

2018

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Recommended Citation

Lacks, Paige and Watson, Scott B. (2018) "The Relationship Between School Climate and Teacher Self-Efficacy in a Rural Virginia School System," *School Leadership Review*. Vol. 13 : Iss. 1 , Article 5.
Available at: <https://scholarworks.sfasu.edu/slr/vol13/iss1/5>

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The Relationship Between School Climate and Teacher Self-Efficacy in a Rural Virginia School System

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School climate is one of the most significant factors in solidifying an effective learning environment. In today's complex educational system, leaders face daily challenges in the world of high stakes testing and state accreditation that force them to ensure that they have implemented reforms that will provide sustained improvement in student achievement. As a result, school leaders and teachers must possess the ability to change and adapt to their conditions for continuous organizational improvement despite possible resistance from stakeholders. Moreover, with diverse teacher experience levels, leaders consistently assess and evaluate the instructional practices in their building to empower teachers to engage and motivate their students (Kelley, Thornton, & Daugherty, 2005). Thus, the school's educational leader and the climate that he or she helps to establish directly impacts the school's environment and teachers' perception of that environment.

Conceptual Framework

The conceptual framework for the study was primarily based on Albert Bandura's Social Cognitive Theory and Julian Rotter's Locus of Control Theory. First, Bandura publicly announced his theory in 1977, while he was a professor at Stanford University, and he continued to devote his research to the subject throughout his life. He then expanded his research to distinctively define self-efficacy and what it means to the teaching profession. Second, Rotter's Locus of Control Theory is essential to self-efficacy because it focuses on causal beliefs of actions and outcomes and whether those actions and outcomes have internal or external controls (Bandura, 1977; Rotter, 1966).

Social cognitive theory. In the 1960s, Alberta Bandura developed the Social Learning Theory, but after further research and study, in 1986, his theory evolved into what is today known as the Social Cognitive Theory. Through the Social Cognitive Theory, Bandura emphasized that the reciprocal interaction of a behavior, person, and environment is where learning occurs in a social setting (Boston University School of Public Health, 2013). Thus, there is a strong influence on social factors and the role of internal and external reinforcements that may affect those factors. What makes the Social Cognitive Theory unique compared to many other social theories is the way that it looks at how individuals acquire a behavior and their ability to maintain it coupled with determining the social environment in which one exhibits the behavior (Bandura, 1986).

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Locus of control theory. Julian Rotter's Locus of Control Theory, developed in 1966, is essential to self-efficacy. Rotter (1966) defined his theory in terms of one's general cross-sectional belief about feelings of internal and external controls that determine outcomes and actions. Individuals are classified based on a continuum from extremely internal to extremely external based on their beliefs (Mearns, 2014). The theory states that people who possess an internal locus of control will conclude that their self-efficacy is measured by factors they personally control. These people believe that they can control their own lives because responsibility lies within them. As a result, any success or failure that they encounter is solely due to their own efforts. In contrast, individuals possessing an external locus of control feel that outside factors for which they have no control determine outcomes and actions.

Self-Efficacy. Bandura (1986, 1997) proposes four sources of teacher's self-efficacy: mastery experiences, which he notes as the most significant factor, vicarious experiences, verbal persuasion, and physiological arousal. First, mastery experiences are defined by a teacher's perception of his or her past teaching experiences. Hoy (2003) asserts that if one has a positive perception (successful mastery), his or her expectations of teaching will be proficient, unless the amount of work to get the positive perception requires a massive work level that the teacher feels that he or she cannot sustain. In contrast, if one believes his or her teaching has been a failure, he or she is apt to think that future teaching performances will provide the same result.

Teacher self-efficacy. Ross (1994) researched teacher efficacy studies in over 88 settings and determined that teachers with a high sense of efficacy are more likely to "learn and use new approaches and strategies for teaching, use management techniques that enhance student autonomy, provide special assistance to low achieving students, build students' self-perceptions of their academic skills, set attainable goals, and persist in the face of student failure" (qtd in Hoy, 2003-2004). All teachers have a sense of self-efficacy; however, there are two specific types of belief systems that make up this broad term. First, a teacher's *personal* teaching efficacy is defined by a teacher's own feelings of confidence in terms of his or her teaching skills and abilities to improve student learning. The other belief, a *general* teaching efficacy, is based on a general belief that one has about the power of teachers to reach difficult children (Protheroe, 2008). General teaching efficacy relies heavily on external issues that are out of the teacher's control.

School Climate

Several researchers have defined school climate. Hoy and Miskel (2005) explained it as "the set of internal characteristics that distinguish one school from another and influence the behaviors of each school's members" (pg. 185). Van Houtte (2005) emphasized that school climate is comprised of common beliefs and shared experiences between school authorities and colleagues. Perhaps one of the most widely accepted definitions written by Haynes, Emmons and Ben-Avie (1997) stated that it is "the quality and consistency of interpersonal interactions within the school community that influence children's cognitive, social, and psychological development" (p. 322). Thus, due to its connection to attitude and perception, climate plays a significant role in the overall makeup of a school.

School climate and the principal. Perhaps one of the biggest factors in determining teachers' perception of school climate is the principal, or educational leader. Thus, creating a supportive school climate is the responsibility of the school leader. They must foster a community where teachers can share ideas and feel comfortable sharing experiences that positively influence the atmosphere (Meristo & Eisenschmidt, 2014). The everyday interactions that principals have with their teachers can affect trust and collegiality and the teachers' ability to influence decisions. Moreover, when such relationships exist, they impact student achievement and performance, as teachers feel supported and mutually respected (Edgerson et al, 2006; Friedkin & Slater, 1994). They also work together to problem solve and achieve common goals. As a result, teacher perceptions of support from their principal directly impact teacher commitment, turnover, and collegiality (Singh & Billingsley, 1998).

School climate and teachers. Collie, Shapka, and Perry (2012) examined the relationship between teachers' perceptions of their social-emotional learning and the climate within their schools. They measured three variables to determine the type and level of relationship that exists between the three: teachers' sense of stress, teaching efficacy, and job satisfaction. Sampling 664 elementary and secondary school teachers, each participant completed an online questionnaire to measure teacher perceptions of their school climate and social-emotional learning. Of the factors reviewed, teachers' perceptions of student motivation and behavior had the most significant impact on school climate. It was also named as a variable that meaningfully predicted one's teaching efficacy. Two other specific factors, workload stress and student behavior stress, were also highly noted as factors that determined one's sense of teaching efficacy (Collie, Shapka & Perry, 2012).

Purpose of the Study

The purpose of this study was to determine if a relationship exists between teacher perception of school climate and teacher self-efficacy and beliefs. The predictor variables of interest were collegial leadership, professionalism, academic press, and community engagement. The criterion variable was teacher self-efficacy level. Licensed teachers from two middle schools in rural southern Virginia were targeted to participate in this study.

Research Design

This study was quantitative in nature, using a correlational research design. A correlational design is a focused, straightforward study, which seeks to determine if a relationship exists between variables in a single group of subjects, and if such relationship does exist, it determines the strength, or lack thereof, of the relationship (Hoy & Miskel, 2005). It was conducted to determine if a statistical relationship existed between middle schools. The surveys for this study were distributed to all licensed teachers working at two middle schools in rural southern Virginia. The research questions were evaluated for a relationship between one or more of the four School Climate Index subscales (Tschannen-Moran, Parish and DiPaola (2006), and the Teacher Sense of Efficacy Scale (Tschannen-Moran, Woolfolk and Hoy (2001) using Pearson Product-Moment Correlation Coefficient statistics.

Research Questions

RQ1: Is there a relationship between teacher-perceived school climate (measured by the total School Climate Index) and teacher self-efficacy (measured by the Teacher Sense of Efficacy Scale)?

RQ2: Is there a relationship between teacher-perceived collegial leadership (as measured by the School Climate Index) and teacher self-efficacy (measured by the Teacher Sense of Efficacy Scale).

RQ3: Is there a relationship between teacher-perceived teacher professionalism (as measured by the School Climate Index) and teacher self-efficacy (measured by the Teacher Sense of Efficacy Scale).

RQ4: Is there a relationship between teacher-perceived academic press (as measured by the School Climate Index) and teacher self-efficacy (measured by the Teacher Sense of Efficacy Scale).

RQ5: Is there a relationship between teacher-perceived community engagement (as measured by the School Climate Index) and teacher self-efficacy (measured by the Teacher Sense of Efficacy Scale).

Sample

The sample for the study was comprised of middle school teachers employed at two different schools in one school division. The school system is located in Southside Virginia, a rural area known for its agricultural community. The system provided education services to approximately 4,584 students and employed 350 teachers during the 2014-2015 school year. The school district contains eight schools: four elementary, two middle, and two high schools. The research was performed in the two middle schools in the district. Both middle schools house grades 6-8, have similar demographics, and are located in rural areas. The sample for the proposed study consisted of all respondents from the total eighty-six licensed teachers.

The combined statistics of teachers from MS 1 and MS 2 produced several results. Sixteen percent of the teachers were in their first year of teaching, 33% had one to ten years of experience, 32% had 11 to 20 years of experience, and 19% had more than 20 years of experience. Sixty-five percent were female, and 35% percent were male. Fifty-eight percent had a Bachelor Degree as their highest level of education, 42% had a graduate degree. The ethnicity of the teachers was as follows: 76% white, 20% black, and 4% other. The total number of surveys returned was 56, which produced a 65% total return rate for both surveys at both school.

Instrumentation

The two instruments used in the study were School Climate Index (SCI), developed by Tschannen-Moran, Parrish and DiPaola (2006), and the Teacher Sense of Efficacy Scale (TSES), developed by Tschannen-Moran and Hoy (2001). Both instruments are commonly used for measuring data.

In order to capture the teachers' perception of their school climate, the instrument selected for the purpose of the study was the School Climate Index (SCI). The SCI consists of 28 questions ranked on a five-point Likert scale. The questions measured overall school climate by dividing the items into four subcategories. The model for SCI described major aspects of school climate through focusing on four specific subscales: collegial leadership, teacher professionalism,

academic press, and community engagement. The authors of the School Climate Index, Tschannen-Moran, Parish, and DiPaola (2006) provided strong reliability data for their study. The Cronbach's alpha coefficient of reliability for the full SCI was 0.96. Each of the four subscales also had a high reliability: collegial leadership (0.93), teacher professionalism (0.94), academic press (0.92), and community engagement (0.93).

The second instrument used in the study was the Teacher Sense of Efficacy Scale (TSES), also developed by Tschannen-Moran and Hoy (2001). This instrument was selected to capture teacher perceptions of their self-efficacy. The TSES consists of twenty-four questions ranked on a nine-point Likert scale. For each statement, the possible answers were as follows: A Great Deal = 9, Quite a Bit = 7, Some Degree = 5, Very Little = 3, and None at All = 1. The higher the composite score of the responses meant the higher the teachers' perception of his or her sense of self-efficacy. The authors of the Teacher Sense of Efficacy Scale, Tschannen-Moran and Hoy (2001), provided Cronbach's alpha reliability ratings of 0.94.

Procedures

Data collected through the two survey instruments, School Climate Index (SCI) and the Teachers' Sense of Efficacy Scale (TSES), were analyzed to determine if there was a relationship between school climate and teacher self-efficacy and beliefs. The researchers compiled the data in Excel and used a summary sheet to score each respondent's survey. Each survey was given a unique identification code to pair it with a scoring sheet so that it may be matched in the event of a discrepancy. The SCI scoring sheet was separated to provide a total score as well as a score for each of the four subcategories. The TSES scoring sheet included the total overall sum of each participant's score. The presentation of the data is shown for the SCI, TSES, and the various categorical means for the subgroups of the SCI survey.

Findings

The means and standard deviations for each of the criterion and predictor variables are listed in Table 1. The criterion variable was the total score from the Teacher Sense of Efficacy Scale (TSES). The predictor variables were the total scores from the School Climate Index (SCI) and the four subcategories of the SCI (collegial leadership, teacher professionalism, academic press, and community engagement).

Table 1

Descriptive Statistics for All Variables

Variable	<i>N</i>	Mean	S.D.
TSES Total	55	169.9	17.72
SCI Total	55	94.49	12.83
Collegial Leadership	55	23.71	5.29
Teacher Professionalism	55	30.18	4.01
Academic Press	55	19.67	3.48
Community Engagement	55	20.93	3.35

Statistical Results

A Pearson Product-Moment Correlation Coefficient analysis was conducted to test each question. Table 2 provides the Pearson correlation for each dependent variable.

Table 2

Pearson Correlations between Perceived School Climate and Teacher Sense of Efficacy

	TSES Total	p=
SCI Total	.190	.165
Collegial Leadership	.009	.948
Teacher Professionalism	.112	.416
Academic Press	.179	.190
Community Engagement	.393**	.003

n=55

**Highly Significant Correlation

Question one

Question one was as follows: Is there a relationship between teacher-perceived school climate (measured by the total School Climate Index) and teacher self-efficacy (measured by the Teacher Sense of Efficacy Scale)? The Pearson Product-Moment Correlation Coefficient was calculated between the SCI (M=94.49, SD= 12.83) and the TSES (M=169.9, SD = 17.72), which revealed a lack of significant correlation, $r(53) = .190, p = .165$. Teachers' sense of self-efficacy was not significantly correlated to teachers' beliefs about school climate.

Question two

Question two asked: Is there a relationship between teacher-perceived collegial leadership (as measured by the School Climate Index) and teacher self-efficacy (measured by the Teacher Sense of Efficacy Scale). The Pearson Product-Moment Correlation Coefficient was calculated to determine any relationship between collegial leadership (M=23.71, SD= 5.29) and teacher sense of efficacy (M=169.9, SD=17.72). The results of the test, $r(53) = .009, p = .948$, revealed that there was no significant correlation between collegial leadership and teacher self-efficacy.

Question three

Question three asked: Is there a relationship between teacher-perceived teacher professionalism (as measured by the School Climate Index) and teacher self-efficacy (measured by the Teacher Sense of Efficacy Scale). The Pearson Product-Moment Correlation Coefficient was calculated between teacher professionalism (M = 30.18, SD = 4.01) and teacher sense of efficacy (M=169.9, SD=17.72). A lack of significant correlation was shown as a result of $r(53) = .112, p = .416$. Teacher professionalism was not significantly correlated to teacher sense of efficacy.

Question four

Question four stated: Is there a relationship between teacher-perceived academic press (as measured by the School Climate Index) and teacher self-efficacy (measured by the Teacher Sense of Efficacy Scale). The Pearson Product-Moment Correlation Coefficient was calculated to determine if a relationship existed between academic press (M = 19.67, SD = 3.48) and teacher sense of efficacy (M = 169.9, SD = 17.72), and the results, $r(53) = .179, p = .190$, revealed a lack of significant correlation.

Question five

Question five stated: Is there a relationship between teacher-perceived community engagement (as measured by the School Climate Index) and teacher self-efficacy (measured by the Teacher Sense of Efficacy Scale). The Pearson Product-Moment Correlation Coefficient was calculated to conclude if a relationship existed between community engagement ($M = 20.93$, $SD = 3.35$) and teacher sense of efficacy ($M = 169.9$, $SD = 17.72$). The test revealed a positive significant correlation between community engagement and teacher sense of efficacy, as indicated by the results, $r(53) = .393$, $p = .003$. Thus, community engagement was significantly and positively correlated to teacher sense of self-efficacy.

Discussion and Conclusions

The preponderance of research supports the link between positive school climate and a sense of belonging to stakeholders through a supportive atmosphere promoting shared values and beliefs (Manning & Saddlemire, 1996). According to Taylor and Tashakkori (1995), teachers who work in schools with a positive school climate report higher job satisfaction compared to those working in schools with perceived negative climate. In addition, Bandura's Social Cognitive Theory analyzes cognitive, behavioral, and environmental factors of self-efficacy in conjunction with personal and social change (Bandura, 1986). Rotter's Locus of Control Theory (1966) relates to self-efficacy because it focuses on causal beliefs of actions and outcomes and whether or not those actions and outcomes have internal or external controls. Hoy (2003-2004) further stated that teachers with a high sense of self-efficacy typically have an easier time producing cognitive growth in their students and motivating them. Teachers who exhibit such characteristics recover quickly from setbacks and have an optimistic approach to trying new concepts or techniques.

The findings of the present study do not align well with results from other studies with the exception of relationship between teacher-perceived community engagement and teacher self-efficacy. Other researchers have found a connection from collegial leadership to teacher self-efficacy. Hipp (1996) discovered that principals who modeled leadership behaviors such as risk taking and cooperation had teachers with high levels of efficacy in their buildings. Lee, Dedrick, and Smith (1991) concluded that principals who modeled professional behavior and provided performance-based rewards had teachers with a high sense of efficacy. In addition, Goddard (2001) found that schools with principals who promoted shared decision making on school issues produced stronger teacher collective efficacy to help students to prosper compared to those who school leaders who did not share decision making with their teachers.

Chan, Chan, Cheung, Mgan and Yeung (1992) found that teachers' perception of self and of their pedagogical self were significant factors of teacher behavior, which was a predictor of student achievement. Moreover, Devos, Dupriez, and Paquay (2012) concluded that collaboration with colleagues helped to improve teacher self-efficacy. Angelle and Teague (2014) observed a strong relationship exists between collective efficacy and teacher leadership. Moreover, teachers who perceive that they have a leadership role in their school display higher levels of collective efficacy. Conner (2014) found that teacher relationships are essential for a successful school climate and that camaraderie is essential for building relations. When teachers have a relationship among themselves that fosters collaboration and communication, they produce

strong teacher-teacher and teacher-student relationships to optimize student learning and achievement.

Lee and Smith (1996) found that schools where teachers take collective responsibility for their students' academic success or failure instead of making excuses by blaming students for their own failure produced significantly higher student achievement gains. They also discovered that such schools produced smaller achievement gaps over time due to the strong collective efficacy of teachers who pushed their disadvantaged students to keep on pace with their peers.

Moreover, Goddard, LoGerfo, and Hoy (2004) studied ninety-six rural, suburban, and urban high schools and found the strongest predictor of student achievement in reading, writing, and social studies was a school's collective efficacy, which outranked variables including school size, minority enrollment, students' socioeconomic status, and students' prior achievement.

Tschannen-Moran, Woolfolk, Hoy and Hoy (1998) concluded community factors impact local schools: "conflict, violence, or substance abuse at home or in the community; the value placed on education at home; the social and economic realities of class, race, and gender; and the physiological, emotional, and cognitive needs of a particular child all have a very real impact on a student's motivation and performance in school" (p. 204). In addition, Goddard, Hoy, and Hoy (2000) discovered that a negative socioeconomic status of community can be offset when a positive relationship exists between collective efficacy of stakeholders and student achievement. Belfi, Gielen, DeFraine, Verschveren and Meredith (2015) discovered that a relationship between collective teacher efficacy and school socioeconomic status existed between the two factors but that teachers' perceptions of their school's social capital was the main factor in their relationship.

In conclusion, all stakeholders within a school and community help to form the school's climate. Because a teacher has the most day-to-day interactions with students while he or she is at school, the teacher has an opportunity to shape the school into a positive, effective learning environment or a negative, ineffective one. Thus, the ability of a teacher to be effective in his or her classroom is paramount for a school's success. Even though there are many factors that influence a school's climate, research has pointed to teacher self-efficacy as one of the most conclusive. Teachers who believe that they have the ability to make a positive impact on their students by helping them make advances in their learning and growth embody a strong sense of self-efficacy. Research supports that a positive correlation exists between teacher self-efficacy and student achievement (Protheroe, 2008; Hoy, Sweetland, & Smith, 2002). Thus, it is imperative that school leaders take note of the research that identifies teacher self-efficacy and its association with school climate.

This research data for this study did not reflect and support prior research studies that show that a relationship exists between overall school climate and teacher self-efficacy. Instead, this study showed that there was no correlation to school climate and teacher self-efficacy as well as teacher self-efficacy and collegial leadership, teacher self-efficacy and teacher professionalism, and teacher self-efficacy and academic press. None of these factors, therefore, aligned with the research presented that shows that a positive relationship does exist between school climate and teacher self-efficacy. The present research did not show that a relationship exists between teacher school climate and self-efficacy except for the area of teacher self-efficacy and

community engagement. The relationship was a strong, positive correlation demonstrating that when one variable (either the teacher self-efficacy or community engagement) increases, the other increases as well.

Implications

Results from this research indicated that a statistical significance only existed in the correlation between teacher self-efficacy and community engagement. The statistical tests included indicated a positive correlation between the two factors. This finding may mean that schools that are located in communities where stakeholders become involved in their school's activities and outreach projects have teachers with higher self-efficacy compared to communities that have stakeholders that do not become engaged in their local school. Perhaps a focus on how a community engages in a school is more of an indicator of teacher self-efficacy versus just the overall fact of if stakeholders in the community are engaging or not.

Teachers notice that when their community supports the work that they are doing in the classroom to grow the future leaders of their community (Tschannen-Moran & Woolfolk Hoy, 2001). Communities with stakeholders who have a vested interest in student growth and learning may positively affect teacher self-efficacy. Moreover, an implication of this study may be that there is more of an effect of community engagement on teacher self-efficacy compared to the attitudes and behaviors specifically controlled by stakeholders such as principals, teachers, and students within the school building.

Limitations

This research study was limited to two middle schools located in rural southern Virginia. Out of eighty-six possible participants, fifty-six participants participated by completing both the Teacher Sense of Efficacy Scale (TSES) and the School Climate Index (SCI). Based on the location in which the study was conducted, results from this research may not be used to make several generalizations. First, since data were gathered from teachers in the middle school setting, the results may not be applicable to elementary school and high school populations. Moreover, the research was conducted at schools located in a rural setting, so generalizations may not be made by schools located in urban or suburban regions. Therefore, principals and teachers in the elementary school and high school settings as well as in urban and suburban areas should use caution when generalizing the study's findings.

Recommendations for Future Research

Based on the research findings, more research is recommended to further the understanding of the relationship between school climate, teacher self-efficacy, and teacher beliefs. The following recommendations should be considered for further study:

1. A qualitative study would help to bring a deeper understanding of the thoughts, feelings, and attitudes of participants about their perceptions of school climate and its impact on teacher self-efficacy.
2. This study could benefit from having a larger sample size to include middle schools from other school districts. Also, this study should be replicated in multiple states in multiple school districts to determine possible geographic similarities and differences.

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