty, high achieving school to discuss how collective efficacy was created; and how the beliefs and actions of the school's principal helped to promote educational opportunities that improved teaching and learning and enhanced the school's climate.

1. Introduction

Emily Johnson (pseudonym), a 13-year-old middle school student, lived with her mother and grandmother in a two-bedroom trailer on the outskirts of a rural community. Emily's mother worked two service sector jobs to support the family and pay the grandmother's hospital bills. Emily, like many children in rural America, grew up in poverty. However, unlike many children living in poverty, Emily enjoyed unprecedented scholastic achievement and educational opportunities at her middle school. Emily's school had a principal with high *self-efficacy*, the belief that the principal possessed the capability to structure a course of action to promote school improvement processes. Those efficacy beliefs led the principal to work diligently to create instructional initiatives that would elevate teaching, and in the process, would develop a close, collaborative culture. As teachers worked together to increase their instructional skills, they also developed the belief in their collective ability to organize and execute school-wide tasks that produced high levels of student achievement. At Emily's school, the principal's beliefs and actions influenced teachers' beliefs and actions, thereby creating *collective efficacy*: "a group's shared belief in its conjoint capabilities to organize and execute the courses of action required to produce given levels of attainments" (Bandura, 1997, p. 477). The resultant high levels of collective efficacy in this school enabled Emily and others to develop the academic and behavioral capabilities that "level the playing field" in terms of college and career readiness. Not only did Emily and others like her achieve proficiency on state-mandated tests, they also experienced real-world learning through project-based learning opportunities and a collaborative environment where working together was a cornerstone of the school's culture.

In the past two decades, researchers such as Bandura (1986, 1993, 1997), Goddard (2001), Goddard, Goddard, Sook Kim, and Miller (2015) and Hoy and Miskel (2008) and Seashore-Louis, Leithwood, Wahlstrom, and Anderson (2010) have found links between collective efficacy and student achievement. Bandura (1986) found that a group's operative capacity was dependent on four factors: knowledge and competencies of individuals, the way the group is structured, how the group is led, and how the members of the group interact with each other in a positive or negative sense. Bandura's (1993) study of 79 schools explained that as collective efficacy beliefs positively influence the normative culture of the school, its operative capacity increases. Such a normative school environment positively affects teacher behavior, in that, teachers believe they can overcome external factors such as poverty. Those beliefs provide the basis for commitment and action to finding ways to insure that students meet with success regardless of the economic or socio-emotional challenges they face. Goddard, Hoy, and Hoy (2004) also suggest that a school's strong collective efficacy can mitigate the effects of poverty by increasing the degree to which teachers differentiate their instructional practices to reach all students at their individual levels. Additionally, they propose that principals and other school leaders gain an understanding of how to develop and influence collective efficacy through the four sources of efficacy belief development as described by Bandura (1986): mastery experiences, vicarious experiences, socially persuasive experiences, and affective states.

Although the research on individual teachers' sense of efficacy as it relates to their instructional practices has grown, research on collective efficacy and its potential for changing school culture and positively enhancing the conditions for academic growth is not as prevalent. Additionally, there is paucity of research that examines how the efficacy beliefs and resultant actions of the principal contribute to a school's collective efficacy, and ultimately influence student achievement. This single case study examines the efficacy beliefs and actions of a rural middle school principal through the lens of the school's teachers. The research also identified factors that contributed to the development of the school's collective efficacy, and how those factors and the actions of the principal positively affected student achievement for all students.

2. Literature review

2.1. Self-efficacy theory

Bandura (1997) presented the construct of self-efficacy in an effort to explain how people's beliefs about their capabilities influence their actions. Bandura suggests that people control or regulate

their behavior by creating standards for evaluating their actions. As people regulate their own behaviors, they also reflect on their thoughts and actions. Through self-reflection, people analyze past events and determine future actions. Bandura (2009) suggests that a person's self-efficacy beliefs influence their cognitive, motivational, affective, and decisional processes. He states:

Self-efficacy beliefs affect: whether people think productively, pessimistically, or optimistically and in self—enacting or self—debilitating ways; how well they motivate themselves and persevere in the face of difficulties; the quality of their emotional well—being they achieve and their vulnerability to stress and depression; and the life choices they make, which set the course of their life paths. (p. 185)

Self-efficacy beliefs derive from four sources: enactive mastery experiences, vicarious/social modeling experiences, social persuasion, and arousal states.

2.1.1. *Principal self-efficacy*

There is a growing conceptual consensus about the essential knowledge and skills required for school leadership (PSEL, 2015); however, principal self-efficacy and its importance to school reform remains an under researched phenomenon. Orr (2003) claims that what aspiring principals come to believe about their abilities and how much they identify with the principal role is equally important to learning the technical skills of leadership. McCormick (2001) found that leaders with strong self-efficacy beliefs positively affect the goals of an organization as well as follower motivation. Likewise, Tschannen-Moran and Gareis (2007) suggest that principal self-efficacy determines how leaders function and the influence they exert on others in the school. Finally, in a study commissioned by the Wallace Foundation, Seashore-Louis et al. (2010), determined that principals with strong self-efficacy are more likely to accept and persevere through the challenges of school improvement processes; and that efficacious leaders develop and promote a sense of collective efficacy that positively affects teaching and learning. Principal efficacy had a small, but significant effect on student test scores (Seashore-Louis et al., 2010).

2.2. *Collective efficacy*

Collective efficacy does not refer to a group of teachers who individually report themselves as having high levels of self-efficacy about teaching and instruction. Individual teacher efficacy beliefs influence the decisions that individual teachers make about their own instructional activities (Tschannen-Moran & Hoy, 2007). However, individual measures of teacher efficacy do not translate into organizational action (Bandura, 1997). In fact, it is quite possible to have a school of highly efficacious teachers who purposely isolate themselves from others and have few meaningful collaborative experiences. Hoy and Miskel (2008) define collective teacher efficacy as, “the shared perception of teachers in a school that the efforts of the faculty as a whole will have a positive effect on students” (p. 189).

Hoy and Miskel (2008) tie the sources of collective teacher efficacy back to Bandura's four sources of self-efficacy; mastery experiences, vicarious experience, social persuasion, and affective state. However, they go further to postulate that the analysis and interpretation of the four sources of information is actually the key to developing collective efficacy. They suggest that it is the analysis that occurs at the school level that produces inferences about the challenges of teaching in that school and what it would take to achieve success. Goddard (2001) posits that it is the way in which a group or organization views the capabilities of all members together that determines how effectively the group will work together to achieve its goals. “Collective efficacy explains the resolve, determination and resilience with which group members plan work, overcome obstacles and interact to achieve success” (2009, p. 54 in John Graham's interview for *Professional Voice*). Teachers in a highly efficacious school analyze how they can make their school successful by determining the challenges they must overcome, and identifying the resources they will need. When teachers accept the challenges and create goals to address the challenges have strong organizational effort and persistence to the accomplishment of the goals, student achievement increases (Hoy and Miskel, 2008). In essence, the school's culture of efficacy beliefs creates a distinctive blueprint for success.

2.2.1. Collective efficacy and student achievement

In describing how collective efficacy affects student achievement, it is important to illustrate that the behavioral norms in schools are associated with teacher beliefs about the capacity that exists within the school to tackle and solve problems (Bandura, 1997). As teachers develop the collective belief that as a school they can have a positive and lasting effect on the lives of students, they act more purposefully to enhance student learning. Bandura's (1993) seminal research on collective efficacy and its relationship to math and reading achievement revealed two important findings: (1) student achievement is significantly and positively influenced by a school's collective efficacy; (2) collective efficacy has a greater effect on student achievement than does low socioeconomic status (free and reduced lunch status) aggregated at the school level. In a similar study, Goddard, Hoy, and Hoy (2000) found that collective efficacy again was a significant predictor of achievement, explaining half to two-thirds of the differences between schools in terms of student achievement in math and reading (Goddard et al., 2000). Further, Hoy, Sweetland, and Smith (2002) suggest that collective efficacy had even greater effect on student achievement than other variables such as race, gender, or socioeconomic background. Recent research supports these findings confirming the significance of collective teacher efficacy on student achievement (Goddard, Goddard, Sook Kim, & Miller, 2015; Goddard et al., 2000; Goddard, Logerfo, & Hoy, 2004; Leithwood & Mascall, 2008).

2.3. Principal efficacy and collective efficacy

Goddard et al. (2015) assert that strong instructional leadership influences collective efficacy through increasing opportunities for teacher collaboration around instructional improvement. Waters, Marzano, and McNulty (2003) noted that when efficacious leaders attributed goal attainment to changes in faculty behavior, the collective efficacy of a school was further developed. Ross, Hogaboam-Gray, and Gray (2003) identified contributions that efficacious leaders could make to a school's collective efficacy such as developing processes to achieve shared goals and decision-making. Goddard (2002) proposed that when teachers have the opportunity to influence instructionally relevant school decisions, collective efficacy is enhanced. However, the principal's role in developing collective efficacy among teachers is much more complicated than simply turning over decision-making to teachers (Seashore-Louis et al., 2010). If it were that easy, many schools would have high levels of collective efficacy.

2.4. Conceptual framework/purpose

Although we are beginning to understand leaders' contributions to collective efficacy, there is more to discover about the behaviors and actions of highly efficacious principals on organizational culture, participants, and group outcomes. We know that schools with high levels of collective efficacy can overcome obstacles to student achievement such as race and low socioeconomic status (Bandura, 1993). We also know that principals can influence the collective efficacy of schools. However, we have little empirical evidence about how principals with high self-efficacy influence the collective efficacy in their schools. Moreover, while studies have examined the beliefs and actions of self-efficacious principals from the principals' points of view, few studies have examined the phenomenon through the perspectives of teachers. It is in the intersection of these two aims that we seek to understand how collective efficacy developed in a school led by a highly efficacious principal, and how the principal's beliefs actions contributed to the school's collective efficacy and ultimately high levels of student achievement.

3. Methods

We used a mixed methods embedded case-study design to identify a single school case to research (Yin, 2014). Embedded case studies allow researchers to examine a single organization or program while also investigating several units of analysis at deeper levels within the organization. "Embedded case studies may rely on holistic data collection strategies for the main case and then call upon surveys or other quantitative techniques to collect data about the embedded units of analysis" (Yin, 2014, p. 66). In this study, we wanted to investigate collective efficacy within a single school (main case) by examining the views of school staff through surveys, individual interviews, document analysis, and focus groups to analyze the embedded units. We asked two research questions:

- (1) What experiences/factors were instrumental in developing the school's collective efficacy?
How did that occur?
- (2) How has the self-efficacy of the principal contributed to the school's collective efficacy?

3.1. Selection of the case

We used three specific criteria to select the case for this study. First, the case site school had to be led by a highly efficacious principal. Second, the case site school had to be a high poverty school that had high levels of student achievement. Finally, the case site school had to report high levels of collective efficacy. These three criteria are explained in greater depth with quantifiable parameters in the following paragraphs.

3.1.1. Identifying high efficacy principals

To understand the influence that high efficacy principals have on the collective efficacy in their schools, we first had to identify principals with high levels of self-efficacy. As part of a larger study that examined self-efficacy development in principal preparation programs, we surveyed all 538 principals in a rural, Western state (Montana) about their principal self-efficacy beliefs. We achieved a response rate of 54% with 292 principals completing the questionnaire; 64% were male and 36% female. Administrative experience of the respondents varied from 2 years to over 25 years. Respondents served in schools with enrollments from just under 100 students to nearly 2,000 students. High school principals accounted for 30% of the respondents, middle school principals represented 12%, and elementary principals made up the largest group at 43%. Another 15% of respondents were principals who performed both elementary and secondary principal duties in small rural schools of typically less than 120 students.

3.1.1.1. Principal self-efficacy survey instrument: To identify principals with high self-efficacy, we used Tschannen-Moran and Gareis (2004) Principal Sense of Efficacy Scale (PSES), a widely known 18-item assessment that requires participants to rate their capabilities on a nine-point scale using these descriptors: 1 (*not at all*), 3 (*very little*), 5 (*to some degree*), 7 (*quite a bit*), 9 (*a great deal*). The PSES reports Cronbach's α for internal consistency reliability of .91. Our criteria for selecting principals with high self-efficacy on the PSES was to identify respondents who rated every item on the assessment as a 7 (*quite a bit*) or higher on the nine-point scale. Out of 292 respondents, 41 principals rated themselves as highly efficacious (a 7 or higher) on every item of the PSES.

3.1.2. Identifying high poverty/high achieving schools

The next step in determining the unit of analysis for the case study was to identify schools (led by the 41 efficacious principals identified from the PSES) that had 45% or greater of their student populations qualifying for free or reduced lunch based on the National School Lunch Program's 2012 Income Eligibility Poverty Guidelines (USDA, 8/16/12). Of the 41 schools led by high efficacy principals, 14 (34%) schools met the criteria for having greater than 45% of its student population qualifying for free or reduced lunch. The second criterion for selecting high poverty, high achieving schools was to identify which of the 14 high poverty schools also met the Annual Measurable Objectives (AMOs) for student proficiency levels in Math and Reading for all student groups on Montana's Comprehensive Assessment System (MontCAS) for three consecutive years, 2009–2010, 2010–2011, and 2011–2012. Schools meeting these criteria also made the Annual Yearly Progress (AYP) benchmark. Only two schools, a K-8 rural school with a population of 120 students and a 6–8 grade middle school with 350 students, met the criteria for poverty (45% or greater free or reduced lunch qualifiers) and high achievement (meeting or exceeding all Annual Measurable Objectives on the 2009–2010, 2010–2011, and 2011–2012 state criterion reference tests).

3.1.3. Identifying high poverty, high achieving schools with strong collective efficacy

3.1.3.1. Collective efficacy survey instrument. The last step in choosing the case study site was to administer the 21-item Collective Efficacy Scale (CE-Scale), (Goddard, Hoy, & Hoy, 2000) to the

faculties of both schools to determine the level of collective efficacy of the school. The return rate criterion was set at 60% to insure that a majority of faculty responded to the Collective Efficacy Scale. The α coefficient of reliability of the CE-Scale has been published as .96 (Goddard et al., 2000). We set the case-study criteria for a school's collective efficacy to have a standardized score at least one deviation above the normative sample (CE = 500) from Goddard and colleagues' original study. Using the formula from the study, SdS (Standardized Score) for CE = $100(CE - 4.1201) / .6392 + 500$, the researchers computed collective efficacy measures for both schools. The K-8 elementary school had a return rate of 63% (12 of 19 staff took the survey) and earned a standardized score of CE = 589 on the scale. The 6-8 grade middle school was chosen as the case-study site because of the high return rate of 83% (29 of 35 returned the survey), and their collective efficacy school score (CE = 697) was nearly two standard deviations above Goddard and Hoy's sample mean score of 500.

3.1.4. Background on the case site

The school site in this case study was a 6th-8th grade middle school located in a rural Western Montana community of about 7,200 people. The majority of residents work in agriculture, light construction, and service industry positions. The per capita income (2014 dollars) reported on the US Census Bureau website was \$24,443. Of the 350 students enrolled in the middle school, 48% were considered to be living in poverty (Free/reduced lunch) with an additional 12% of students qualifying for special education services. The transience rate for the school was 27%. The school case site employed a full-time principal along with 35 teachers and specialists for 25 full-time teaching equivalencies. The majority of staff worked in the school district for more than 15 years with 13 teachers having more than 25 years in teaching. Ten staff members possessed a master's degree or greater.

3.2. Procedures for data collection

3.2.1. Semi structured interviews and document review

Once we had chosen the case site, we invited all 29 teachers who responded to the Collective Efficacy Scale to participate in interviews or a focus group. Eighteen teachers agreed and we assigned pseudonyms to all 18 interview and focus group participants. The study participants represented all grade levels and curricular subject areas. Before we conducted interviews, we reviewed several school documents including: mission and vision statements, Leadership Team goals, meeting agendas, achievement data, five-year comprehensive education plans, newsletters, and school climate surveys completed by students and parents. Our extensive document review helped us gain a deeper understanding of the school's background and identity. Because this study sought to understand the principal's efficacy beliefs and actions through the lens of teachers and their lived experiences, we chose not to include any of the principal's perspectives for this article.

3.2.1.1. Interview protocol. Our semi-structured interview protocol consisted of 11 questions. We used data from the document review to construct questions specifically about *goal setting and program implementation, the function of Leadership Teams, relationships among staff, and the beliefs and actions of the principal regarding school improvement*. Likewise, we used data from the results of the Collective Efficacy Scale to question teachers about their perceptions of *school climate, teacher motivation, and student efficacy*. We also asked general questions about *shared power and leadership, and the school's core mission and values*. We conducted eight face-to-face interviews during two separate visits to the school. Interviews occurred during teacher preparation periods and lasted about 50 min. All interviews were audio-recorded by a two-person research team who also took field notes. We then transcribed the interviews sent them to the participants for member checking. Creswell (2007) suggests that the benefits of member checking establish credibility through verification of accuracy of participant's views and completeness of the transcription data.

3.2.2. Focus group procedures

Following member checking of interviews, the research team analyzed data from the interviews and document review to construct six questions for the focus group that would clarify and deepen our understanding collective efficacy. We then conducted a focus group with 13 teachers that lasted

90 min. Key areas addressed in the focus group included: instructional focus, collaborative opportunities, implementation of change initiatives, principal beliefs and actions, school climate, and use of data. Focus group data triangulated and reinforced member checking of data collected from individual interviews.

3.2.3. Data coding

We used inductive and deductive coding to break the interview and focus group data into small units of meaning relative to collective efficacy, and principal self-efficacy beliefs and actions, (Miles & Huberman, 1994). These units were then organized into larger patterns and categories that, once established, were examined for links and similarities that would illustrate relationships between the school's collective efficacy and principal self-efficacy beliefs and subsequent actions. Finally, the categories were coded thematically. We performed a second member check with focus group participants to ask further clarification and to assess the reasonableness of suggested themes (Creswell, 2007). Participants reviewed the categories and gave researchers feedback about themes.

4. Results

Triangulated data from the interviews, focus group, and document analyses revealed that several factors including the beliefs and subsequent actions of the principal have influenced the case study site's collective efficacy. Additionally, teachers identified collective efficacy as directly contributing to the gains in student achievement and overall school improvement. The findings are reported in two main sections that also reflect our two research questions. Section one has two themes and section two contains three themes. They are:

1. Experiences contributing to collective efficacy development
 - (a) Fidelity to instructional initiatives
 - (b) Relationship building
2. Principal self-efficacy influences collective efficacy
 - (a) Instructional focus
 - (b) Developing teacher leaders and building capacity
 - (c) Leading by example

4.1. Theme one: Experiences contributing to collective efficacy development

Interview data suggested that the site's collective efficacy development was influenced by fidelity to the implementation of instructional initiatives, and relationship building among teachers that facilitated collaborative instructional work.

4.1.1. Fidelity to instructional initiatives

The case-study site enjoyed success with school improvement initiatives that were not a part of a larger district change model and were independently designed and implemented at the school level. Those initiatives included: integration of technology, implementation of a school-wide cross-curricular "writing to learn" initiative, and "bell work", a classroom management tool designed to improve time on task. Data transcribed from teacher interviews and the focus group revealed that the success of the initiatives occurred as a result of staff commitment to fidelity. Participants believed that initiative fidelity, in which every teacher faithfully adopted the expectations and practices of a particular initiative, increased the likelihood that the initiative would succeed. Fidelity also created greater consistency in teachers' practices and policies across the building so that students benefited from seamless transitions from one grade to another and from one subject area to another.

4.1.1.1. *Initiative fidelity: Technology.* Fidelity to instructional initiatives was evident in the school's purposeful integration of instructional technology. The first technology initiative was primarily

designed to develop greater teacher efficiency in data analysis and assessment practices, and in establishing more frequent communication between home and school. As teachers mastered the requisite technology skills necessary to accomplish data analysis and communication goals, they gained confidence and began to find ways to transfer their technology skills to instructional activities that would engage students and promote creativity and greater academic rigor. Mary, the school librarian, summed up technology integration and the resulting instructional capacity building:

As we gained skills in the technology applications that made us more efficient in handling management tasks, we began to develop greater confidence in using a variety of programs for instruction. That confidence found its way into our lesson plans. Now, I'm amazed at how often teachers require students to use technology to research and creatively share their learning.

Case site teachers also became the recognized technology leaders within the district and subsequently were asked to train other teachers across the district. Kelly, the technology specialist for the district described the resulting collective efficacy development this way.

Successful use of technology laid the foundation for even more success. Our teachers became the leaders in the area of technology integration and were willing to learn and implement new programs. Parents and students valued the information teachers provided through technology—the pressure from parents caused other schools within the district to implement the same programs.

4.1.1.2. Initiative fidelity: Writing to learn. Initiative fidelity also influenced the instructional capacity of the staff. Teachers recognized that as they supported and implemented various instructional initiatives, even though some initiatives might be outside their specific subject area discipline, implementation of the initiative still held instructional value for them. This phenomenon was best illustrated by Mark, a math teacher, who discussed how he learned a specific “writing to learn” protocol and then adapted it in his math classes to help students write about procedures and processes in solving various math problems. In implementing the “writing to learn” initiative, Mark gained a new assessment tool as he used writing to measure students’ mathematical and conceptual understanding. Not only did Mark contribute to the overall writing efficacy of students by including writing in math classes, he also added another tool to his instructional toolkit. Mark said this about his experience, “I never realized how important writing could be in helping me understand how kids were thinking about math. It sounds crazy, but writing made their thinking visible.”

4.1.1.3. Initiative fidelity: Bell work. Another initiative that increased instructional capacity was “Bell Work.” This initiative was originally targeted to reduce student tardiness and disruptions from hallway interactions among students that carried over to the first several minutes of each class. The goal was for teachers to greet students at the door to the classroom and direct them to the written “Bell Work” on the board designed to prepare them for the day’s learning. This was to occur before the tardy bell so that students were less likely to be late for class or engage in disruptive hallway behaviors. Although the initiative was first conceived as a class management tool, once teachers envisioned the many pedagogical possibilities inherent in the process, “bell work” morphed into a sophisticated instructional strategy. Teachers began to use “bell work” to review previous learning and check understanding through short writing assignments, delve into the essential questions for the current lesson, and reflect on areas where students had experienced questions or confusion. Because every teacher utilized “bell work” at the start of each class, students were in a sense, “re-trained in classroom behavior expectations” so that hallway disruptions and tardiness were reduced and precious instructional time that had been described as “at best, transitional” was restored and utilized in effectively engaging students. Ann, a focus group participant cited the success of bell work as an example of how quickly the staff was able to adopt new practices. During a staff retreat, the school analyzed math scores and discovered that students were weak in some basic math skills. The school’s data team shared an idea about how using math games could provide additional practice in math facts and shore up basic skills in the areas of fractions and decimals. “It takes little time for

change to happen here, so it was easy to feel like we could organize math games that would get students extra time to learn and master those important math concepts,” said Donna, a reading specialist. The data team took on the challenge to design and produce games for every classroom so that twice each week all students would take 15 min from the long lunch hour and play math games. The result of that initiative propelled the school to a 20-percentage point gain in math proficiency across all grades on the state achievement test the following year.

It was the sentiment of all participants that because the school had experienced success in several change initiatives, the positive momentum of accomplishment emboldened their beliefs in the collective capacity of the school. Because they had achieved mastery in implementing change, teachers reported that they felt nothing was outside of the realm of possibility. Lance, an English teacher stated, “Early success paved the way for future success and that fostered the attitude among our staff that we can succeed and nothing is insurmountable.”

4.1.2. *Principal’s role in initiative fidelity*

Document reviews revealed that fidelity in the implementation of initiatives occurred mostly due to the principal establishing specific expectations, monitoring teacher practices, and providing encouragement and support. The principal gave feedback about initiative fidelity and success during walk-throughs and formal teaching observations in order to reinforce success or suggest alternative strategies. Teachers also appreciated how the principal celebrated the success of initiatives through personal notes to teachers, staff meeting agendas, staff lounge postings, and parent newsletters. Focus group participants said that encouragement from the principal increased their personal efficacy as their contribution to the overall success of the school was recognized. Sam remarked how the school-wide successes made him feel: “It is so much more than a job. I ask myself, “what legacy will I leave to this school?” I feel like I am a part of something really worthwhile.” In summing up the sentiments of the focus group about their ability to implement instructional initiatives, Cindy, a science teacher, offered:

Change is hard for teachers, but we found that the secret to success was for everyone to be consistent and do things the same way. It wasn’t always popular ... people value their autonomy, but the more we did, the easier it got. Then as we saw kids truly benefitting, it was no longer an issue. We got pretty good at “change.”

4.1.3. *Relationship building*

In addition to implementation fidelity, much of the discussion about collective efficacy development centered on relationship building among staff. Focus groups identified retreats, staff diversity, and a willingness to collaborate as factors that built relationships and further developed collective efficacy.

4.1.3.1. *Retreats.* One of the factors credited with building relationships was an annual, day-long retreat held off-site for the primary purpose of analyzing student achievement and school climate data, celebrating successes, and developing goals and action plans that would continually promote school improvement. During retreats, teachers chose to join one of six leadership teams that addressed: *safe and orderly environment, frequent monitoring of progress, positive home/school relations, climate of high expectations, opportunities to learn, and instructional leadership.* Each leadership team was responsible for analyzing data relative to their purpose, setting goals, planning school-wide activities, and monitoring those activities. Each leadership team met throughout the year to check the progress of their goals and make any necessary changes to their action plans. Through those experiences, respectful relationships and mutual trust among teachers continued to reinforce a close, collaborative culture. Ann, stated, “I think our retreats the past few years have brought greater trust and closeness to our faculty. We recognize that each of us are responsible for the success of the kids in our school, there are no weak links here.” Sam agreed. “The retreats were so successful in focusing people and bonding people together—we even took the retreat concept to the students and are doing anti-bullying retreats with them.”

4.1.3.2. *Diversity and individual differences.* Somewhat surprisingly, teachers credited diversity and individual differences among staff members for contributing to positive, respectful relationships which, in turn, helped develop collective efficacy. While there was little racial diversity among the teaching staff at the school, several teachers had backgrounds outside of K-12 education that accounted for diversity in beliefs and opinions about pedagogy, and educational philosophy and policy. Interviewees recognized that individual differences and varied opinions were present in every discussion involving change; but they also felt that these differences strengthened rather than detracted from the school's willingness to adopt change and its overall mission. Members of the focus group spoke extensively about staff members feeling comfortable in sharing ideas and perspectives in open forums such as staff meetings, but also in small groups or with the principal. Elizabeth stated, "Every teacher has a voice in what can be done here. We feel safe to express opinions about pedagogy and philosophy, but that being said this faculty holds each and every member to a high standard." Diversity of opinion was the mechanism to tease out the problems and instill a sense of purpose in change initiatives. That sense of purpose and commitment to goals also caused for teachers to personally support one another as evidenced by the following quote from the technology specialist, Kelly:

When I think about describing our teacher relationships, I think about family. Members of a family may not always agree, but they work towards a common goal and care about each other and their individual growth. If a member of a family is not doing well, others are there to support and help. Teacher relationships here are supportive and helpful professionally and sometimes when necessary, personally. We push one another; and then when one of us succeeds in the classroom and with students, that allows all of us to share in those accomplishments.

4.1.3.3. *Collaboration for learning.* The willingness of teachers to collaborate to create learning experiences outside the classroom also contributed to relationship building and collective efficacy development. Peter, a science teacher, told about a 7th grade field trip that turned into a school-wide stream study project that not only increased student opportunities, but also brought members of the school and community together to reclaim the stream that flows behind the school. In addition to all of the school's teachers, scientists from a nearby university and other biologists from the community collaborated on the project to advance the rigor of learning expectations as well as demonstrate career possibilities to students. Teachers taught interdisciplinary units across every curricular area to coincide with the stream study unit; and every staff member and all students participated in the clean-up and reclamation. Peter recounted how some of his colleagues agreed to attend a summer institute in order to gain access to free water quality testing equipment to make the project possible. He said:

I wrote a grant and took three teachers with me to attend a summer science school training on water quality. These teachers attended because they wanted to help me get free equipment—literally thousands of dollars in testing kits and supplies. That was the beginning of the stream study three years ago. Now every student in every grade takes part in at least one aspect of the study. This type of learning could not take place without other teachers agreeing to share their class time and collaborating on the project.

In collecting data for the first research question, we found that the school's collective efficacy was advanced through fidelity to several instructional initiatives that positively affected student achievement. Additionally, teachers credit the ongoing relationship building among staff that occurred as a result of: retreats and professional development, staff diversity, and collaboration around project-based learning opportunities. Teachers also acknowledged specific actions taken by the principal that supported initiative fidelity and relationship building among staff.

4.2. Theme two: Principal self-efficacy influences collective efficacy

Our second research question examined the principal's self-efficacy beliefs and actions and their influence on the school's collective efficacy. Qualitative data identified three main themes that

describe how the principal's beliefs and purposeful actions contributed to the school's collective efficacy. Interviewees describe how the principal's beliefs about students' capacity to learn led to purposeful actions that maintained an unwavering focus on instruction. Second, the principal believed she had a moral obligation to develop teacher leaders and build capacity. Finally, the principal believed that leading by example would build trust among staff and best facilitate educational change.

4.2.1. Instructional focus

From our document analysis of meeting agendas, parent newsletters, and school goals, it was evident that the principal held fast to the belief that all students could learn and that high-quality instruction, varied opportunities, and a safe, caring environment could mitigate other issues such as poverty and learning difficulties. Consequently, all but one initiative (bell work) began with the goal of increasing teachers' instructional effectiveness and promoting higher academic expectations for students. Even though there were purposeful actions that served to develop and promote teacher leaders, building capacity was primarily done to support the advancement of instructional goals and create new opportunities for student growth. In addition to the previously mentioned instructional initiatives, the principal also envisioned other opportunities to enhance teaching effectiveness including using teaching videos in professional development to critique and gather new instructional ideas, and using research articles and book studies to discuss pedagogical and programmatic possibilities for the school. It was also noted that the principal secured external funding that increased teacher and student access to technology as another means of maintaining instructional focus.

4.2.2. Developing teacher leaders and building capacity

The reports from teachers suggest that the principal believed she had a moral obligation to share leadership, develop capacity, and publicly acknowledge strengths and skills in others. Document reviews revealed that as many as 16 teachers were chosen for leadership roles within the school, either as in-house experts for a particular initiative, or as team leaders. As mentioned before, all eight interviewees and focus group participants alike credited professional relationships and collaborative teaching opportunities as influencing the collective efficacy development of the school. Similarly, the interview participants noted that many teacher relationships were built or strengthened as a result of the principal purposefully pairing teachers together to develop new programs or lead specific initiatives. Teachers credited the principal with understanding personalities and instructional strengths of teachers so that people with diverse skill sets could collaboratively accomplish complex goals. Elizabeth, one of the school's special education teachers, presents an excellent example. She shared,

Principal Adams recognizes "who we are" and has the ability to understand how to cultivate our individual gifts and pair them with someone else's to complement each other. My teaching partner, who I knew casually before, is now one of my closest friends, and we together are doing things that neither of us could have done alone for our kids.

Other focus group members also acknowledged the principal's thorough understanding of teacher strengths. They suggested that in addition to promoting instructional effectiveness, the principal also routinely identified teachers' strengths as a means to challenge them and develop their leadership capacity. Two of the focus group participants discussed their initial reticence in taking on these leadership roles. Lance said, "I wasn't sure I was the right person to design our service learning project, but Principal Adams made me feel like my skills and abilities were exactly the right fit to accomplish the vision." Donna also remarked that at first she didn't believe she had the expertise to lead the assessment and data analysis team, "... but she (Principal Adams) recognized and praised my skills in using data to improve reading, so I thought, 'why not me?' Having her express confidence in my abilities ... well, I didn't want to disappoint her." All the interview and focus group participants agreed that the principal had a knack for understanding teachers' personalities and skills, and that she constantly worked to get teachers to believe in themselves and maximize their leadership potential. That sense of confidence played a role in how the entire school viewed its mission and capabilities to accomplish it. Sam expressed the group's beliefs this way:

We don't operate from a deficit mentality here—we don't talk about what we *can't do or can't expect*. Our principal believes that no matter what, “you look to put people in a position of strength that coincides with their skillset.” Even with our toughest kids, we always talk about the goal and the end game. We believe that you build people up by finding their strengths first, and then move upward from there—and that's also true for kids.

Finally, five of the eight interviewees shared that the principal built teacher leaders by encouraging teachers to attend out of district professional development opportunities to enhance their instructional capabilities and strengthen their leadership. A common growth strategy was for the principal to target teachers for specific training and professional development opportunities, secure funding and financial support, and then provide venues for teachers to share what they had learned. Teacher leaders led building-wide initiatives such as the “writing to learn” program, data analysis and assessment, and technology integration. Not only did they train other teachers, they also became the “in-house” experts and were invested in the initiative's success. The principal publicly celebrated teacher leaders and their successes; those successes in turn encouraged others to also take on new challenges. Sam described how his opportunity to attend school leadership training evolved into a school-wide effort to reduce bullying and improve school climate.

Because I was given the opportunity to attend Leadership Team training, I became aware of the need to do climate surveys. We surveyed students and presented the data to teachers. The outcome of that began a series of changes such as more teachers in the hallway, follow-up surveys and the 8th grade retreat ... attending the conference gave credence to the role the school counselor plays in the overall scheme of school improvement and accountability.

A final factor that supported the development of teacher leaders was the purposeful design of professional development structures and activities. The principal restructured the school day, adding student instruction time daily so that teachers could trade increases in weekly instructional time for more frequent and longer staff development days. That re-scheduling of the school day allowed teachers to gain more practice with instructional activities such as writing and technology. During more frequent professional development days, the “in-house experts” had time to address potential concerns and problems that might typically derail change initiatives. Cindy noted, “Rearranging the daily schedule was really a huge help to teachers, because we finally had time to practice our new skills and collaborate with each other to figure out how best to use them.”

4.2.3. *Leading by example*

Many of the focus group teachers identified specific ways in which the principal lead by example. One way was through participation in teacher professional development. In every building-wide, instructional initiative, the principal participated in all training sessions. Teachers reported that Principal Adams believed it was her responsibility to learn everything possible about the initiative so that she could better evaluate its effectiveness and ease of implementation. She sat side-by-side with teachers during professional development sessions asking questions, looking to help others, and listening to concerns. Teachers reported that Principal Adams believed she needed to attend all training sessions and model learning for her teachers. Teachers regarded this as unique to their principal. Mary offered,

Whenever we had district-wide professional development, Principal Adams was frequently the only administrator there. Other administrators said they were too busy to attend, but our principal always found the time. Teachers from the other schools commented on this, too. That said a lot about her commitment.

Others appreciated the principal's willingness to understand and experience the uncertainty and imperfections associated with learning a new skill. Teachers recognized that by understanding the complexities and obstacles present in a new initiative, the principal was better able to offer technical advice and act as a resource when questions arose. Direct principal involvement in the school initiatives also signaled to teachers a commitment to seeing the initiative through. Lance remarked that unlike many change initiatives in other schools, “We knew that change at our school wasn't going away.”

A second frequently mentioned point where Principal Adams led by example was the fact that she had worked on an advanced degree, demonstrating a commitment to her own professional learning and growth. Teachers were aware that many of the research-based ideas the principal had encountered in pursuit of a terminal degree had also made their way into school discussions and provided further impetus for designing effective school improvement activities. Often Principal Adams would copy research articles and give them to teachers to read and discuss during a faculty meeting or professional development day. Articles frequently detailed how high poverty schools found success in working with their students. Teachers found the articles inspiring, and often groups of teachers wanted to replicate the ideas presented in the articles. Elizabeth stated that she felt it was everyone's responsibility to seek ways to improve the school. She stated:

We don't need permission here to try new things. They just have to be supported by research and have to be focused on student achievement. We have the confidence to try new things ... the whole school expects growth in student achievement. If it needs to be done, we "take it on."

The principal not only shared educational research and literature that provided teachers with intellectual stimulation regarding the technical precepts of learning, she also shared stories about students and families and the obstacles they were working to overcome. Through these stories and heartfelt discussions, the collective sense of mission and obligation to students and community was renewed. Lance stated, "There is a sense that *real* teachers go beyond what is routine to bring quality to the school. We know that we represent more than just a building."

Finally, many of the focus group members recognized and commented on the ways they personally were influenced by the principal's example. Five people discussed how they now work harder at developing relationships with the staff and students. Two talked about the ways they try to promote the school's successes in the community. Nine teachers mentioned how they had chaperoned various activities or coached sports. Seven teachers had even provided financial support for students in various ways. "It's not that I feel like I *have* to do these things. I *want to do them*," said Peter. "That's what it means to be a part of this school; you gladly do whatever it takes." Interview participants revealed that their commitment to the educational mission was, in part, influenced by the principal's steadfast commitment to the school community and her actions to support it. Four of the teachers discussed how the principal protected the school from outside threats (such as ineffective and inapplicable professional development and misguided policies) that had the potential to derail progress and compromise the school's mission. Mark discussed how Principal Adams protected the school's mission, "If district policies were to get in the way of how we work with kids, there would be an uprising. It simply would not be accepted, and Principal Adams would lead the uprising."

Kelly's comments serve as a summation of how the principal led by example:

Our principal leads by example, whether it's achieving personal education goals or promoting sound research. I cannot think of a job she wouldn't tackle to make this a better place for students and staff—officiating games, team teaching, leading professional development, and even paying for whatever an individual student may need. I even saw her wax floors one year, just because it needed to be done.

In summary, there was significant agreement that the principal's self-efficacy beliefs and purposeful actions influenced the collective efficacy development of the school. This was accomplished by maintaining a relentless focus on instruction to increase student achievement, and developing teacher leaders to accomplish the goals and mission of the school. The principal also inspired staff as she led by example achieving personal education goals, participating in school site professional development, accepting responsibilities outside the normative structure of a principal's job description, and by protecting the school's mission.

5. Discussion

In this single embedded case study, we sought to illustrate how collective efficacy was developed in a high poverty, high achieving school, and how the efficacy beliefs of the principal also contributed to the school's self-efficacy. Data from our first research question about how collective efficacy was developed in the school revealed that the school's collective efficacy was developed in two primary ways: (1) fidelity to instructional initiatives and (2) relationship building among staff that was borne out of staff retreats and professional development, philosophical diversity and collaborative teaching opportunities. The data from our second research question about how the efficacy beliefs and subsequent actions of the principal influenced collective efficacy showed that the principal's action's in maintaining an instructional focus, developing teacher leaders, and leading by example influenced collective efficacy. Prior research by Goddard et al. (2015) also found that teacher collaboration was a predictor of collective efficacy and student achievement, and that instructional leadership practices of the principal created opportunities for collaboration. The current study reinforces Goddard et al. (2015) as well as Leithwood and Mascall (2008), Seashore-Louis et al. (2010) findings which held that leaders have the power to design instructional practices and policy which positively influence the school's collective efficacy and ultimately student achievement. In our study, we found evidence that the principal's efficacy beliefs influenced the decisions about the type of actions the principal chose to take to positively affect teaching efficacy and student achievement. Teachers reported that the principal believed that improving the instructional capacity was the foundation for all other school improvement processes. We found evidence that the principal's steadfast commitment to instruction not only insured the success of instructional initiatives to promote student achievement, but that the initiatives themselves created collaboration, developed teacher leaders, and increased individual teacher efficacy and the collective capacity of the school.

5.1. Applying Bandura's efficacy sources to the case

In an effort to extend the research base, we feel it is also important to situate and discuss our findings in terms of Bandura's (1993) theory of collective efficacy and the sources of efficacy development. One or more sources of efficacy (*mastery experience, vicarious learning, social persuasion and affective state*) supported each finding and provided a theoretical explanation for the genesis of collective efficacy.

5.1.1. Initiative fidelity: Mastery experiences in school change

First, we believe that the fidelity to instructional initiatives created a kind of *mastery experience* in school change. Bandura (1997) describes enactive mastery as, "the most influential source of efficacy because it provides the most authentic evidence that we can muster what it takes to succeed" (p. 80). Teachers remarked that change could occur quickly at the school because they understood the value of implementing initiatives consistently. Cindy's statement, "We got pretty good at change," signals that teachers were willing and skilled at successfully implementing instructional initiatives.

5.1.2. Instructional initiatives: Mastery experiences in teaching strategies

Second, and because the initiatives were primarily focused on instruction, teachers found that their individual teaching efficacy increased as they gained new skills and knowledge outside their discipline. Not only did teachers experience mastery in school change, the acquisition of several new instructional strategies also created *mastery experiences* for teaching efficacy.

5.1.3. Vicarious learning and social persuasion through relationship building

Third, the relationship building that occurred at the case site helped develop collective efficacy as teachers experienced *vicarious learning* and *social persuasion*. *Vicarious learning*, which Bandura regards as the second efficacy source, is also described as social learning, or when one learns from watching a competent model (Bandura, 1997). Teacher leaders who provided expertise and support in implementing instructional initiatives served as "models" so that colleagues could also acquire the knowledge and skills necessary to succeed. The collegial and positive relationships that existed created a sense of trust, which allowed staff to be more open to collaborating with and learning

from one another. *Social persuasion*, the third efficacy source, is important to people because as Bandura (1997) suggests, “it is easier to sustain a sense of efficacy, especially when struggling with difficulties, if significant others express faith in one’s capabilities” (p. 101). Social persuasion was a pervasive element in the case site demonstrated by first the large number of teachers (18 of 29) who volunteered to participate in interviews and focus groups, and in the encouragement that teachers provided one another professionally and personally. Kelly’s comments illustrate our beliefs, “Teacher relationships here are supportive professionally and sometimes, when necessary, personally. We push one another; and then when one of us succeeds ... that allows all of us to share in those accomplishments.”

5.1.4. *Social persuasion to promote teacher leadership*

The principal’s beliefs and actions developed collective efficacy through the sources of *social persuasion* and *vicarious learning*. As the principal tapped teachers to become “in-house” instructional experts or teacher leaders who accepted the responsibility to train colleagues and provide technical support for instructional initiatives, teachers were “socially persuaded” that they, in fact, had the ability to succeed as leaders in the school. The sheer number of teachers (16) chosen to lead some initiative, program or practice, was indicative of the principal’s belief in her obligation to develop teacher leaders. Because the principal showed confidence and trust in teachers’ abilities, teachers’ sense of pride and determination increased as did their beliefs in their capacities to accomplish the goals set before them. Though teachers might have been initially reluctant to embrace leadership, the respect they had for the principal wouldn’t allow them to decline the opportunity. Donna said, “... Having her express confidence in my abilities, well ... I didn’t want to disappoint her.”

5.1.5. *Principal modeling and vicarious learning*

Teachers reported that the principal led by example, thereby creating *vicarious learning* opportunities for them. Teachers acknowledged that the principal participated in professional development and learned side-by-side with teachers to demonstrate that importance of everyone’s role in an instructional initiative. The principal also pursued an advanced degree, and used research-based practices to improve the school. Teachers recounted that the principal worked hard to develop relationships with staff, students, and parents, chaperoned and coached various activities, provided financial support for students, and championed the school in public venues. Teachers, in turn, emulated many of these examples to further support the mission of the school.

5.1.6. *Collectively positive affective states*

Lastly, during the interviews and observations, we noticed that teachers expressed and appeared to experience a positive *affective state* that gave them the sense that anything was possible. Sam said, “We don’t operate from a deficit mentality here—we don’t talk about what we *can’t do or can’t expect* ...we find strengths first ... and then move upward.”

5.2. *Implications for practice and further research*

Understanding how collective efficacy was developed as well as the principal’s role in its development give rise to recommendations for research and practice. In our study, we learned that a school’s collective efficacy and greater student achievement can be increased through purposeful and ongoing instructional initiatives and collaborative teaching opportunities if instructional capacity is intentionally built through the process. Therefore, school leaders should not only look to initiatives that have the promise to increase student achievement, but also those that create the potential to develop collaborative opportunities to positively affect the school’s culture and the relationships of the people in it. Likewise, principal preparation program faculty would be prudent to develop coursework and experiences that teach aspiring leaders the strategies and approaches that would best accomplish instructional initiative fidelity in order to increase the likelihood of success. Program faculty might also make aspiring leaders aware that maintaining instructional focus, developing teacher leaders, and modeling leadership (lead by example) have the potential to positively influence collective efficacy and ultimately student achievement.

While research has illuminated the links between instructional leadership practices, collective efficacy, and student achievement (Bandura, 1993; Goddard et al., 2015; Seashore-Louis et al., 2010), more research is needed to help new and veteran school leaders understand how their efficacy beliefs and subsequent leadership actions and strategies, and to successfully apply them to struggling schools. Additionally, the relationship between principal self-efficacy beliefs and the development of collective efficacy warrants greater attention.

6. Conclusion

Goddard et al. (2000) and Goddard and Salloum (2011) suggest that the level of collective efficacy in schools can contribute to school improvement and mediate the effects of low socioeconomic status among students. Bandura (1993) also found that student achievement was significantly and positively related to collective efficacy and that collective efficacy had a greater effect on student achievement than did student socioeconomic status. Chemers, Watson, and May (2000) found that leader self-efficacy was important in affecting the attitudes and performance of followers.

Using teachers' perspectives as our lens, we sought to add to the research base of (1) how collective efficacy was developed in a high poverty, high achieving, rural middle school; and (2) the influences that self-efficacious principals have on collective efficacy and student achievement. The case provided data that would suggest the importance for principal preparation programs to develop coursework and experiences that would help aspiring principals understand collective efficacy development, and the influence that principal efficacy beliefs have on a principal's decisions and purposeful actions that may subsequently build or weaken collective efficacy.

As demonstrated in this case, the principal's efficacy beliefs influenced the decisions about, and commitment to, school improvement processes. The implementation of those processes, which were primarily instructional initiatives, created collaborative relationships among staff, increased teaching efficacy, and enabled an operationalized sense of vision and mission. That operationalized sense of vision and mission embodies the contribution that collective efficacy has made to the achievement and growth of not only Emily, but every student in her school.

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References

- Bandura, A. (1986). *Social foundation of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational Psychologist*, 28, 117–148. http://dx.doi.org/10.1207/s15326985ep2802_3
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: H. W. Freeman.
- Bandura, A. (2009). Cultivate self-efficacy for personal and organizational effectiveness. In E. A. Locke (Ed.), *Handbook of principles of organization behavior* (2nd ed., pp. 179–200). New York, NY: Wiley.
- Chemers, M. M., Watson, C. B., & May, S. T. (2000). Dispositional affect and leadership effectiveness: A comparison of self-esteem, optimism, and efficacy. *Personality and Social Psychology Bulletin*, 26, 267–277. <http://dx.doi.org/10.1177/0146167200265001>
- Creswell, J. (2007). *Qualitative inquiry and research design: Choosing among five approaches*. Thousand Oaks, CA: Sage.
- Goddard, R. D. (2001). Collective efficacy: A neglected construct in the study of schools and student achievement. *Journal of Educational Psychology*, 93, 467–476. <http://dx.doi.org/10.1037/0022-0663.93.3.467>
- Goddard, R. D. (2002). A theoretical and empirical analysis of the measurement of collective efficacy: The development of a short form. *Educational and Psychological Measurement*, 62, 97–110. <http://dx.doi.org/10.1177/0013164402062001007>
- Goddard, R., Goddard, Y., Sook Kim, E., & Miller, R. (2015). A theoretical and empirical analysis of the roles of instructional leadership, teacher collaboration, and collective efficacy beliefs in support of student learning. *American Journal of Education*, 121, 501–530. <http://dx.doi.org/10.1086/681925>
- Goddard, R., Hoy, W. K., & Hoy, A. W. (2000). Collective teacher efficacy: Its meaning, measure, and impact on student achievement. *American Educational Research Journal*, 37, 479–507. <http://dx.doi.org/10.3102/00028312037002479>
- Goddard, R., Hoy, W. K., & Hoy, A. W. (2004). Collective efficacy beliefs: Theoretical developments, empirical evidence, and future directions. *Educational Researcher*, 33, 3–13. <http://dx.doi.org/10.3102/0013189X033003003>

- Goddard, R., Logerfo, L., & Hoy, W. K. (2004). High school accountability: The role of perceived collective efficacy. *Educational Policy*, 18, 403–425. <http://dx.doi.org/10.1177/0895904804265066>
- Goddard, R., & Salloum, S. (2011). Collective efficacy beliefs, organizational excellence and leadership. In K. Cameron & G. Spreitzer (Eds.), *The Oxford handbook of positive organizational scholarship* (pp. 642–650). New York, NY: Oxford University Press.
- Graham, J. (2009). Roger Goddard: Collective efficacy (Interview with Roger Goddard). *Professional Voice*, 7, 53–58.
- Hoy, W. K., & Miskel, C. G. (2008). *Educational administration: Theory, research, and practice* (8th ed.). New York, NY: McGraw Hill.
- Hoy, W. K., Sweetland, S., & Smith, P. (2002). Toward an organizational model of achievement in high schools: The significance of collective efficacy. *Educational Administration Quarterly*, 38, 77–93. <http://dx.doi.org/10.1177/0013161X02381004>
- Leithwood, K., & Mascall, B. (2008). Collective leadership effects on student achievement. *Educational Administration Quarterly*, 44, 529–561. <http://dx.doi.org/10.1177/0013161X08321221>
- McCormick, M. J. (2001). Self-efficacy and leadership effectiveness: Applying social cognitive theory to leadership. *Journal of Leadership & Organizational Studies*, 8, 22–33. <http://dx.doi.org/10.1177/107179190100800102>
- Miles, M., & Huberman, A. (1994). *Qualitative data analysis* (2nd ed.). Thousand Oaks, CA: Sage.
- National Board for Educational Administration. (2015). *Professional Standards for Educational Leaders 2015*. Reston, VA: Author.
- Orr, M. (2003). *Evaluating educational leadership preparation: A review of empirical, conceptual and methodological literature*. A paper presented at the annual meeting of the American Educational Research Association.
- Ross, J., Hogaboam-Gray, A., & Gray, P. (2003). *The contribution student of prior student achievement and school processes to collective teacher efficacy in elementary schools*. Paper presented at the American Educational Research Association, Chicago, IL.
- Seashore-Louis, K., Leithwood, K., Wahlstrom, K., & Anderson, S. (2010). *Investigating the links to improved student learning*. New York, NY: Wallace Foundation.
- Tschannen-Moran, M., & Gareis, C. (2004). Principals' sense of efficacy. *Journal of Educational Administration*, 42, 573–585. <http://dx.doi.org/10.1108/09578230410554070>
- Tschannen-Moran, M., & Gareis, C. (2007). Cultivating principals' sense of efficacy: What supports matter? *Journal of School Leadership*, 17, 89–114.
- Tschannen-Moran, M., & Hoy, A. W. (2007). The differential antecedents of self-efficacy beliefs of novice and experienced teachers. *Teaching and Teacher Education*, 23, 944–956. <http://dx.doi.org/10.1016/j.tate.2006.05.003>
- Waters, T., Marzano, R., & McNulty, B. (2003). *Balanced leadership: What 30 years of research tells us about the effects of leadership on student achievement*. Denver, CO: McREL.
- Yin, R. (2014). *Case study research: Designs and methods*. Thousand Oaks, CA: Sage.



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