The Relationship Between Distributive Leadership, School Culture, and Teacher Self-Efficacy at the Middle School Level

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Abstract

The purpose of this correlational, quantitative research study was to examine the extent to which relationships exist between distributed leadership, school culture, and the self-efficacy of teachers within public middle schools in central New Jersey. This study was informed by Spillane's and Elmore's theoretical frameworks concerning distributed leadership, Bolman and Deal's framework concerning school culture, and Bandura's framework for self-efficacy. This study identified significant relationships between distributed leadership, school culture, and teacher self-efficacy. The results indicate the need for school leadership to adopt a holistic framework for leading large complex organizations such as middle schools.

Key Words

leadership, distributive leadership, self-efficacy, reframing, decision making

Introduction

The task of leading today's schools has become so multifaceted and complex that one individual cannot be expected to accomplish the task alone (Grenda & Hackmann, 2013). To study leadership practice, one must examine the interplay between leaders, followers, and the elements of the situation (Grenda & Hackmann, 2013). One approach in examining that interplay is by examining the relationship between distributed leadership, culture, and self-efficacy.

The purpose of this study was to replicate Davis' (2014) study to determine the extent to which a relationship exists between distributed leadership, school culture, and the self-efficacy of teachers in public middle schools in central New Jersey. Although Davis' study demonstrated a positive correlation between distributed leadership and both school culture and teacher self-efficacy—as well as a positive correlation between school culture and teacher self-efficacy—the study was limited to K-5 elementary schools in Pinal County, Arizona.

There is a need to continue this research to include middle schools that house Grades 6–8 in different geographical regions of the United States to determine if there are similar findings.

The purpose of Davis' research was to contribute to the literature regarding distributive leadership that goes beyond the limited focus of school performance and student achievement to include school culture and teacher self-efficacy. This study adds to the empirical research on distributed leadership by advancing the understanding of the relationship that exists between distributive leadership, school culture, and teacher self-efficacy at the middle school level. Further, the findings of this study contribute to the literature on school leadership and its impact on school culture and teacher self-efficacy. If a positive correlation between distributed leadership, school culture, and teacher self-efficacy can be established at the middle school level, further research could be conducted and action could be taken to promote a shift away from thinking that an authoritative, top-down leadership structure is what is required for principals to be successful in the current educational environment.

Literature Review

In many schools, the authoritarian model for leadership is used to govern learning (Nystrand, 2009). In an authoritarian model, there are specific boundaries that dictate job duties, the role of leadership, and how various stakeholders communicate with each other (Nystrand, 2009).

Research has shown that this top-down style of leadership is not conducive to the needs of 21st-century middle schools, especially regarding how this style pertains to the role of the principal as a school leader (OECD, 2009). Increased accountability measures have placed pressure on middle school principals, resulting in leadership structures that are in direct conflict with best practice.

Although an authoritative, top-down structure may seem like the path of least resistance to principals, the impact of such a structure may create an environment where school leaders become overwhelmed by all-consuming tasks and are distracted from their professional responsibilities (Beisser, Peters, & Thacker, 2014).

Chance, Cummins, and Wood (1996) assert that the school principal has an influence

on the establishment of the school-work culture. It is the responsibility of the principal to develop an understanding of the characteristics that define the culture of their school. "A positive and progressive school culture propagates morale, staff performance and student enrichment" (McKinney, Labat, & Labat, 2015, p. 155). Fullan (2014) suggests that principals should assume the role of mediators by creating motivating conditions that encourage teachers to learn and optimize their practice.

The desire to establish what Chance, Cummins, and Wood (1996) described as an effective school-work culture implies and necessitates a system for continuous improvement on the part of the school and its members. "Epstein *et al.* (2011) conclude with the results of their study the suggestion that shared school endeavors, evaluation of student outcome data and shared collaborative leadership in a school will promote an academic and social equity for improved school culture" (McKinney et al., 2015, p. 154).

Although a model of shared leadership is consistent with the establishment of a positive school culture, the implementation of this model requires a significant initial investment of time and resources.

Unfortunately, society is changing much more quickly than many educators would prefer, and outside political pressures drive school leaders to focus on short-term goals, often tied exclusively to data from standardized assessments, rather than investing in establishing a positive school culture.

There is evidence to suggest that middle school teachers feel less efficacious than elementary or high school teachers (Eccles, Wigfield, Midgley, Reuman, Iver, & Feldlaufer, 1993; Midgley, Anderman, &

Hicks, 1995). Albert Bandura (1998) defined perceived self-efficacy "as people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives."

"Self-efficacy beliefs determine how people feel, think, motivate themselves and behave" (Bandura, 1998). Schwerdtfeger, Konermann, and Schonhofen's 2008 study involving German teachers found teacher self-efficacy to have a positive influence on teachers' attitudes and behavior toward their students as well as observable classroom practices. "Moreover, greater self-efficacy has been found to positively affect teachers' psychological health with respect to job satisfaction and burnout, as well as better physical health as evidenced by physiological indicators of stress" (Wang, Hall, & Rahimi, 2015, p. 122). Bandura (2000) asserts that people are partly the products of their environments.

By transforming the culture of schools, building principals have the power to create an environment in which teachers are empowered to transform their circumstances and be producers of environments that they believe can positively influence students.

Robinson (2008) argues that distributive leadership allows for greater expertise to be made available to those who possess the relevant expertise for carrying out the wide range of educational tasks now demanded of schools.

The adoption of a distributive approach to leadership "is not only more suited to building higher order competencies and capacities among teachers and students alike, but it also enhances work-life balance by ensuring the burdens of leadership do not rest on one set of shoulders" (Hargreaves, Halasz,

& Pont, 2008, p.72). General Motors CEO, Mary Barra, states that "if you let people own policies themselves–especially at the first level of supervision–it helps develop them" (Fessler, 2018). As CEO of General Motors, Barra replaced the company's 10-page dress code to two words: "dress appropriately." Barra's policy decision was driven by her thought that if her managers could not handle a simple policy such as "dress appropriately," what other decisions might they struggle with? Barra states that people will live down to overly prescriptive policies and procedures (Fessler, 2018).

Through the implementation of a distributive leadership framework, a principal can share responsibilities with qualified staff while promoting a building-wide culture of trust that empowers teachers. Spillane and Sherer (2004) argue that a distributed perspective on leadership means more than acknowledging that multiple individuals lead. "A distributive perspective presses us to consider the enactment of leadership tasks as potentially stretched over the practice of two or more leaders, followers, and their situation" (Spillane and Sherer, 2004, p. 6).

The concept of "stretching" leadership over different individuals in the organization is what moves the distributed leadership framework beyond the model of the single charismatic leader who transforms an organization (Angelle, 2010).

"With distributed leadership, decisions about who leads and who follows are dictated by the task or problem situation, not necessarily by where one sits in the hierarchy" (Copland, 2003, p. 378). This leadership framework is a challenge for leaders who have experience only in primarily top-down structures.

Distributed leadership will challenge

school leaders to relinquish some of their control over the empowerment of others. Bennett, Wise, and Woods (2003) found that conceptions of distributed leadership involve recognizing expertise, rather than formal position, as the basis of leadership authority in groups.

Theoretical Foundations for Research

There are many theoretical perspectives regarding distributed leadership, school culture, and teacher self-efficacy. The theoretical framework for this study was grounded in the theories of distributed leadership developed by Spillane (2006) and Elmore (2000); the theory of self-efficacy developed by Bandura (1997); and the theory of school culture developed by Bolman and Deal (2013). These frameworks were chosen for this study based on their prominence in their respective subject areas.

Participants

Five middle schools within Middlesex and Mercer Counties in New Jersey were identified for the study. At the time of this study, each of these suburban middle schools had a diverse student population exceeding 1,000 students.

The participating schools each possessed features that are commonly found in middle schools, such as common planning time, flexible scheduling, team autonomy, and an overall structure that encourages collaboration and growth among teachers (Valentine, Clark, Hackmann, & Petzko, 2002).

The participants in this study were teachers of students in Grades 6–8 from each of these five schools. The participants completed 68 questions concerning distributed leadership within their school, school culture, and their self-efficacy. The study collected quantitative data utilizing the following three instruments, the Distributed Leadership Inventory (DLI), the School Culture Survey (SCS), and the Teacher

Self-Efficacy Scale (TSES).

Research Questions
Question 1.
What is the relationship between distributive leadership and the self-efficacy of teachers in suburban public middle schools in central New Jersey, as measured by the Distributed Leadership Inventory (DLI) and Teacher Self-Efficacy Scale (TSES)?

Question 2.
What is the relationship between distributed leadership and school culture in suburban public middle schools in central New Jersey, as measured by the Distributed Leadership Inventory (DLI) and School Culture Survey (SCS)?

Question 3.
What is the relationship between school culture and the self-efficacy of teachers in suburban public middle schools in central New Jersey, as measured by the School Culture Survey (SCS) and Teacher Self-Efficacy Scale (TSES)?

Method
The purpose of this correlational research study is to replicate Davis' (2014) study, which aimed to establish whether and to what extent there exists a relationship between distributed leadership, school culture, and teacher self-efficacy. Davis' study focused on elementary school teachers in southern Arizona. The focus of this study will be on teachers in public middle schools in Central New Jersey.

The study also sought to clarify the field's understanding of important phenomena through the identification of relationships between identified variables. A quantitative research design was best suited to answer the research questions as prior research has been primarily qualitative in nature–based around interviews and observations regarding

distributed leadership activities (Leithwood et al., 2007; Smylie et al., 2007; Spillane, 2006). This study is a non-experimental, relational study with a correlational design and a cross-sectional time dimension.

Instrumentation
Primary data were collected through an online survey using SurveyMonkey. The survey included three already existing, validated data collection instruments.

The three surveys measured the variables of distributed leadership, school culture, and teacher self-efficacy. All three surveys included Likert-scale items ranging from 1 = strongly agree to 5 = strongly disagree. Each of the three surveys was structured using an identical Likert scale. The survey consisted of 68 questions (the DLI has 23 questions, the SCS has 35 questions, and the TSES has 10 questions).

Additionally, questions were posed to respondents to obtain demographic descriptors including school, grade, role within the school, years of teaching, and gender.

The validated surveys include questions that focus on the factors of school culture, teacher self-efficacy, and distributed leadership. The Distributed Leadership Inventory (DLI) was used to measure teacher perceptions of distributed leadership; the School Culture Survey (SCS) was used to measure the variable of school culture; and the Teacher Self-Efficacy Scale (TSES) was used to measure the variable of teacher self-efficacy. Approval was granted to utilize each of these survey instruments.

Data Analysis
Research Question 1 focused on the relationship between distributed leadership and the self-efficacy of teachers. To determine an

individual score for each of the dimensions of distributed leadership, the scaled scores on each teacher survey were calculated for the three dimensions by adding up the points from the questions that corresponded with each dimension and calculating a mean for each dimension. To determine overall self-efficacy, the responses to each question were added together and then a mean was calculated. Standard deviations were also calculated. The correlational coefficient was calculated using the correlational coefficient with distributed leadership as the x value and self-efficacy as the y value.

Research Question 2 focused on the relationship between distributed leadership and school culture. To determine an individual score for each of the dimensions of distributed leadership, the scaled scores on each teacher survey were calculated for the three dimensions by adding up the points from the questions that corresponded with each dimension and calculating a mean for each dimension. To determine an individual score for each of the factors of school culture, the scaled scores on each teacher survey were calculated for the six factors by adding up the points from the questions that correspond with each dimension and calculating a mean for each dimension. The correlational coefficient was calculated using the correlational coefficient with distributed leadership as the x value and school culture as the y value.

Research Question 3 focused on the relationship between school culture and the self-efficacy of teachers. To determine an individual score for each of the factors of school culture, the scaled scores on each teacher survey were calculated for the six factors by adding up the points from the questions that correspond with each dimension and calculating a mean for each dimension. To determine the overall self-efficacy, the

responses to each question were added together and a mean was calculated. Standard deviations were also calculated. The correlational coefficient was calculated using the correlational coefficient with school culture as the x value and self-efficacy as the y value.

A Bivariate Pearson's Correlation Coefficient analysis was conducted on the obtained data regarding distributed leadership, school culture, and teacher self-efficacy. The individual respondents to the study were the unit of analysis. Both descriptive and inferential statistical data analyses were performed to identify relationships and correlations between variables and to answer the research questions. To determine if a particular subgroup was causing an inflated correlation coefficient, additional correlational analyses were conducted on subgroups with a response rate greater than 30.

Results of the Study

Research Question 1 focused on the relationship between distributive leadership and the self-efficacy of middle school teachers. The results of the correlational analysis indicate that there was a significant statistical relationship between the two variables. The correlation between the DLI and TSES was .405 (r=.405, N=162, p=.000). This represents a moderate/low, positive degree of correlation and was statistically significant at the .01 level of significance.

Additional analysis was conducted using Pearson correlation between the various dimensions of the DLI and the TSES to determine if a particular dimension of distributed leadership had a stronger relationship with teacher self-efficacy. The correlation between the support dimension of DLI and the TSES was .373 (r=.373, N=162, p=.000). This represents a low positive correlation and was statistically significant at

the .01 level of significance. The correlation between the supervision dimension of DLI and the TSES was .200 (r=.200, N=162, p=.011). This represents little if any degree of correlation and was statistically significant at the .05 level of significance. The correlation between the coherent leadership dimension of DLI and the TSES was .384 (r=.384, N=162, p=.000). This represents a low positive correlation and was statistically significant at the .01 level of significance. Although the supervision dimension had the lowest degree of correlation among the dimensions, each of the individual dimensions had a lower correlation to the TSES when compared with the correlation between the DLI and the TSES.

Further analysis was conducted using Pearson's correlation to determine the relationship between distributed leadership and teacher self-efficacy within the following subgroups: female, male, more than 20 years teaching experience, and special education/support teacher. The correlation between the DLI and the TSES for the female subgroup was .472 (r=.472, N=124, p=.000). This represents a moderate/low-moderate positive correlation and was statistically significant at the .01 level of significance. The analysis of the male subgroup for the relationship between the DLI and the TSES showed no statistically significant results.

The correlation between the DLI and the TSES for the more than 20 years teaching subgroup was .389 (r=.389, N=43, p=.010). This represents a low positive correlation and was statistically significant at the .01 level of significance. The correlation between the DLI and the TSES for the special education/support teacher subgroup was .407 (r=.407, N=32, p=.021). This represents a low-moderate positive correlation and was statistically significant at the .05 level of significance.

Research Question 2 focused on the relationship between distributive leadership and school culture in suburban middle schools. The results of the correlational analysis indicate that there was a statistically significant relationship between the two variables. The correlation between the DLI and SCS was .769 (r=.769, N=162, p=.000). This represents a high positive correlation and was statistically significant at the .01 level of significance.

Additional analysis was conducted using Pearson's correlation between the various dimensions of the DLI and the SCS to determine if a particular dimension of distributed leadership had a stronger relationship with school culture. The correlation between the support dimension of DLI and the SCS was .746 (r=.746, N=162, p=.000). This represents a high positive correlation and was statistically significant at the .01 level of significance. The correlation between the supervision dimension of DLI and the SCS was .489 (r=.489, N=162, p=.000). This represents a moderate positive correlation and was statistically significant at the .01 level of significance. The correlation between the coherent leadership dimension of DLI and the SCS was .667 (r=.667, N=162, p=.000). This represents a high-moderate positive correlation and was statistically significant at the .01 level of significance. Although the supervision dimension had the lowest degree of correlation amongst the dimensions, each of the individual dimensions had a lower correlation to the SCS when compared to the correlation between the DLI and the SCS.

Further analysis was conducted using Pearson's correlation to determine the relationship between distributed leadership and school culture within the following subgroups: female, male, more than 20 years teaching experience, and special education/support

teacher. The correlation between the DLI and the SCS for the female subgroup was .771 (r=.771, N=124, p=.000). This represents a high positive correlation and was statistically significant at the .01 level of significance.

The correlation between the DLI and the SCS for the male subgroup was .781 (r=.781, N=38, p=.000). This represents a high positive correlation and was statistically significant at the .01 level of significance.

The correlation between the DLI and the SCS for the more than 20 years teaching subgroup was .715 (r=.715, N=43, p=.000). This represents a high positive correlation and was statistically significant at the .01 level of significance. The correlation between the DLI and the SCS for the special education/support teacher subgroup was .732 (r=.732, N=32, p=.000). This represents a high positive correlation and was statistically significant at the .01 level of significance.

Research Question 3 focused on the relationship between school culture and the self-efficacy of middle school teachers. The results of the correlational analysis indicate that there was a statistically significant relationship between the two variables. The correlation between the SCS and the TSES was .434 (r=.434, N=162, p=.000). This represents a moderate/low positive correlation and was statistically significant at the .01 level of significance.

Further analysis was conducted using Pearson's correlation to determine the relationship between school culture and teacher self-efficacy within the following subgroups: female, male, more than 20 years teaching experience, and special education/support teacher. The correlation between the SCS and the TSES for the female subgroup was .483

(r=.483, N=124, p=.000). This represents a moderate positive correlation and was statistically significant at the .01 level of significance. The results of the analysis of the male subgroup for the relationship between the SCS and the TSES were not statistically significant.

The correlation between the SCS and the TSES for the more than 20 years teaching subgroup was .433 (r=.433, N=43, p=.004). This represents a low-moderate positive correlation and was statistically significant at the .01 level of significance. The correlation between the SCS and the TSES for the special education/support teacher subgroup was .548 (r=.548, N=32, p=.001). This represents a moderate positive correlation and was statistically significant at the .01 level of significance.

Summary of Analysis

The results of the investigation indicate that there is a statistically significant relationship between distributed leadership and teacher self-efficacy with a moderate/low positive correlation. There is also a statistically significant relationship between distributed leadership and school culture with a high positive correlation.

Finally, it was determined that there is a statistically significant relationship between school culture and teacher self-efficacy with a moderate/low positive correlation. The tables indicated below delineate that outcome more specifically.

Table 1 focuses on the relationship between distributive leadership and the self-efficacy of middle school teachers. The results of the correlational analysis indicate that there was a significant statistical relationship between the two variables. As displayed on

Table 1, the correlation between the DLI and TSES was .405 (r = .405, N=162, p = .000). This represents a moderate/low and positive degree of correlation and was statistically significant at the .01 level of significance.

Table 1

Pearson's Correlation Between DLI and TSES

		DLI	TSES
DLI	Pearson Correlation	1	.405**
	Sig. (2-tailed)		.000
	N	162	162
TSES	Pearson Correlation	.405**	1
	Sig. (2-tailed)	.000	
	N	162	162

** Correlation is significant at the .01 level (2-tailed).

In terms of the relationship between distributive leadership and school culture in suburban middle schools. The results of the correlational analysis indicate that there was a significant statistical relationship between the two variables. As displayed on Table 2, the correlation between the DLI and SCS was .769 (r = .769, N=162, p = .000). This represents a high and positive degree of correlation and was statistically significant at the .01 level of significance.

Table 2

Pearson's Correlation Between DLI and SCS

		DLI	SCS
DLI	Pearson Correlation	1	.769**
	Sig. (2-tailed)		.000
	N	162	162
SCS	Pearson Correlation	.769**	1
	Sig. (2-tailed)	.000	
	N	162	162

** Correlation is significant at the .01 level (2-tailed).

In terms of the relationship between school culture and the self-efficacy of middle school teachers the results of the correlational analysis indicate that there was a significant statistical relationship between the two variables. As displayed on Table 3, the correlation between the SCS and TSES was .434 (r = .434, N=162, p = .000). This represents a moderate/low and positive degree of correlation and was statistically significant at the .01 level of significance.

Table 3

Pearson's Correlation Between SCS and TSES

		SCS	TSES
SCS	Pearson Correlation	1	.434**
	Sig. (2-tailed)		.000
	N	162	162
TSES	Pearson Correlation	.434**	1
	Sig. (2-tailed)	.000	
	N	162	162

** Correlation is significant at the .01 level (2-tailed).

Several additional results emerged from the study. First, the correlation between distributed leadership and school culture was much stronger than any of the other relationships (which were moderate/low). Second, when examining the specific dimensions of distributed leadership, each dimension had a statistically significant relationship to both school culture and teacher self-efficacy, but the supervision dimension had a relationship to school culture and teacher self-efficacy that was of a lesser strength than the other dimensions.

Finally, of the correlational analyses of the subgroups that were statistically significant, each of the subgroups performed within +/- .1 on the size or correlation ordinal scale, with the exception of the special education/support teacher subgroup for question 3–this subgroup had a correlation coefficient .114 greater than the total population resulting in a moderate, positive relationship between school culture and teacher self-efficacy. The minimal differences in correlation across the sample (n=162) and subgroup samples for each research question confirms that no subgroup led to an inflated correlation coefficient.

Conclusions, Recommendations, and Implications for Leadership Development

School leaders today face unprecedented challenges due to rising expectations, limited funding, and the task of preparing students for a world that is changing rapidly due to technological innovation and globalization (OECD, 2009). Principals are expected to be more than good managers, they are increasingly being viewed as the key to large scale reforms and educational outcomes (OECD, 2009). A

school leader is more likely to experience success if they focus their role on promoting interactions between stakeholders that are consistent with best practice rather than focusing on their sole actions as a leader (Spillane, 2006).

The structure of a large middle school, with characteristics such as interdisciplinary teaming, common planning time, departmental specialization, extra-curricular activities, and flexible scheduling requires a principal to intentionally construct a framework where people, materials, and organizational structures work in concert for a common cause (Spillane, 2006).

A principal failing to construct such a framework and relying instead on a traditional top-down, authoritative structure has the potential to create an environment in which the school leader becomes overwhelmed by all-consuming tasks and distracted from their professional responsibilities (Beisser, Peters, and Thacker, 2014).

This research suggests that principals who are enabling in their bureaucratic approaches increase the probability of creating a climate and culture more conducive to transformational behavior. It is important that

principals do not become prisoners to

administrative demands and policies.

Through the implementation of a distributive leadership framework, a principal can share responsibilities with qualified staff while promoting a building-wide culture of trust that empowers teachers. Expanding decision making authority to teachers provides opportunities to improve school climate, teacher efficacy, and student achievement (Roney, Coleman, and Schlichting, 2007; Wahlstrom and Louis, 2008).

There is a relationship between school leadership, teachers' views of the functioning of an organization, and their sense of self-efficacy. Research has shown that a distributive perspective plays a key role in influencing school climate, teacher capacities, and motivation (Feng, Hao, Iles, and Brown, 2017; Coladarci, 1992).

Principals need to develop strategies that facilitate the behaviors this study suggests. First, they need to arrange their time in more value-added domains related to staff support and instructional delivery. This requires a mindset of relationship building as opposed to relationship management. This research, although limited to middle schools, strongly suggests the utility of such an approach.

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