

Principal Self-Efficacy, School Climate, and Teacher Retention: A Multi-Level Analysis

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This article presents the findings of a correlational study that examines the relationship among the variables of principal self-efficacy, school climate, and teacher retention. A purposeful sample of 11 principals from a southeastern Texas school district were given the Principal Sense of Efficacy Scale to determine each individual's level of self-efficacy. Simultaneously, a sample of 233 current and former teachers completed the Organizational Climate Index to measure the school climate of each participating school. The results of the multi-level analysis indicate that overall a relationship does not exist between either principal self-efficacy and teacher retention or principal self-efficacy and school climate. However, findings do suggest a relationship between teacher retention and school climate. More specifically, teachers are more likely to remain employed at campuses that are less influenced by vocal parent and citizen groups.

Cet article présente les résultats d'une étude corrélationnelle portant sur le rapport entre trois variables : l'efficacité personnelle des directeurs d'école, le climat scolaire et la rétention des enseignants. Suivant un échantillonnage dirigé, 11 directeurs d'un district scolaire dans le sud-est du Texas ont répondu à un questionnaire portant sur leur sentiment d'efficacité personnelle. Pendant la même période, 233 enseignants (anciens et actuels) ont complété un questionnaire sur le climat organisationnel de sorte à mesurer le climat scolaire dans chaque école participante. Les résultats d'une analyse à plusieurs niveaux indiquent que, globalement, il n'y a pas de lien entre l'efficacité personnelle des directeurs et la rétention des enseignants, ni entre l'efficacité personnelle des directeurs et le climat scolaire. Toutefois, les résultats suggèrent un rapport entre la rétention des enseignants et le climat scolaire. Plus précisément, les enseignants sont plus portés à maintenir leur poste dans des écoles qui sont moins influencées par des groupes protestataires de parents et de citoyens.

Teacher retention is an important issue principals must address (Brown & Wynn, 2009). The impact of low teacher retention could have an adverse effect on school climate, student achievement, and the district budget (Joiner, 2009; Kukla-Acevedo, 2009). Unfortunately, retaining teachers has become a problem for the field of education (Harper, 2009). Most schools are led by “good” principals, but if the climate is not collegial and supportive, teachers choose to leave the profession (Devos & Bouckennooghe, 2009). A “good” principal is defined as one who provides assistance to teachers, articulates and communicates school goals, and enforces the rules of student conduct (Ballou & Podgursky, 1995). Equally as important, campuses may be filled with top-notch teachers, who support each other in all aspects of the profession, but without a competent and effective leader, teacher retention may be low (Russell, Williams, & Gleason-Gomez, 2010). In other words, can the combination of a “good” principal and a positive

school climate be the recipe school districts have been looking for to maximize teacher retention at the individual campus level?

Teacher retention is often researched by looking independently at many factors, such as sense of value, job satisfaction, principal self-efficacy, and school climate (Barmby, 2006; Brown & Wynn, 2009; Buchanan, 2010; Keigher & Cross, 2010; Russell, 2005). A teacher's decision to stay or leave their campus, district, or the profession has been found to have a direct relationship with his or her principal's self-efficacy and school climate (Brown & Wynn, 2009; Coley, 2009; Kukla-Acevedo, 2009). The combined relationships of principal self-efficacy and school climate have not been analyzed enough to provide guidance to school districts on effective practices to retain teachers. Tschannen-Moran and Gareis (2004) defined principal self-efficacy as a principal's perceived judgment of his/her ability to effect change. Teachers report principals with a high self-efficacy as the most important factor when deciding to remain at a school, while subsequently reporting that a positive school climate often supports their decision to stay (Ndoye, Imig, & Parker, 2010).

Research Problem

Teacher retention remains a constant challenge for the field of education. Each year a greater percentage of teachers are choosing to either "move" to another campus or school district or "leave" the profession all together. Based on a 2014 report published by the National Center for Education Statistics (NCES), 9.0% of public-school teachers and 20.0% of private school teachers surveyed reported leaving the profession during the first three years (Goldring, Taie, & Riddles, 2014). Additionally, of the 3,377,900 public school teachers who taught during the 2011–12 school year, 15.8% either left their campus to relocate to another one ("movers") or chose to leave the profession ("leavers") (Goldring et al., 2014).

Low teacher retention in a school district has been found to adversely affect student achievement by disrupting the educational community (Joiner, 2009). Additionally, it has been found to negatively impact the district budget, due to the amount of monies spent on recruiting and training teacher replacements (Joiner, 2009). In 2007, the National Commission on Teaching and America's Future (NCTAF) examined five schools in an 18-month study of the costs of teacher turnover. Findings of this study indicate that regardless of the size of the district and the amount of monies spent on or towards recruitment, hiring, and retention, when teachers left the district, the impact on the district budget was substantial.

The professional relationships of teachers and the educational programs of the institution help to foster a successful learning environment for students (Elfers, Plecki, & Knapp, 2006). When professional relationships are disrupted by teachers exiting the campus, learning is interrupted and student achievement suffers. Levitz, Noel, and Richter (1999) found no way to separate the success of an institution and the success of its students showing that teacher retention played a large role in the campus' formula for success. Barley and Beasley (2007) confirmed this relationship with their case study of 21 rural schools concluding that those schools with the highest teacher retention also maintained the highest student success.

There are many factors influencing a teacher's decision to remain in or leave their current position (Buchanan, 2010; Fontaine, Kane, Duquette, & Savoie-Zajc, 2011; Ingersoll & Smith, 2003). Perrachione, Petersen, and Rosser (2008) validated several factors and defined support from a competent leader and a positive school environment as prevailing external factors in teacher retention. Proposed solutions to reduce teacher turnover are to increase support for

beginning teachers, improve teacher salaries, increase teachers' influence in school-wide decision-making, and reduce student discipline problems (Ingersoll, 2002). However, none of these solutions address the most influential factors validated by Perrachione et al. (2008) with regard to support from a self-efficacious principal and a positive school climate.

Principal self-efficacy, when measured by administrator support of teachers, is an important factor in solving the problem of teacher retention (Brown & Wynn, 2009). This support can be measured by looking at principal self-efficacy as it relates to the management of personnel (Devos & Bouckenoghe, 2009). A principal's self-efficacy involves his/her ability to support teachers as a dynamic part of the retention process (Tschannen-Moran & Gareis, 2004). For example, Tschannen-Moran and Gareis (2004) looked at various impacts of a principal's self-efficacy on aspects of school climate and was successful in validating their instrument, *Principal Sense of Self Survey*. Tschannen-Moran and Gareis' (2004) research found that without competent and effective principal leadership, student achievement and the overall success of the campus, including teacher retention, is not possible.

Another factor influencing teacher retention is school climate which has been commonly defined as: (a) a professional environment (Waddell, 2010), (b) working conditions (Buchanan, 2010), and (c) building factors (e.g., small classrooms, older equipment, insufficient technology) (Thornton, Perreault, & Jennings, 2008). Regardless, when teachers make decisions about staying or leaving a campus or district, school climate is a factor (Kukla-Acevedo, 2009). In a study of a college faculty, a negative school climate contributed greatly to individual's intentions to leave the university (Jayakumar, Howard, Allen, & Han, 2009). Kukla-Acevedo (2009) also found that conditions in the workplace significantly influenced the decision of first year teachers to stay or leave.

Research Purpose and Questions

The purpose of the current study was to examine the dynamics among principal self-efficacy, school climate, and teacher retention. The research questions addressed were:

1. Is there a relationship between principal self-efficacy and school climate?
2. Is there a relationship between principal self-efficacy and teacher retention?
3. Is there a relationship between school climate and teacher retention?

Literature review

Teacher Retention

Teacher retention has been the focus of many studies. In 2008, the Strategic Management of Human Capital in Education Project (SMHC) task force constructed its key vision to recruit, develop, reward, and retain talented teachers in every classroom and talented administrators on every campus (Odden, 2009). Research has been concentrated on the factors influencing a teacher's decision to stay or leave, costs associated with low teacher retention, and the effects low teacher retention have on student achievement, budgets, and school climates (Barmby, 2006; Boe, Cook, & Sunderland, 2008; Frank, 1999; Strunk & Robinson, 2006). Research conducted by The New Teacher Project (TNTP) found that principals have the power to convince teachers to stay longer (TNTP, 2013).

Strunk and Robinson (2006) analyzed the 1999-2000 *Schools and Staffing Survey* reporting teachers were likely to leave if: (a) they are specialized instructors; (b) they have a probationary teaching certificate; (c) they are less experienced; (d) the racial composition of the students is heavily minority; (e) the students' racial composition is less matched to their own race/ethnicity, and for teachers of some races; or (f) the teaching staff's racial composition is more matched to their own race/ethnicity. While it is noted these are important factors when looking at teacher retention, the current study did not include the areas addressed in Strunk and Robinson's study. The factors affecting teacher retention focused on in the current study are principal self-efficacy and school climate.

School climate and the principal's impact on that climate are also contributing factors in teacher retention. In a two-part study by Elfers et al. (2006), school climate was found to be a determining factor in teacher retention and in-district mobility. The purpose of this study was to gain insight in the way teacher mobility occurs within a state system, with close attention on mobility at the school and district level. Survey results indicated a majority of teachers considered the school climate, including other staff members and a collegial atmosphere, as a reason to remain on their campus (Elfers et al., 2006). Findings also revealed teachers viewed the principal's impact on school climate as a determining factor in retention decisions. The less effective the principal was in creating a positive school climate, the more likely it was that a teacher would leave that campus. However, some teachers noted that individual support from a principal might have been a reason to stay even if the climate was not positive.

A similar discovery of the principal's impact was made by Smethem (2007) who looked at not only retention of beginning teachers, but also how they chose teaching to begin with and how this influences their ideas of staying in the profession. The study investigated beginning teachers' views on their work, issues of motivation, coping with change, the impact of induction, and intention for career development in the early years of teaching. Findings suggested overall motivation and intention to remain in the field was reduced by negative relationships with colleagues and school culture. Conversely, encouragement, positive feedback from administrators and colleagues, and a sense of success were found to increase retention among all teachers studied (Smethem, 2007).

Boe, Cook, and Sunderland (2008) looked at national survey data to examine claims regarding teacher retention. The purpose of the study was to quantify trends in (a) attrition as those who left the teaching profession, (b) teaching area transfers as those who move into a new subject area, and (c) school migration as those who moved from one school to another either in or out of the current district, and investigate the claims of excessive teacher turnover as the predominant source of teacher shortages.

Boe et al. (2008) discovered earlier research on why teachers leave or move around in the profession is plentiful, but little was shown with actual numbers attributed to these reasons. The sample for this study was data collected from NCES' *Schools and Staffing Survey* (SASS; 1990-1991, 1993-1994, and 1999-2000) and the following year *Teacher Follow-Up Survey* (TFS; 1991-1992, 1994-1995, and 2000-2001). The findings of this research confirmed the previous literature indicating a significant increase in teacher turnover from the years reported in this study. This study did have somewhat inflated numbers by including those who changed subjects taught and migrated to a new school, but the overall increase was proportionate to what was reported annually. Findings reinforced the high percentage of teacher turnover in the nation concluding that one in four teachers annually choose to leave the profession, transfer out of a school district, or migrate within a school district.

Principal Self-Efficacy

Self-efficacy is a personal conclusion about an individual's abilities to produce a desired outcome (Bandura, 1994, 1997). A principal's belief that he can retain teachers is a necessary trait for a good leader (Tschannen-Moran & Gareis, 2004). In several articles, principal self-efficacy is depicted as principal leadership (Brown & Wynn, 2009; Ndoye et al., 2010), principal ability (Buchanan, 2010), and administrative support (Russell et al., 2010). The self-efficacy of school leaders and the school climate they create at their campuses is an important relationship when analyzing teacher retention.

In 2004, Tschannen-Moran and Gareis conducted a study to identify supportive elements associated with stronger self-efficacy in principals. The purpose of this study was to examine to what extent personal factors, principal assessments, and school contexts contributed to the overall self-efficacy of a principal. No significant correlations were found between school setting, school level or student body and the principal's efficacy. However, data did suggest the way principals view the quality of their school climate is related to the way they view their own efficacy as principals; indicating relational implications between school climate and principal self-efficacy.

Principal self-efficacy is a broad term that encompasses a variety of variables from implementation of leadership practices to impact on school climate. Diminished leadership capabilities, otherwise described as principal self-efficacy, have an adverse effect on teacher retention (Mason & Schroeder, 2010). In a mixed methods case study, Devos and Bouckenooghe (2009) explored how principals' conceptions about their role as a school leader contributed to a better understanding of their leadership behavior and how it was related to school climate. Findings showed the principal who possessed a more people-minded leadership style lead a campus with a healthier school climate. The people-minded leader was more self-efficacious in their ability to provide resources and support teachers, therefore leading to a positive and healthy school climate.

In a study by Brown and Wynn (2009), principal leadership was a factor used to analyze teacher retention, attrition, and transfer rates. Findings revealed that all principals identified their main role in retaining teachers to be support. Likewise, when asked why teachers leave the profession, all participants identified lack of support as the primary reason. Within the area of support, several principals detailed the need for personal confidence in their own abilities as leaders before being able to give teachers the proper support needed. Another finding was the importance of their own ability to create a collegial environment free of dominating power; which fosters teacher's feeling of success and further increases retention. However, it should be noted that the Brown and Wynn (2009) research was a qualitative study. This study, on the other hand, utilized a correlational quantitative design so the findings from this research added to the literature, but were somewhat different from the Brown and Wynn research.

A year later, Buchanan (2010) examined the reasons why former teachers left the profession with no desire to return to education. The purpose of the study was to gather data from teachers who had left and sought careers in other areas with no desire to return to teaching and look at those reasons they left. Findings indicated that overall, lack of principal support was a major factor in determining whether or not to continue as a teacher. Similar to the previous study, principal support and the principal's ability to provide that support had an impact on teacher retention.

In their pilot study, Russell et al. (2010) examined teachers' perceptions of factors that

influence turnover. The purpose of the study was to determine the degree in which age, fair-pay, employee benefits and administrative support predict the likelihood a teacher would leave. Overall, participants globally indicated their principals were relatively skilled administrators. However, after all the data was analyzed, it was determined, participants who scored their administrator as incapable of leading also reported a high likelihood of leaving the profession within the next two years.

Using archived data from the 2006 *North Carolina Teacher Working Conditions Survey*, Ndoye et al. (2010) conducted a study to examine the relationships among teacher empowerment, school leadership, and intentions to stay or leave the profession. Results revealed that leadership was the strongest predictor of charter teachers' intentions to stay or leave their current position. The findings from these studies indicate that regardless of the terms used to describe principal self-efficacy, teacher retention is impacted.

School Climate

Teacher job satisfaction and how this influences a school's climate affects teacher retention. Perrachione et al. (2008) identified teacher's satisfaction with their school to be a large contributing factor to their decision to stay or leave. Within the category of satisfaction, specifically the study addressed working conditions and school climate as defining factors in this category. Results from this study showed a teacher's satisfaction with their school climate to be a large contributing factor to a decision to stay or leave along with the variables of personal teaching efficacy, working conditions, and job satisfaction.

School climate, illustrated as workplace conditions, was also shown to impact teacher retention. Kukla-Acevedo (2009) conducted a study to explore whether workplace conditions related to teacher mobility decisions. Three independent variables were extracted to represent teachers' perceptions of school climate: (a) classroom autonomy, (b) administrative support, and (c) behavioral climate. The findings indicated that independently classroom autonomy and behavioral support had no significant influence on a teacher's decision to stay; yet administrative support was the strongest factor in this study. However, when the three variables were combined into one composite score, school climate was a significant indicator of teacher turnover. The Kukla-Acevedo (2009) research had several limitations that should be noted. The author noted that "Because of the structure and availability of the data, the time frame of the study was limited to one point in time, presenting statistical and theoretical challenges" (p. 451).

Douglas (2010) examined the relationship of school climate and teacher commitment in elementary schools. Findings from this study indicated there was a relationship between school climate and a teacher's commitment to stay at their campus. Specifically, collegial leadership and professional teacher behavior were found to be good predictors of teacher commitment.

In sum, the literature suggests that teacher turnover is a problem faced by administrators every year (Boe et al., 2008). Additionally, research has found school leaders have an impact on school climate directly affecting teacher retention (Devos & Bouckenooghe, 2009).

Theoretical Framework

Self-efficacy is a personal judgment of an individual's capabilities to design a course of action to produce a desired outcome (Bandura, 1994, 1997). From Bandura's Social Cognitive Theory, where human behavior is identified as an interaction of personal factors, behavior, and the

environment, comes the cognitive construct of self-efficacy. An individual's relationships draw from his/her own beliefs and cognitive competencies that have been developed and affected by the influences of their environment. Accordingly, the relationship between the principal, their behavior, and school environment is reciprocal with each creating change within the other (Bandura, 1994, 1997). Tschannen-Moran and Gareis (2004) upheld the relationship of principal self-efficacy and effective leadership capability stating that "good principals are widely acknowledged as the cornerstones of good schools" (p. 3).

Organizational climate theories stem from the research concerning organizational management, and have evolved in the pursuit of effective management theory. Several principles combine to provide an outline for the development of an effective organizational climate. The major themes in the literature suggest supporting teamwork, developing an enabling culture, and developing a shared vision create an effective organizational climate (Senge, 1990). In education, organizational climate commonly refers to a school's features, morale, and/or persona (Hoy & Miskel, 2008). More specifically, school climate has included variables such as collegiality and consensus, administration's leadership, influence, support, and teachers' contentment and commitment (Hoy, Smith, & Sweetland, 2002).

Methods

Participants

A purposeful sample of 11 principals from a suburban school district in southeast Texas participated in this study. Given that the researchers were interested in assessing school climate, coupled with the teacher retention issues faced by this particular school district, the criteria for participation required the principals to have a minimum of two years of experience as the principal at their respective campus. All of the principals who met this criterion participated in this study. The majority of the principals were female ($n = 9$; 81.8%) and all of them were Caucasian. On average, the principals reported having 6.5 years of experience at their current campus, 7.3 years of experience within the participating school district, and 10.6 years of experience as a campus administrator of some kind, including assistant principal.

A purposeful sample of 233 teachers who currently were or had formerly been employed at the participating campuses also participated in this study. The teachers were separated into two groups that are referred to as stayers ($n = 133$; 57.1%) and leavers ($n = 100$; 42.9%). The majority of the teachers in both categories were female (75.9% stayers, 82.0% leavers) and on average had been employed in the school district for 10 years. For purposes of this study, leavers were defined as teachers that left their respective campus for any reason including relocating to another campus or district or leaving the profession.

Instrumentation

Principal sense of efficacy scale. The *Principal Sense of Efficacy Scale* (PSES) (see Appendix A) was developed as an adaptation of a similar scale created for teachers (Tschannen-Moran & Gareis, 2004). Initially, 50 items were developed to gain a clear picture of various aspects of principals' work. These items were based on the professional standards put forth by the Interstate School Leaders Licensure Consortium (ISLLC) and submitted for review to a panel of experts, which included three professors of educational leadership and one practicing

Table 1

Factor Descriptions for OCI

Factors of OCI	Description
Collegial Leadership (CL)	Meeting the social needs of the faculty Achieving the goals of the school
Professional Teacher Behavior (PTB)	Respect for colleague competence Commitment to students Autonomous judgment Mutual cooperation and support
Achievement Press (AP)	A school that has high but achievable academic standards and goals
Institutional Vulnerability (IV)	Extent to which the school is susceptible to vocal parent and citizen groups

superintendent. The instrument was field tested with 10 former principals to check for the clarity, appropriateness, and gain additional feedback. This field test was followed by a pilot study of 544 principals from public schools across Virginia. The final survey consists of 18 items which assess principals' self-perceptions of their capability to accomplish several aspects of school leadership including management, instructional leadership, and moral leadership using a 9-point Likert scale. Composite scores were created for each participant where greater composite scores equate to greater participant self-efficacy (Tschannen-Moran & Gareis, 2004). Cronbach's alpha of internal consistency was 0.91.

Organizational climate index. The *Organizational Climate Index* (OCI) (see Appendix B) was developed from a combination of the *Organizational Health Index* (OHI) and the *Organizational Climate Descriptive Questionnaire* (OCDQ), as a revision of the *School Climate Index* (SCI) (Hoy et al., 2002). The instrument was developed in a pilot study of four high schools in Ohio. Items were chosen from the OHI and OCDQ and as hypothesized, were able to determine the climate of the school based on four predicted elements. This 27-item survey measures elements of school climate in terms of openness and health by looking at factors such as: collegial leadership, professional teacher behavior, achievement press, and institutional vulnerability (see Table 1). Participants rate each item using a 4-point Likert-type scale. The Cronbach's alpha coefficients of reliability are: institutional vulnerability (.87), collegial leadership (.94), professional teacher behavior (.88), and achievement press (.92).

The OCI has been validated at all three levels of K-12 education. Hoy et al. (2002) originally validated this instrument for use at the high school level. A separate study was done by Douglas (2010) to validate the OCI to be used at the elementary level. To accomplish the validation Douglas (2010) surveyed 67 elementary schools and 1,353 teachers (Cronbach's alphas: institutional vulnerability (.69), collegial leadership (.88), professional teacher behavior (.88), and achievement press (.75)). In order to validate the survey at the middle school level, a pilot study was conducted using one of the middle schools located within the school district of interest (Cronbach's alphas: institutional vulnerability (.73), collegial leadership (.70), professional teacher behavior (.90), and achievement press (.74)) (Dahlkamp, 2013).

Data Collection Procedures

Prior to data collection ethics approval was granted. Upon receiving ethics approval an

introductory email was sent to all principals that met our criteria. The email explained the purpose of our proposed project and the process we intended to use to collect data followed by a link to the electronic PSES survey. After each principal agreed to participate, teachers from their school were sent a similar introductory email using publicly available email addresses. Teachers were requested to respond to the OCI survey even if they had left their previous teaching position.

Data Analysis

Given the nested structure of the data, teacher retention and school climate occurring at the teacher level (Level 1) and principal self-efficacy at the school level (Level 2), the unit of analysis created a methodological dilemma. In the past, researchers have chosen to address this issue by aggregating individual level variables to the group level (e.g., school) or assigning group level variables to the individual level (e.g., teacher). This statistical strategy often faces many challenges, such as aggregation bias, heterogeneity of regression among groups, and misestimated standard errors (Raudenbush & Bryk, 2002). To address these issues, a multilevel data analysis technique, hierarchical linear modeling (HLM), was used to answer the research questions.

Hierarchical Linear Modeling (HLM) has distinct advantages over other single-level analysis techniques, such as Pearson Product Moment Correlations. Applying a maximum likelihood estimation procedure, HLM allows for the analysis to be conducted simultaneously at multiple levels by using procedures that allow the researcher to examine relationships among variables within a nested structure, such as teachers within a school. Therefore, using HLM prevents the bias toward the rejection of the null hypothesis and, thus, the inflation of Type-I errors (Frank, 1999; Raudenbush & Bryk, 2002).

For purposes of the analysis, Level 1 was the teacher level and Level 2 was the school level. First, an estimation of an unconditional or intercept only model was done to determine the existence and degree of unexplained variance in mathematics self-efficacy and achievement between classrooms. Second, the Means as Outcomes Model, consisting of a continuous Level 2 predictor (principal self-efficacy) and Level 1 outcome variable (school climate), was used. Third, the Means as Outcome Logistic Regression Model, consisting of one continuous Level 2 predictor (principal self-efficacy) and a binomial Level 1 outcome variable (teacher retention: 0 = Stayers; 1 = Leavers) was deemed most appropriate. Last, the Logistic Random Intercept and Slope Model, consisting of one continuous Level 1 predictor (school climate) and a binomial Level 1 outcome variable (teacher retention: 0 = Stayers; 1 = Leavers), was used. All variables were of continuous measurement except for teacher retention (see Table 2).

Table 2

Level 1 and Level 2 Variables

Teacher Level Level 1	School Level Level 2	Measurement
School Climate		Organizational Climate Index
	Principal Self-Efficacy	Principal Self-Efficacy Scale
Teacher Retention		Teacher left or remained on campus

Findings

Unexplained Variation across Schools

Given that the teachers were nested within schools, it was necessary to first determine whether or not the use of a multi-level analysis, such as hierarchical linear modeling (HLM), was deemed necessary. This was accomplished by utilizing an HLM model, the one-way ANOVA with random effects model (also known as the null or unconditional model), to determine whether unexplained variance existed between schools for each of the dimensions of school climate. Findings supported unexplained variation between schools for all four dimensions of school climate. Institutional Vulnerability displayed the largest amount (18.8%) of unexplained variation across campuses, while Professional Teacher Behavior had the least amount (6.3%).

Findings indicated that unexplained variation existed in Collegial Leadership between schools ($\chi^2 = 46.08, p < .001$). The intraclass correlation (ICC), or the ratio of between-group variance to total variance, was .171, indicating that 17.1% of the overall variation in Collegial Leadership lies between schools. Findings indicated that unexplained variation existed in Professional Teacher Behavior between schools ($\chi^2 = 27.04, p < .001$). The ICC was .063, indicating that 6.3% of the overall variation in Professional Teacher Behavior lies between schools.

Findings indicated that unexplained variation existed in Achievement Press between schools ($\chi^2 = 49.17, p < .001$). The ICC was .171, indicating that 17.1% of the overall variation in Achievement Press lies between schools. Findings indicated that unexplained variation existed in Institutional Vulnerability between schools ($\chi^2 = 56.64, p < .001$). The ICC was .188, indicating that 18.8% of the overall variation in Institutional Vulnerability lies between schools.

Principal Self-Efficacy and School Climate

Collegial leadership. Results indicated that the principal's level of self-efficacy does not have a statistically significant influence on the Collegial Leadership of his or her school's climate, $\gamma_{01} = -.000106, t(9) = -0.368, p = .721$. There was insufficient evidence to suggest that the principal's self-efficacy levels had any influence on meeting the social needs of the faculty or achieving the goals of the school (see Table 3).

Professional teacher behavior. Results indicated that the principal's level of self-efficacy does not have a statistically significant influence on the Professional Teacher Behavior

Table 3

Collegial Leadership: Means as Outcomes Model

Fixed Effects	Coefficient(SE)	t (df)	p-value
Model for intercept (β_0)			
Intercept (γ_{00})	0.094214 (0.0028)	33.49 (9)	< 0.001
PSE (γ_{01})	-0.000106 (0.0003)	-0.368 (9)	0.721
Random Effects (Variance Components)			
Var. in school means, (τ_{00})	0.00007	43.82 (9)	< 0.001
Var. within schools, (σ^2)	0.00029		

of his or her school's climate, $\gamma_{01} = -.000196$, $t(9) = -1.574$, $p = .150$. There was insufficient evidence to suggest that the principal's level of self-efficacy had any influence on the respect for colleague competence, commitment to students, autonomous judgment, or mutual cooperation and support of the teachers (see Table 4).

Achievement press. Results indicated that the principal's level of self-efficacy does not have a statistically significant influence on the Achievement Press of his or her school's climate, $\gamma_{01} = -.000157$, $t(9) = -0.542$, $p = .601$. There was insufficient evidence to suggest that the principal's levels of self-efficacy had any influence on whether the school had high but achievable academic standards and goals (see Table 5).

Institutional vulnerability. Results indicated that the principal's level of self-efficacy does not have a statistically significant influence on the Institutional Vulnerability of his or her school's climate, $\gamma_{01} = -.000246$, $t(9) = -1.465$, $p = .177$. There was insufficient evidence to suggest that the principal's levels of self-efficacy had any influence on the extent to which the school is susceptible to vocal parent and citizen groups (see Table 6).

Principal Self-Efficacy and Teacher Retention

There was insufficient evidence to support the rejection of the null hypothesis. Principal self-efficacy levels were not found to statistically significantly influence his or her school's retention of teachers, $\gamma_{01} = .005$, $t(9) = .37$, $p = .719$. In other words, the campus principal's self-efficacy levels had nothing to do with whether teachers decided to stay or leave their respective campuses (see Table 7).

Table 4

Professional Teacher Behavior: Means as Outcomes Model

Fixed Effects	Coefficient(SE)	t (df)	p-value
Model for intercept (β_0)			
Intercept (γ_{00})	0.090472 (0.0013)	70.70 (9)	< 0.001
PSE (γ_{01})	-0.000196 (0.0001)	-1.57 (9)	0.150
Random Effects (Variance Components)			
Var. in school means, (τ_{00})	0.00001	19.76 (9)	0.019
Var. within schools, (σ^2)	0.00015		

Table 5

Achievement Press: Means as Outcomes Model

Fixed Effects	Coefficient(SE)	t (df)	p-value
Model for intercept (β_0)			
Intercept (γ_{00})	0.100826 (0.0028)	35.71 (9)	< 0.001
PSE (γ_{01})	-0.000157 (0.0003)	-0.54 (9)	0.601
Random Effects (Variance Components)			
Var. in school means, (τ_{00})	0.00007	47.27 (9)	0.001
Var. within schools, (σ^2)	0.00029		

Table 6

Institutional Vulnerability: Means as Outcomes Model

Fixed Effects	Coefficient(SE)	t (df)	p-value
Model for intercept (β_o)			
Intercept (γ_{00})	0.053564 (0.0017)	32.36 (9)	< 0.001
PSE (γ_{01})	-0.000246 (0.0002)	-1.47 (9)	0.177
Random Effects (Variance Components)	Variance	χ^2 (df)	p-value
Var. in school means, (τ_{00})	0.00002	37.48 (9)	< 0.001
Var. within schools, (σ^2)	0.00013		

Table 7

Principal Self-Efficacy and Teacher Retention: Means as Outcomes Logistic Regression Model

Fixed Effects	Coefficient(SE)	Odds Ratio	t (df)	p-value
Model for intercept (β_o)				
Intercept (γ_{00})	-0.892770 (1.64)	0.41	-0.54 (9)	0.600
PSE (γ_{01})	0.004522 (0.01)	1.00	0.37 (9)	0.719
Random Effects (Variance Components)	Variance	χ^2 (df)	p-value	
Var. in school means, (u_{00})	0.00154	9.74 (9)	0.372	

School Climate and Teacher Retention

Collegial leadership. The Collegial Leadership dimension of school climate was not found to statistically significantly influence teacher retention, $\gamma_{10} = .466$, $t(221) = .058$, $p = .954$. There was insufficient evidence to suggest that meeting the social needs of the faculty or achieving the goals of the school had any influence on whether teachers decided to stay or leave their respective campuses (see Table 8).

Professional teacher behavior. The Professional Teacher Behavior dimension of school climate was not found to statistically significantly influence teacher retention, $\gamma_{10} = -.335$, $t(221) = -.030$, $p = .976$. There was insufficient evidence to suggest that the respect for colleague competence, commitment to students, autonomous judgment, or mutual cooperation and support of the teachers had any influence on whether teachers decided to stay or leave their respective campuses (see Table 9).

Achievement press. The Achievement Press dimension of school climate was not found to influence statistically significantly teacher retention, $\gamma_{10} = -3.78$, $t(221) = -.474$, $p = .636$. There was insufficient evidence to suggest that whether the school had high but achievable academic standards and goals had any influence on whether teachers decided to stay or leave their respective campuses (see Table 10).

Institutional vulnerability. Institutional Vulnerability examines the relationship between the school and the community; looking more specifically at the extent to which the school is susceptible to vocal parent and citizen groups. This dimension of school climate was found to have a statistically significantly influence on whether teachers decided to stay or leave their respective campuses, $\gamma_{10} = 36.44$, $t(221) = 2.898$, $p = .004$ (see Table 11). These findings

indicate that teachers are more likely to remain employed at campuses that are less influenced by vocal parent and citizen groups.

Table 8

Collegial Leadership: Logistic Random Coefficients Model

Fixed Effects	Coefficient(SE)	Odds Ratio	t (df)	p-value
Model for intercept (β_0)				
Intercept (γ_{00})	-0.2852 (0.13)	0.75	-2.15 (10)	0.057
Collegial Leadership (γ_{10})	0.4660 (8.03)	1.59	0.06 (221)	0.954
Random Effects(Variance Components)	Variance	χ^2 (df)		p-value
Var. in school means, (u_0)	0.00008	9.93 (10)		> 0.500

Table 9

Professional Teacher Behavior: Logistic Random Coefficients Model

Fixed Effects	Coefficient(SE)	Odds Ratio	t (df)	p-value
Model for intercept (β_0)				
Intercept (γ_{00})	-0.2852 (0.13)	0.75	-2.15 (10)	0.057
Professional Teacher Behavior (γ_{10})	-0.3347 (11.20)	0.72	-0.03 (221)	0.976
Random Effects(Variance Components)	Variance	χ^2 (df)		p-value
Var. in school means, (u_0)	0.00008	9.93 (10)		> 0.500

Table 10

Achievement Press: Logistic Random Coefficients Model

Fixed Effects	Coefficient(SE)	Odds Ratio	t (df)	p-value
Model for intercept (β_0)				
Intercept (γ_{00})	-0.2855 (0.13)	0.75	-2.15 (10)	0.057
Achievement Press (γ_{10})	-3.7781 (7.97)	0.02	-0.47 (221)	0.636
Random Effects(Variance Components)	Variance	χ^2 (df)		p-value
Var. in school means, (u_0)	0.00008	9.94 (10)		> 0.500

Table 11

Institutional Vulnerability: Logistic Random Coefficients Model

Fixed Effects	Coefficient(SE)	Odds Ratio	t (df)	p-value
Model for intercept (β_0)				
Intercept (γ_{00})	-0.29 47(0.13)	0.75	-2.18 (10)	0.054
Institutional Vulnerability (γ_{10})	36.44 (12.58)	$6.7 \times 10^{15} <$	2.90 (221)	0.004
Random Effects(Variance Components)	Variance	χ^2 (df)		p-value
Var. in school means, (u_0)	0.00011	10.22 (10)		0.422

Discussion

The purpose of this study was to examine the relationship among principal self-efficacy, school climate, and teacher retention. Results indicated that there was not a statistically significant relationship between a principal's level of self-efficacy and school climate. These findings are not consistent with previous research that suggested the way principals view the quality of their school climate is related to the way they view their own self-efficacy as a principal; indicating relational implications between school climate and principal self-efficacy (Tschannen-Moran & Gareis, 2004). Devos and Bouckenooghe (2009) found more self-efficacious principals had the ability to provide resources and support teachers, therefore leading to a positive school climate. Similarly, Brown, and Wynn (2009) found a principal's ability to create a collegial environment fostered an increase in teacher retention. One possible explanation for the difference in this study's findings in comparison to previous literature could have been the Level 2 sample size. Possibly with a larger sample of principals one could have found a statistically significant relationship between a principal's level of self-efficacy and his or her respective school's climate.

Levels of principal self-efficacy were also not found to influence teacher retention. There is previous literature that supports a positive relationship between principal self-efficacy and teacher retention. Contrary to these findings, Buchanan (2010) noted that the principal's ability to run the school directly impacted a teacher's decision to leave the profession. Also, results from a previous study by Ndoye et al. (2010) revealed that leadership was the strongest predictor of teachers' intention to stay or leave their current position.

There was insufficient evidence to suggest that the collegial leadership, professional teacher behavior, or the achievement press of a school's climate had any influence on teacher retention. On the other hand, results did indicate that there was a statistically significant relationship between the institutional vulnerability of a school's climate and the retention of its teachers. Institutional vulnerability examines the relationship between the school and the community, specifically the extent to which the school is susceptible to vocal parent and citizen groups. While the results are inconsistent within the four dimensions analyzed, previous research does indicate school climate, as well as outside factors, influence teacher retention (Barmby, 2006; Elfers et al., 2006; Kukla-Acevedo, 2009; Smethem, 2007).

Implications

Retaining teachers is a problem for the field of education (Harper, 2009). Low teacher retention in a school district has been found to adversely affect student achievement by disrupting the educational community and negatively impacting the district budget, due to the amount of monies spent on recruiting and training teacher replacements (Joiner, 2009). The results of this research have implications that may help to address this dilemma. Beneficiaries of this research are not only the principals and teachers involved in the study, but also the school district's administrators interested in the relationships between principal self-efficacy, school climate, and teacher retention.

Finding links as to why teachers decide to leave a campus and/or school district could be valuable not just to this particular school district, but similarly situated ones as well. While this study did not identify a relationship between principal self-efficacy, school climate, and teacher retention per se, further examining the relationship between school climate and teacher retention could assist in concluding that an indirect link exists between principal self-efficacy

and teacher retention, thus concluding a mediator effect of school climate on principal self-efficacy and teacher retention. This tells us that by school districts addressing school climate, they may have an opportunity to also address their teacher retention.

School district officials and human resource departments could potentially use this study's findings to analyze their teacher turnover rate. Analyzing these responses could lead the school district to provide further staff development in creating effective school climates and communication skills to their campus principals. It may also become important for school districts to incorporate teacher retention into a principal's annual appraisal.

Looking specifically at the influence this research could have on participants in this study, results indicated that the "institutional vulnerability" of a campus has a significant influence on whether or not a teacher stays or leaves. By identifying the specific subset of "institutional vulnerability", principals could receive staff development on skills to improve their relationships with parents and the community, thus retaining their teachers. Creating a buffer between these two groups might increase the likelihood a teacher would stay on campus. A teacher might feel more supported and less threatened by outside forces. Important to recognize is that the relationship between the parents and principal could be impacted by the principal's self-efficacy and perceptions of their own ability to do their job. Thus, principals were not sure and confident in their ability to mitigate the relationship of their teachers and parents, they may not be able to create the buffer so needed by their teachers.

Based on previous research, regardless of the statistical outcome of this study, the relationship of principal self-efficacy, school climate, and teacher retention have a connection and deserve further analysis. Research has found school leaders have an impact on school climate affecting teacher retention (Brown & Wynn, 2009; Devos & Bouckenoghe, 2009; Tschannen-Moran & Gareis, 2004). Previous research along with the significant findings from this study could be key ingredients to a recipe for retaining more teachers.

Recommendations for Future Research

One possible reason this study's outcomes differed from those stated in previous research was the limited sample size of the study. With limited funding and limited access to a larger number of school districts in the Southeastern region of Texas, selecting a larger sample size was not feasible. The findings of this research are limited to the school district in which the study occurred. However, the methods could be replicated in other similar school districts interested in the relationship of principal self-efficacy, school climate, and teacher retention, thereby adding greater depth to understanding the problem of teacher retention. Additionally, although the findings from this research were based on a specific U.S. state, it is likely that similar results would be found if parallel research were conducted in other states or regions in the U.S. It is also quite possible that similar research findings would be discovered in an international study on a principal's influence on teacher retention if conducted in a public-school setting that is structured and designed similar to public schools in the U.S.

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Appendix A: Principal Sense of Efficacy Scale (PSES)

Principal Questionnaire

This questionnaire is designed to help us gain a better understanding of the kinds of things that create challenges for principals in their school activities.

Directions: Please indicate your opinion about each of the questions below by marking one of the nine responses in the columns on the right side. The scale of responses ranges from "None at all" (1) to "A Great Deal" (9), with "Some Degree" (5) representing the mid-point between these low and high extremes. You may choose any of the nine possible responses, since each represents a degree on the continuum. Your answers are confidential.

Please respond to each of the questions by considering the combination of your *current* ability, resources, and opportunity to do each of the following in your present position.

"In your current role as principal, to what extent can you..."	None at All		Very Little		Some Degree		Quite a Bit		A Great Deal
1. facilitate student learning in your school?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
2. generate enthusiasm for a shared vision for the school?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
3. handle the time demands of the job?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
4. manage change in your school?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
5. promote school spirit among a large majority of the student population?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
6. create a positive learning environment in your school?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
7. raise student achievement on standardized tests?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
8. promote a positive image of your school with the media?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
9. motivate teachers?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
10. promote the prevailing values of the community in your school?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
11. maintain control of your own daily schedule?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
12. shape the operational policies and procedures that are necessary to manage your school?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
13. handle effectively the discipline of students in your school?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
14. promote acceptable behavior among students?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
15. handle the paperwork required of the job?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
16. promote ethical behavior among school personnel?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
17. cope with the stress of the job?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
18. prioritize among competing demands of the job?	①	②	③	④	⑤	⑥	⑦	⑧	⑨

Appendix B: Organizational Climate Index (OCI)

OCI

Directions: The following are statements about your school, Please indicate the extent to which each statement characterizes your school from **rarely occurs** to **very frequently occurs**.

	Rarely Occurs	Sometimes Occurs	Often Occurs	Very Frequently Occurs
1. The principal explores all sides of topics and admits that other opinions exist.	1	2	3	4
2. A few vocal parents can change school policy.	1	2	3	4
3. The principal treats all faculty members as his or her equal.	1	2	3	4
4. The learning environment is orderly and serious.	1	2	3	4
5. The principal is friendly and approachable.	1	2	3	4
6. Select citizens groups are influential with the board.	1	2	3	4
7. The school sets high standards for academic performance.	1	2	3	4
8. Teachers help and support each other.	1	2	3	4
9. The principal responds to pressure from parents.	1	2	3	4
10. The principal lets faculty know what is expected of them.	1	2	3	4
11. Students respect others who get good grades.	1	2	3	4
12. Teachers feel pressure from the community.	1	2	3	4
13. The principal maintains definite standards of performance.	1	2	3	4
14. Teachers in this school believe that their students have the ability to achieve academically.	1	2	3	4
15. Students seek extra work so they can get good grades.	1	2	3	4
16. Parents exert pressure to maintain high standards.	1	2	3	4
17. Students try hard to improve on previous work.	1	2	3	4
18. Teachers accomplish their jobs with enthusiasm.	1	2	3	4
19. Academic achievement is recognized and acknowledged by the school.	1	2	3	4
20. The principal puts suggestions made by the faculty into operation.	1	2	3	4
21. Teachers respect the professional competence of their colleagues.	1	2	3	4
22. Parents press for school improvement.	1	2	3	4
23. The interactions between faculty members are cooperative.	1	2	3	4
24. Students in this school can achieve the goals that have been set for them.	1	2	3	4
25. Teachers in this school exercise professional judgment.	1	2	3	4
26. The school is vulnerable to outside pressures.	1	2	3	4
27. The principal is willing to make changes.	1	2	3	4
28. Teachers "go the extra mile" with their students.	1	2	3	4
29. Teachers provide strong social support for colleagues.	1	2	3	4
30. Teachers are committed to their students.	1	2	3	4

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