The Effects of a House System on School Improvement in Elementary Schools: School Climate and Academic Achievement

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THE EFFECTS OF A HOUSE SYSTEM ON SCHOOL IMPROVEMENT IN ELEMENTARY SCHOOLS: SCHOOL CLIMATE AND ACADEMIC ACHIEVEMENT

by

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ABSTRACT

A regional area of a school district in central Florida used the implementation of a house system as a school improvement intervention to impact school climate and academic achievement. The purpose of this study was to determine if a house system is an effective school improvement intervention that has a positive effect on school climate and academic achievement of students in elementary schools. Four research questions were developed to investigate if there was a difference in elementary schools that implemented a house system and ones that did not during the 2018-2019 school year. All schools included in the study had 5th grade students who responded to Cognia© elementary student survey. Those responses were used to study school climate. Historical attendance and suspension data for school year 2018-2019 was also used. The scale scores from the Florida Standard Assessment (FSA) were used to measure student achievement in reading and math. Of the six schools included in this study it was found that the implementation of a house system did have an impact on suspensions and student achievement on standardized tests in reading and mathematics. There was no evidence to support the implementation of a house system having an impact on school climate and student attendance. This study adds to the literature of the impact of a house system on elementary schools. The findings of this research have implications for further research on the house system as an intervention to improve academic achievement in reading and math at elementary schools.
ACKNOWLEDGMENTS

This dissertation is dedicated to my family. This journey was made possible due to the continued love and support of my husband, Brian A. Martin, and the Blessings of our three children, Alexander C. Martin, Rachel B. Martin, and Jasmine E. Martin. I also want to thank my father, Matthew Clenton (deceased), who left all that he knew and had in Trinidad and Tobago, to ensure a better life for his wife and children. I want to thank my mother, Gloria W. Clenton, who continued on as a single mom to create opportunities for success in all three of her children, Ellis F. Clenton, Ruth L. Clenton, and me. There are also countless other extended family members and friends that are like family that have supported me in life and through this dissertation experience. I am grateful to you all.
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CHAPTER ONE: INTRODUCTION

Background of the Study

The purpose of this casual-comparative study was to explore the implementation of a house system as a viable school improvement effort in elementary schools. In this era of Every Student Succeeds Act (ESSA), school improvement is the single most important responsibility of the school in that it is a continuous process to ensure that all students are provided access, opportunity, and support to achieve at high levels of performance (Learning and Teaching, n.d.). School improvement involves leadership, teachers, culture, resources, pedagogy, and the school community all working collaboratively to change school practices in ways that lead to the ultimate goal, which is to enhance the academic achievement and overall wellbeing of the student (Australian Council for Educational Research, n.d.).

School improvement is associated with the well-being of a student because the changes needed to improve school climate and increase academic achievement directly impacts the student (Cohen; 2012; Brown, 2016; Jarl, Anderson, Blossing, 2021). School climate refers to the school’s effects on students, including teaching practices; diversity; and the relationships among administrators, teachers, parents, and students (Association of Supervision and Curriculum Development, n.d.). School climate has become an increasingly important area among researchers and school leaders as a result of the demonstrated connections that climate has to the social, emotional, and academic outcomes for students (La Salle, Zabek, & Meyers, 2016). It is important to note that school climate defers from school culture, as culture refers to the way teachers and staff work together on a set of beliefs, values, and assumptions that they
share (Smallwood, 2014). This study will focus on the effects a house system has on school climate and student achievement.

A house system is a team building structure that focuses on building relationships between staff and students that could result in improved school climate, which can in turn impact school culture and then consequently increase academic achievement. One of the six area superintendents in the school district in central Florida was charged with the responsibility of improving the performance of elementary schools in their region. The area superintendent and two area executive directors, together referred to as the leadership team, that were a part of her supporting leadership in the summer of 2018 opted to look at Ron Clark Academy, a private middle school in Atlanta, GA, that utilized a house system. The above-mentioned leadership team attended a professional development (PD) opportunity being offered by this private middle school in Georgia and then found one local public elementary school back Florida that had already implemented a house system. The leadership team then invited all principals in their region to look at the model in the local area elementary school. Principals were given the autonomy to use available school funds, which depending on the school, included funds from general contingency, Title I, or facility use generated funds to pay for this PD. Principals were encouraged to attend the professional development offered in Atlanta, GA along with a team of teacher leaders from their schools. The six schools included in this study all attended the professional development during the summer of 2018. At that time, the success of a house system was only noted in a few private middle and K-8 schools (Thomas, 2016). This study examines the implementation of a house system in public elementary schools and its effect on school improvement: school climate and academic achievement.

School improvement requires school leaders to implement change that result in higher
levels of student achievement (Meyers & VanGronigen 2021). Education laws like No Child Left Behind (NCLB) and Every Student Succeeds Act (ESSA) were established to address school reform and set standards for school improvement by having a focus on accountability (Houston, 2008). When it comes to school improvement, measuring equality is imperative and schools are judged on two standards: student achievement and equity (Lezotte & McKee, 2002; Blanc & Christman, 2005; Bernhardt, 2013;). Equity recognizes that each person has different circumstances and therefore a practice in equality is needed in educational settings where the same resources and opportunities are allocated so that all students are able to reach an equal outcome (Online Public Health, 2020). In education, equity is evaluated by looking at student achievement across race, disability, socioeconomic status, and English proficiency of students (Houston, 2008; Lezotte & McKee, 2002). For school improvement to occur for all students it is important to note that school leaders need to be both equity-minded and equity advocates (Ford, Davis, Whiting, & Moore, 2021)

Educational leaders are challenged by policy makers to meet accountability standards and are expected to employ more equity-centered practices to demonstrate equality within schools (Green, 2006). There is evidence that schools, teachers, and educational leaders can counter the adverse effects of poverty on student performance (Hoy, 2012; Halverson, Kelley, & Shaw; 2014). Educational leaders who prioritize the learning needs of their most vulnerable students, have been able to make great gains with closing the achievement gap (Boykin & Noguera, 2011; Dufour, Dufour, Eaker & Karhanek, 2010). It is imperative that policy makers and educational leaders work together to identify and address underlying issues that create and sustain achievement gaps that are created by inequality in opportunities provided to school aged children (Hung, Smith, Voss, Franklin, Gu, & Bounsanga, 2020). The achievement differences in some
schools are attributed to socio-economic conditions and that factor continues to be a focus of education policy and research (Hallinger & Heck, 2011).

Public schools are in an ongoing pursuit for more effective school leadership to enhance overall school success, performance, and effectiveness (Akdemir, 2020). Effective leadership is very closely related to success of learning in schools (Taufik & Istiarson, 2020). The challenges that are facing public schools demand effective leadership. Public schools are in need of transformational leaders who are adaptive problem-solvers that tap into the potential of their followers (De Lisle, Annisette, & Bowrin-Williams, 2020). Transformational leaders set goals based on data to meet the needs of diverse learners, cultivate new teachers, and retain highly effective teachers (Halverson, et al. 2014; Wagner, 2008). Some schools produce ineffective results with students and attribute that performance to poverty, language barriers, family instability and poor health (Adams & Forsyth, 2013). However, transformational leaders at some low performing schools have been able demonstrate high achievement levels with diverse learners (Jarl, Anderson, & Blossing, 2021).

To meet the needs of a diverse population of students, schools have had to adopt inclusive educational practices to address the needs of students who live in poverty, experience high mobility, or those who struggle to learn for other reasons (Choi, McCart, & Sailor, 2020). It is important that school leaders understand affective profiles like language, gender, and socioeconomic status affect student achievement (Alivernini, Cavicchiolo, Manganelli, Chirico & Lucidi, 2020).

The area superintendent in a central Florida school district aimed to improve the performance of schools in her region by proposing a shift in school climate that would adopt inclusive educational practices that would improve student achievement. Several schools in the
regional area of this area superintendent participated in a professional development that was facilitated by Ron Clark Academy, which is a private middle school in Atlanta, GA., that modeled a successful house system.

The house system was developed in public schools in England and Wales in the late sixth century (Thomas, 2016). It was initially established to assure the pastoral care of students attending boarding schools and universities and fostered a sense of community among students and staff (Brennan, 2012). The house system was used to organize students within groups for academic instruction, sports competition, and distributed leadership (Dierenfield, 1975). The team building structure of a house system also relies on the interdependence of teachers and students working together, which is indicative of effective teams (Lezotte & McKee, 2002). In the United States, some private Christian schools are choosing to implement a house system to improve school climate (Thomas, 2016). The house system has the potential to forge inclusive educational practices that bring about equity through team building (Betters-Bubon, 2012). In the regional area of the school district in central Florida, the house system was being introduced as a school improvement strategy that could impact school climate and student achievement. All schools in this school district are expected to develop and implement a school improvement plan. The executive leadership in this region proposed the implementation of a house system to improve teacher-student relationships and thereby improve student success. Six schools that participated in the professional development at the Ron Clark Academy in Georgia during the summer of 2018 were selected to participate in this study. Four of the six schools chose to implement the house system as an intervention strategy at the beginning of the 2018-2019 school year while two schools did not.

The goal of school improvement is to create a system of education that maximizes the
potential and success of all children (Bernhardt, 2013). School leaders play an integral role in developing viable teaching and learning environments. School leaders that incorporate a transformational leadership style have great potential in positively impacting a school’s climate (Allen, Grigsby, & Peters, 2015; Chubb 2014). School climate reflects a myriad of concepts that influence the perceptions staff and students have about the school environment. Climate is described as the norms, goals, and values of the organizational structure of the school (Brown, 2016), and the fundamental beliefs, assumptions, and patterns of behavior of the individuals in that environment (Shafer, 2018). School climate is also demonstrated in the positive interactions between teachers and students in teaching and learning practices within the school, and in the interpersonal relationships between stakeholders associated with the school community (Brown, 2016). Effective schools, administrators, teachers, and other employees exemplify a climate that believes that all students can learn (Ozgenel, 2020).

A model of school improvement that is going to be effective should include a focus that is centered on student achievement (Moulakdi & Bouchamma, 2020). School improvement is at the top of current social and political agendas, yet it varies how state education departments establish accountability measures for schools (Lezotte & McKee, 2002). At the local level, a school district may focus on school improvement as guided by the state’s requirement for continuous school improvement. A school leader will then interpret that requirement outlined by state expectations and develop a plan which is the school’s road map to effective school improvement.

In the seminal work on the problem of change in US schools, Sarason, (1971) clearly explicated many problems that school leaders encounter in their efforts to effectively change school settings (Gurley, Peters, Collins & Fifolt, 2015). Educational leaders and classroom
teachers have committed their lives to teaching students with the full expectation that they will have an impact on student achievement (Brown, 2016). School leaders can support teachers with ensuring student growth by making sure goals are clear and explicit; and create opportunities in the learning environment for all students (Hung, et al., 2020). Quality school leadership can have an impact in positive school outcomes like student achievement (Leithwood, 2009; Larson, 2009). Victoria Bernhardt (2013) challenges educators to consider what it takes to get learning growth from every student in your school, every year.

One of the factors to having success in schools and improving student achievement is by having a clear, shared vision (Jarl, Anderson, Blossing, 2021). A school’s vision, goals and student expectations need reflect the core values and beliefs of the staff (Shafer, 2018). A shared vision grounded in research on best practices, organized by how teachers implement curriculum; purposefully creates an encouraging learning environment and is supported by structures that ensure that everyone understands their role in implementing the vision (Bernhardt, 2013). A shared vision sets the foundation for a positive school climate. This shared vision is evident in the openness and authenticity in the communication and interactions of the school leadership with teachers and the collaborations of teachers with other teachers (Hoy, 2012). These social relations and interactions are organizational characteristics that are indicative of successful schools (Jarl, et al. 2021).

School climate is recognized as a crucial indicator of effective schools (Hoy, 2012). School climate is related to the quality and character of a school; and encompasses how members of the school community experience school norms, culture, and structures (Osher, Neiman, & Williamson, 2020). According to a study conducted by Ozgenel (2019), school climate can predict school effectiveness; however, student background characteristics like family history and
socioeconomic status were not more powerful than school-level factors in determining student achievement. Subsequent studies have found that the school can have a significant impact on student achievement (Hopkins, et al., 2014). School climate is a critical to school effectiveness.

Gokbulut and Turan (2021) recently determined that there was a significant relationship between visionary leadership and school effectiveness. According to Alvy and Robbins (2010), in order to implement and sustain an effective vision, the vision should have personal meaning to all those who may be affected by the idea. The development of a clear school mission, shared vision, articulated values, and specific goal statements are integral elements to school improvement that have a focus on increased levels of learning for all students (Gurley, et al., 2015). A house system, through competitive academic activities behavior expectations, and sports competitions provides a focus for a shared vision of how members of the group interact with each other. There is limited research on the effects of a house system on school climate and academic achievement in public elementary schools.

Statement of the Problem

The area superintendent in a regional area of a central Florida school district sought to improve school climate and increase academic achievement elementary schools by promoting a professional development experience that modeled a house system. The implementation of a house system was the structure through which a sense of community would be established with administrators, teachers, and students. Only one study within recent years reviews the impact of a house system on school climate in a private school (Thomas, 2016). That study was conducted at a private K-8, Catholic school. Brennan (2012) found that the house system did have a significant impact on school climate. There were no studies found on the impact of a house system on school climate and student achievement in public elementary schools. This study will
determine if the implementation of a house system is an effective strategy towards school improvement efforts as it relates to school climate and student achievement, at selected elementary schools.

Purpose of the Study

The purpose of this study was to determine the impact of a house system on school improvement by examining school climate and student achievement in selected elementary schools. The rate of student attendance, student suspensions, and results in reading and mathematics on a state standardized assessment was reviewed. A house system is a team-building structure that connects students and teachers across grade levels and connects students to various school personnel other than their classroom teacher. The house system is being used as part of a school improvement effort for elementary schools in one regional area of a central Florida school district.

Significance of the Study

School improvement has been supported by education policy to improve the performance of low performing schools (Carlson & Lavertu, 2018). To be successful, schools that are considered to be low-performing need to be purposeful and adaptive (Burke, 2018). Schools and school systems develop goals via school improvement plans or some other tool that delineates specific practices that will yield certain outcomes in a specific timeframe. School improvement plans have a framework of interconnected steps that occur in a cyclic process of goal formulation, implementation, evaluation, and modification of goals (Bernhardt, 2013).

School climate is an important factor in school improvement (Yamauchi, Ponte, Ratliffe, & Traynor, 2017). This study aims to discover if there is a difference in school climate, student attendance, student suspension, and student achievement when a house system is implemented in
an elementary school. The implementation of a house system as a school improvement effort would be meaningful to the practice of education as it may help to answer the question of whether a positive school climate contributes to higher student performance levels. It is proposed that the effective implementation of a house system will have a positive impact on the climate and student achievement at these elementary schools.

Definition of Terms

For this study, the following terms are defined and operationalized to provide the reader with clarity.

**Distributed Leadership**

It is a focus away from individual leadership and toward organizational leadership where leadership is exercised by a wide range of organizational participants (Rutherford, 2006).

**House System**

A house system is defined as a grouping of students vertically long-term in teams for inter-school competition (Thomas, 2016).

**iReady Projected Prediction**

Curriculum Associates provides school districts with results of their predictive model, which uses the outcomes of the Fall and Winter i-Ready diagnostic testing to estimate the probabilities of a student scoring at every achievement level on FSA ELA and FSA Mathematics for students in grades 3-8 (Shneyderman, 2017).

**FSA Performance**

Relates to the results of a student taking the Florida Standards Assessment English Language Arts ELA (reading and writing) and Mathematics FSA scores that are categorized into scale scores and achievement levels. Achievement levels are based on a range of scale scores that
indicate 5 different levels of performance on the state assessment. A student scoring a Level 3 or higher, is proficient in the content area for their respective grade level (Florida Department of Education, 2019).

School Improvement Effort

Bernhardt (2013) describes seven continuous improvement categories that include: Information and Analysis, Student Achievement, Quality Planning, Professional Learning, Leadership, Partnership Development, and Continuous Improvement and Evaluation. Schools therefore can use these categories as a vehicle for ongoing self-assessment and thereby provide themselves and their partners with a measure of progress in their continuous school improvement efforts.

School Climate

The Campus Climate Networking Group at the University of Wisconsin defined climate as behaviors in a learning environment that affect if an individual feels safe, respected, treated fairly, and valued, and the National School Climate Center’s four essential dimensions include safety, teaching and learning, interpersonal relationships, and institutional environment (National School Climate Council, 2007; Paris & Schutt, 2004)

Teacher self-efficacy

Teacher self-efficacy refers to an individuals’ belief in their capabilities to perform specific teaching tasks at a specified level of quality in a specified situation (Hajovsky et.al. 2020). It also includes multiple aspects of teaching, such as providing effective, inclusive instruction. Teacher self-efficacy is important to teachers’ positive perceptions about their work environment which contributes to a positive school climate for students (Mitchell, et.al. 2010).
Transformational leadership

According to Anderson (1978), transformational leadership was first coined by Downton (1973) and then emerged as an important approach to leadership research under Burns (1978). Transformational leaders persuade followers to adopt certain behaviors in order to bring about what the leader regards as beneficial change (Bush, 2018). Through the strength of vision and personality, transformational leaders are able to inspire followers to change their expectations, perceptions, and motivations to work towards common goals (Liu, 2018).

Theoretical Framework

This study will use Bronfenbrenner’s (1978) ecological theory as a framework for developing a positive school climate; and Van de Ven & Poole’s (1995) teleological theory of organizational change for establishing effective school improvement as indicated by improved student achievement. In the 1970’s Bronfenbrenner introduced ecological theory to emphasize the influence of social, community, and political contexts on child development (Rosa & Tudge, 2013). The five levels of Bronfenbrenner’s ecological systems theory outline how relationships and contexts can be viewed as concentric circles extending outward from an individual (Yamauchi, et al. 2017). The school environment is first level of the ecological system and is one of the closest factors that affect the development of a child. Schools have a defined the set of values and norms that create the climate and culture a child’s experiences. The perceptions a child develops about school is as a result of the school’s climate (Mitchell, Bradshaw, & Leaf, 2010).

Organizational change is often unplanned and gradual (Burke, 2018). Van de Ven and Poole (1995) conducted a search across disciplines focusing on the key words change and development. To integrate their diverse theories about change, Van de Ven and Poole (1995)
identified four primary theories for organizational change and development: life cycle, teleological, dialectical, and evolutionary (Onwuegbuzie, Collins, & Frels, 2013). Teleological theory assumes that an organization, like schools need to be purposeful and adaptive (Burke, 2018). Proponents of teleological theory view development as a repetitive sequence of goal formulation, implementation, evaluation, and modification of goals that are based on what is learned by the entity (Burke, 2018).

School improvement efforts, like those outlined in the Florida Continuous Improvement Model (FCIM) is likened to that of the teleological theory. FCIM outlines a cyclical model of plan, do, check, act which is indicative of the teleological theory, which is a process that is ongoing and iterative. In other words, school improvement efforts and schools as an organization are never static or in permanent equilibrium (Burke, 2018). Unfortunately, continuous improvement models like this only focus on how to change. When it comes to school improvement, this researcher proposes that a dual focus also needs to be on ‘what’ needs to be replaced. Schools, and especially underperforming schools, require a discontinuous change. This change needs to concentrate on the school’s interface with its external environment; the school’s mission, goals, and strategy; and the culture and climate of the school (Hoy, 2012). It is only when discontinuous factors and continuous factors are addressed simultaneously, can true organizational change occur for a school (Burke, 2018).

Effective school improvement ensures that when goals are reached in school improvement plans, new ones are set as a result of changes that have occurred in the external environment (Onwuegbuzie, Collins, & Frels, 2013). Schools are important organizations where children are prepared for adult roles (Bozkus, 2014). The climate and culture that students experience during early years of development plays an important role in their overall
development (Yamauchi, et al., 2017). In education, it is essential to know the distinction between what is required for a school system and how to change that school environment. The climate of an organization impacts the culture (Shafer, 2018). In order for effect change to occur culture has the change. School systems therefore need to focus on continuous improvement by looking at both the climate and culture of the organization as well as the systems for monitoring academic achievement in the environment (Burke, 2018).

Research Questions

The following questions are formulated for the study:

1) To what extent, if any, does the implementation of a house system have an effect on the attendance rate of students in elementary schools?
2) To what extent, if any, does the implementation of a house system have an effect on the suspensions of students in elementary schools?
3) To what extent, if any, does the implementation of a house system have an effect on school climate in elementary schools?
4) To what extent, if any, does the implementation of a house system have an effect on student performance in reading and math on standardized assessments in elementary schools?

Limitations

The house system is as an intervention that was used as a school improvement effort by one area superintendent in one regional area of a school district in central Florida. There are several schools that have adopted a house system in the school district but only the schools that were introduced to the concept of a house system during the summer of 2018 at Ron Clark Academy in Atlanta, GA were included. The following limitations were present in this study:

- Six schools were included in this study, four that implemented a house system and
two that did not.

- Cognia © Elementary School Climate Survey responses from the 5th grade students of each of the six schools were used. The climate survey did include specific questions that reference a house system.

- Attendance and suspension data for school year 2018-2019 was used. This school year encompassed one full year of implementation of the house system.

- The results in reading and math for 5th grade students on Florida Standardized Assessment were used to measure student achievement. Students are included in the study based on availability of a FSA score for school year 2018-2019.

Delimitations

The researcher chose to focus on six elementary schools in a large regional area of a school district in central Florida. There are other elementary schools within this school district have implemented house systems, however it was not a focus of the other area superintendents and their schools did not participate in the professional development. The timeliness of exposure to the professional development and the implementation of the house system also could not be determined. The following delimitations were present in this study:

- Only six schools were used; four with a house system and two without a house system. The results of this study are not generalizable.

- Prior to school year 2018-2019, four schools in this study had a school grade of a C or lower prior; and two schools had a B the previous year, with one of those
two schools having an A the previous school year. These two latter schools would not have been considered as underperforming.

Assumptions

According to Lunenburg and Irby (2008), assumptions are postulates, premises, and propositions that are accepted as operational for purposes of the research. This study therefore assumes that all elementary schools included in the study fit the researcher’s criteria of have effective implementation of a house system. It is also assumed that all participants at each school taking the climate survey responded accurately to indicate their perception of overall school climate and not as it pertains to the house system. The interpretation of the climate survey results and trend data for attendance, discipline, and student performance accurately convey the impact of the effective implementation of a house system for school year 2018-2019, which is the year of implementation.

Organization of the Study

This research study is presented in five chapters. In Chapter I, the researcher introduced the house system as a potential school improvement strategy to improve school climate, student attendance, reduce suspensions, and improve student performance. Chapter I includes the problem statement, purpose of the study, the significance of the study, definition of terms, theoretical framework, research questions, limitations, delimitations, and the assumptions of the study.

Chapter II contains the literature review which addresses the use of the house system in elementary schools to impact school climate, transformational leadership, distributed leadership, teacher-student relationships, and a summary of the impact of positive relationships on student achievement. Chapter III details the methodology for this research, which includes a description
of the sample of participants, instrumentation, data collection, and data analysis. Chapter IV contains the study’s findings, including a summary of principal interviews from each school, and the results of the data analyses for the four research questions. Chapter V describes emerging themes from principal interviews, discussion of the findings, recommendations for further research, and conclusions (Lunenburg & Irby, 2008, p. 136).

Summary

Schools need a framework for continuous school improvement; and a process to help them stay focused on systemic improvement (Bernhardt, 2013). While it is evident that schools need a framework for traditional continuous improvement, there is little evidence on how a house system impacts overall school improvement as it relates to school climate and student achievement in elementary schools. The current study seeks to contribute to the literature by examining the impact of an effectively implemented house system on school climate, staff and student attendance, suspensions, and student achievement.
CHAPTER TWO: LITERATURE REVIEW

Introduction

The purpose of this study was to determine the effects of an established house system on the climate on school improvement as it relates to school climate and student achievement in elementary schools. This chapter is separated into several sections that represent literature pertinent to the study. These sections specifically include house system, school climate, transformational leadership, distributed leadership, teacher-student relationship, and student achievement.

House System

The house system was developed in public schools in England and Wales between 501 A.D. and 600 A.D. (Thomas, 2016). It was initially established to assure the pastoral care of students attending boarding schools and universities and was a means to foster a sense of community among students and staff (Brennan, 2012). It was used to organize students within groups for academic instruction, sports competition, and distributed leadership (Dierenfield, 1976). As England’s educational system grew, the house system’s unique organizational identity was transferred to newly developed schools (Cornwall, 2018). As reported in Dierenfield (1975) seminal research, the design of a house system incorporated in the managerial scheme in the structure of schools throughout England to improve relationships and productivity.

A house system is a team building strategy that embodies the development of smaller groups within a large group, which is inherently similar to the development of the work of professional learning communities (Dufour et.al. 2010). The professional learning community (PLC) is considered to be an effective school improvement strategy that is centered on student
achievement (Moulakdi & Bouchamma, 2020). When schools function as PLC’s and the teachers have a meaningful sense of mission and purpose it develops a climate that has a pervasive sense of unity and belonging (Schein, 1992). The organization of a house system begins with dividing the school population into several small units or houses (Cornwall, 2018). The house system creates a school environment where students were grouped into houses based on specific values. The intent of a house system is to build a system of community in the hearts and minds of both students and staff in a school community. The communal ethos of a house system is rooted in building community through competition among students (Dierenfield, 1976).

When adopting a house system schools outline a vertical plan to ensure that there is an equitable distribution of students across grade levels (Brennan, 2012). The same equitable distribution is conducted among all staff within the school environment. This distribution is especially effective within elementary schools as the disparity in the range of ages facilitates the opportunity for older students to exhibit care for younger students within their house. The same effect can occur among staff given that teachers across grade levels, at all levels of years in experience, also have an opportunity to demonstrate care for one another due to their house affiliation (Cornwall, 2018). This balance becomes key in social events that include competitive activities.

The English house system promoted the use of house names, colors, and crests that reflected a notion of shared identity within a school environment (Pounds, 1968). The house system also relied heavily on a point system to reward students for positive behaviors and contributions to the school environment (Pounds, 1968). The social constructs of a house system require the members within the house to develop a sense of identity (Brennan, 2012). A house system allows small groups to develop a strong climate within themselves that is tied by an
established common identity (Thomas, 2016). The house system’s ability to integrate both individual and team rewards through non-tangible point awards, allows schools to produce a positive group dynamic within the smaller groups and thereby impacting the overall climate of the school (Cohen, 1992).

Brennan (2012) studied the impact of a house system on the spirit of community and the overall perception of students, staff, and faculty at Most Holy Trinity Catholic School. The school leadership at Most Holy Trinity was searching for new and innovative ways to connect the community of the school more closely together. This ideology would be reflective of the philosophical doctrine of teleology. Catholic schools have distinctive qualities and practices that have a goal of sustaining a sense of unity and belonging. It is therefore imperative that leaders in Catholic schools actively seek methods for developing a strong community climate. This article also affirmed that there is a gap in the research as it relates to the implementation of a house system within elementary schools.

Bronfenbrenner’s (2000) social ecological theory suggests that there are factors and multiple levels within a school that influences the school environment (Mitchell, et al., 2010). Bronfenbrenner’s (1979) ecological systems model consists of four environmental levels: the microsystem, the mesosystem, the exosystem, and the macrosystem (Bronfenbrenner & Evans, 2000). Each level of the system differently impacts the development of a person. Creating a positive school climate where students feel connected to the adults and to each other, is a key element to healthy development of a child which is Level I of Bronfenbrenner’s ecological system model (Onwuegbuzie, Collins, & Frels, 2013). The teleological theory stresses the importance of an organization having a mission statement, creating a new vision, planning a different strategy, or the setting of goals (Burke, 2018). The teleological school of thought is
also found in a review article by Green (2006) titled *Welcome to the House System*, where the author described Goleta Valley Junior High as a school in need of improving its climate. The school suffered from bullying, fighting, and increasing racial segregation and suspension rates, resulting in a decline in student academic achievement. Goleta Valley had to be adaptive and set new goals to improve the climate, which is indicative of the teleological theory.

Bronfenbrenner’s theory relates to the social interactions of a child in a school setting, while the teleological theory relates to the structure by which goals are set and met for a child in a school setting. The examination of both these theories also allows for a better understanding of how the house system might affect school climate and outcomes of students in an elementary setting. Children develop positively when reciprocal interaction within social relationships occur regularly (Bronfenbrenner & Evan, 2000). Social-ecological theory also defines human development as a transactional process in which the social interactions and connections in a child’s environment are critical to how a child develops over time (Yamauchi, et al., 2017). The school environment, and specifically the interaction between students and adults in the environment, plays an integral role in improved school climate and academic achievement (Mitchell, et.al. 2010).

In the late 1960’s the house system caught the attention of the United States Office of Education. Pounds (1968) published a study that specifically addressed how the English house system might improve the school climate of large city schools in the United States. The study developed a comprehensive picture of the advantages and disadvantages of a house system, which lead to various schools both public and private, exploring small group and school-within-a school models (Alivernini, et al., 2020).

Dierenfield (1976) asserted that the American educational system could adopt the
supportive personal care component that house system brought to English comprehensive schools that had large enrollments during that time. The emphasis of a house system is to focus on the individual well-being of each student to ensure that all children have an enriching school experience (Cornwall, 2018). This supportive dimension is instrumental in the success of educational environments. The supportive structure of a house system relies on the interdependence of teachers and students working together, which is indicative of effective teams (Lezotte & McKee, 2002). The ideal of establishing small, unified divisions within a school creates an atmosphere of intimacy and closeness among students and colleagues (Brennan, 2012). The study of small schools within larger schools have demonstrated positive effects on school climate and student achievement (Hooper, 1999). Large school settings, like high schools, conversely, often have alienating effects on students and there is a correlation of increased absenteeism, poor school climate, decreased student involvement and an increase in student drop-out rates (Kotok, Ikoma, & Bodovski, 2016). There is a call for large school settings to create smaller social units where there is an ability to focus on the needs of a child and building a sense of unity and responsibility (Schafer, 2018).

House system organization can support elementary schools by creating small groups within the school to positively impact school climate and improve student achievement. Smaller groups of students promote supportiveness and caring which can lead to less disruptive behaviors (Alivernini, et al., 2020). A house system reflects the diversity within a school. A house system encompasses an inclusive practice of the collective strength of the group, where both staff and students from various races, ethnicities, ages, and academic abilities are able to contribute to house activities, take on various leadership roles (Brennan, 2012; Thomas, 2016). A house system encourages stronger relationships amongst students and teachers and between adults and
children (Green, 2006). The development of the school community lessens student anxiety and reduces insecurities that are facilitated by the activities embedded within a house system that has the ability to build positive relationships with adults and friendships among peers. A house system facilitates a distributed leadership structure that allows students and teachers to collaboratively work with school leadership that which is indicative of a positive school climate (Angelle, 2010; Ozgenel, 2019). The relationship building and leadership aspects of a house system needs further exploration to determine its impact on school climate and student achievement.

Public Schools

Public schools in the United States are free institutions that are funded by taxation since the inception of the Elementary and Secondary Education Act (ESEA) of 1965 (Brown, 2006). ESEA evolved over 40 years to be called No Child Left Behind (NCLB), and then in 2015 Every Student Succeeds Act (ESSA) was put in to affect to replace and update NCLB (ESSA, 2015). These laws provide K-12 public education options of choice in addition to voucher options for parents to opt for private schools (Houston, 2008). There are factors that contribute to some students underperforming in public schools such as poverty, language barriers, family instability and poor health (Adams & Forsyth, 2013; Camacho, et al., 2018). Additional funding has been provided for schools that face these challenges, however there is inconsistency with some schools being able cultivate students that perform at high levels, and others that do not (Jarl, Andersson, Blossing, 2021). A critical step in improving the academic performance for students who are economically disadvantaged is the setting of high expectations for all students (Smallwood, 2014).

According to Victoria Bernhardt (2013), the goal of school improvement is to create a
system of education that maximizes the potential and success of all children. A regional area of a school district in central Florida aimed at addressing school improvement by providing elementary schools in that area a professional development opportunity that focused on changing school climate. The area superintendent proposed that with a shift in school climate the academic achievement of students would improve. The construct of a house system was introduced to the elementary schools in the area as an intervention for school improvement. It is this structure of a house system to improve school climate and student academic achievement that is being in this study.

According to an article written by Thomas (2016), the house system was developed in public schools in England and Wales in the late 6th century. It was used to organize students for the purpose of academic instruction, sports competition, and distributed leadership. Some private Christian Schools have chosen to implement a house system to improve school climate (Betters-Bubon, 2012). An improvement in school climate is the underlying foundation of a house system. School climate is defined as the shared beliefs, values, and attitudes that shape interactions between the students, teachers, and administration (La Salle, et al., 2016).

A positive school climate can result in improved student behavior (Leithwood, 1992; Allen, Grigsby, & Peters, 2015; Ozgenel, 2020). There is a growing body of research that supports the link between school climate and improved student outcomes that are seen in grades and test scores (Leithwood, 1992; Cohen, 2012; Allen, Grigsby, & Peters, 2015; Brown, 2016). Improved student behavior subsequently impacts student academic achievement. This study will focus on elementary schools that implemented a house system in order to impact school climate and thereby improve academic achievement.
School Climate

Educational researchers and individuals interested in school reform are fascinated with the topic of climate and culture and the impact those elements have on organizations and the school environment (Bolden, 2011; Burke, 2018; Hoy, 1990). The words climate and culture are often used synonymously, however the attributes are different (Hoy, 1990). An organization’s culture refers to the values, attitudes, beliefs, behaviors, and practices of the organizational members (Blanchard, 2019). A school’s climate is composed of positive and negative principal and teacher characteristics that are found to be important predictors of school effectiveness (Ozgenel, 2020).

An unhealthy school climate can lead to an unhealthy and ineffective school environment (Allen, Grigsby, & Peters, 2015). Hoy’s (1990) work on the topic of organizational climate in the school workplace, has long been of interest to educational scholars. During the late 1950’s the concept of organizational climate was developed by school scientists who were trying to conceptualize the ambiguity within work environments, and desired to develop a means to measure aspects of organizational climate. Since that time, school scientists have been purposed with understanding how climate impacts the school achievement.

The persistence of policies aimed at improving school climate holds a belief that a positive climate fosters academic success (Kotok, et al., 2016). In an effort to improve school climate some public and private educational institutions have chosen to implement a program similar to the English house system (Thomas, 2016). School climate is defined as the patterns of people’s experiences of school life that reflect norms, goals, values, interpersonal relationships, teaching and learning practices, and organizational structures (Brown, 2016). The underlying framework of these definitions see school climate as the agreed upon behaviors between
individuals in the school environment. One important distinction in overall school climate that needs consideration is that there is sometimes a difference in the perception of staff and students when it comes to climate. Teachers look at classroom-level factors as an impact on school climate, while students look at the entire school environment as having an impact on school climate (Mitchell et.al, 2010). This distinction is key for elementary schools due to the challenges with inclusivity that students in diverse groups are faced with (Camacho et.al. 2018).

Teaching and learning are other important factors that lead to a positive school climate (Burke, 2018). The support for faculty, autonomy for creative learning, and social-emotional learning are all important to developing school climate (Cohen, 2012). Cultural norms however can impact the relationship of teaching and learning aspects of school climate (Brown, 2016). The distinction between school climate and school culture needs to be made clear. Climate refers to the norms, values and practices that characterize a school (Kotok, et al., 2016); while culture is the collective mental programming that determine the actions of individuals in their social environment (Hankla, Sisan, & Tungkunan, 2021). Climate and culture are intrinsically connected and are shaped by each other.

A house system can be applied as a school wide positive behavior intervention model that provides for the social-emotional learning of students within the school (La Salle, et al., 2016). Placing students in houses can help to build a positive climate perception amongst students who struggle academically. Students within a house system are noted as feeling safer and more comfortable within their school environment (Brennan, 2012). When examining school climate, the seminal studies Edmonds (1979) and Lezotte (1991, 2001) determined that a climate of high expectation for success was characteristic of an effective school. Early researchers determined that a school’s distinctive environment affected the learning of its students and the instruction of
its teachers (Allen, Grigsby, & Peters, 2015). A positive school climate is associated with the
day-to-day operations of a school campus (Thapa et al., et al., 2013). Research suggests a
correlation between a positive school climate to problem and risk prevention, as well as teacher
retention and employment satisfaction (Allen, et.al. 2015; Thapa et al., 2013). Research also
suggests that an improvement in school climate promotes a healthier and safer learning
environment for both students and teachers (Allen et.al, 2015; Ozgenel, 2020). A positive school
facilitated by a transformational school leader, improves teachers’ perceptions of the school
environment (Akdemir, 2020); and allows students to thrive both academically and socially
(Cornwall, 2018).

According to Cohen (2012) that must be addressed when addressing school climate
reform. Safety refers to the physical and socio-emotional environments of the school. Safety also
includes feelings of safety with regard to social, emotional, intellectual, and physical needs
(Betters-Bubon, 2012). The house system supports the domains of school climate reform that
includes students and staff feeling safe, the building of relationships, social support through
collaboration and respect for diversity through distributed leadership.

Positive Behavioral Interventions and Supports (PBIS) is an approach that seeks to
transform the school climate by establishing a positive school culture that addresses the needs of
all students (Hernandez, 2020). Schoolwide programs like PBIS have shown to be effective in
altering students ‘and staff perceptions of school climate. PBIS is an applied science that uses
educational methods to teach the behavior to minimize problem behavior (Betters-Bubon, 2012).
Some studies have begun to link school wide prevention frameworks such as PBIS to positive
school climate outcomes (Jensen, 2021). In a large, randomized study of elementary schools, it
was noted that significant changes in organizational health, including staff perceptions and
overall feelings of well-being, were attributed to school wide implementation of PBIS (Betters-Bubon, 2012).

An effective school climate also leads to better academic achievement, attendance, and reduces unwanted behavior (Hernandez, 2020). A central tenet of Level 2 of Bronfenbrenner’s theory concerns the need for organizations to establish an ongoing pattern of exchange of information between two or more settings (Onwuegbuzie, Collins, & Frels, 2013). For a child this is the interrelation between family experiences and school experiences or between school experiences and neighborhood experiences. This exchange in the system will require commitment and ongoing assessment of individuals and their interaction with their environment (Betters-Bubon, 2012). When it comes to the positive development of children and adolescents, Bronfenbrenner’s theory requires a complex reciprocal interaction within social relationships that must occur on a regular basis (Bronfenbrenner, 1989). PBIS addresses the components of interactions on a school campus that create a positive school climate (Hernandez, 2020). The house system is reflective of both Bronfenbrenner’s systems theory and on the PBIS. The social construct of a house system has activities that help students and teachers to connect in the school environment, which facilitates a positive school climate.

In a more recent study, the concept of social-emotional learning (SEL) has emerged in elementary schools (McCormick, Cappella, O’Connor, & McClowry, 2015). The researchers found that programs that target social and emotional learning of students may improve school climate (McCormick et al., 2015). It was also discovered that SEL programs had a greater impact on struggling students in schools that lacked equitable access to resources (McCormick et al., 2015). An SEL program is very different from a house system, however both programs share similar goals and structures that have a positive impact on changing the school climate.
(McCormick et al., 2015; Pounds, 1968). The attributes of PBIS and SEL are reticent in the structure of a house system, therefore further research in needed to determine the impact of a house system on school climate.

A positive school climate is associated with improved academics, contributes to the improved emotional development of students, and leads students to make healthy lifestyle choices (Cohen, 2012). Kotok, et al., (2016) reviewed data from several studies on high school students have shown that a positive school climate that establish disciplinary order and create stronger relationship attachments are associated with the decreased likelihood for students to drop out. Research has shown that there is a correlation between improved school climate and had a reduction in psychological distress at school (Alivernini, et.al., 2020). A house system does not address mental health or psychological distress but can contribute to creating a positive school climate (Pounds 1968; Betters-Bubon, 2012).

Transformational Leadership

Transformational leadership however is considered to be one of the most effective leadership styles that encourages team creativity (Van Dijk, Kark, Matta, & Johnson, 2021). James MacGregor Burns (1978) coined the term transformational leadership in his book, Leadership. Transformational leadership transforms the follower to a higher realm of motivation where the leader inspires the followers to rise above and beyond current levels of achievement and performance (Liu, 2018). Effective principal leadership demonstrated in transformational leadership is fundamental to achieving successful school outcomes and improving schools (De Lisle, et al., 2020).

Leadership and followership are inextricably linked (Pugh, 2007). Transformational leadership transforms the follower’s attitude, beliefs, and behaviors (Anderson, 2014). The
attributes of this leadership style can be key to the population they serve. The transformational leader contributes to teachers’ positive beliefs about themselves, and such beliefs are the foundation of collective teacher efficacy (Liu, 2021). The embodiment of this concept could be the essential element needed to have a positive impact on overall school improvement.

School leaders and teacher leaders who incorporate a transformational leadership style have an opportunity to cultivate a school climate that can have a positive impact on student performance (Marzano, Waters, & McNulty, 2005). An open school climate is facilitated by the leader, and it is one where students and teachers collaborate are able to participate in decisions (Ozgenel, 2020). A culture of respect is developed and that yields to a positive school climate. Transformational leaders have a positive impact on teacher commitment and job satisfaction (Perko et al., 2014), which are factors that are indicative of a positive school climate. Effective school leadership is a key component to creating a positive school climate (Allen, et al., 2015), which is integral to school improvement.

Burns (1978) seminal work considers him as the founder of modern leadership theory and is responsible for two terms that have bandied about in discussions of leadership in business and in education: transformational leadership and transactional leadership. The ever-changing environment of school systems and the need for exceptional leadership has researchers asserting that transformational leadership style that is most appropriate for today’s schools (Anderson, 2014). When it comes to transformational leadership in school settings, Leithwood (1992) purports that transformational leadership is best suited for coping with the demands of schools in the twenty-first century. Transformational leadership is positively related to teachers’ perceptions of their school climate (Onorato, 2013).

Leadership is an important area of focus for researchers especially given the emphasis on
school accountability and school improvement (Allen, et al., 2015; Jarl, et al., 2021). Transformational leadership has proven to be successful in business organizations in regard to the positive effects on employee job performance, commitment, and satisfaction. As schools become business oriented and managerially complex, school leaders can benefit from training and development in leadership styles that have been successful in both business and educational settings (Anderson, 2014). Some research now recommends that transformational leadership approaches be practiced and featured as components of principal preparation programs (Chubb, 2014; Onorato, 2013).

When a principal is able to provide evidence that she understands the need to empower teachers, there is an increased commitment towards meeting school improvement goals (Allen et al., 2015). Transformational leadership has been found to have an impact on teachers’ perceptions of school conditions (Bush, 2018). Teachers and principals need to work together to create a culture of excellence at their schools; and transform the attitudes, beliefs, and behaviors of individuals in the school community.

Transformational leadership behaviors are also most frequently evident in high performing schools (Liu, 2018). Bass’s (1985) work is considered to be cornerstone research on transformational leadership in the classroom setting. He purports that transformational leaders convert followers into disciples. It is believed that transformational leaders will effectively clarify roles and responsibilities, while placing a strong emphasis on being a visionary and with a focus on developing others (Larson, 2009). Several educational leadership researchers have subscribed to the transformational leadership framework as a construct that can support school improvement (Leithwood, 1992; Quin, et al., 2015). According to Chubb (2014), education leaders have been prepared to maintain schools, not transform schools; and only until recently have organizations
emerged with the aim to prepare school-based administrators to lead schools.

When school-based administrators engage in transformational leadership behaviors they enhance the meaningfulness of a teacher’s work (Perko, Kinnuen, & Feldt, 2014). Engin (2020), found that teachers who had a high level of motivation had a positive effect on student achievement. When teachers feel competent, they care about their more, and students, in turn, are more enthusiastic about putting forth maximum effort in their work. Motivated teachers were willing to communicate and cooperate with their colleagues and other stakeholders (Engin, 2020). A teacher’s positive perspective on the work environment has a significant impact on the teaching process and educational outcomes like student achievement (Osher, et al., 2020).

Research has not found a significant relationship between transformational leadership and its impact on school climate and student achievement (Allen et al, 2015, Anderson, 2014; Larson, 2009; Onorato, 2013); the implementation of a house system facilitates the combining of shared leadership and transformational leadership styles. These leadership styles facilitate improved school climate and improved student outcomes (Leithwood, 1992; Pugh 2007). Transformational leadership and its potential impact on school improvement has significant implications for the school-based leadership. The demands of school leaders to improve student outcomes are coupled with other multiple roles and responsibilities that have researchers reviewing the traditional role of administrators to a modern form of shared leadership that can ultimately transform schools (Euturk & Nartgun, 2019).

Transformational leadership styles promise to enhance a school leader’s ability (Leithwood, 1992). The business model has been recently applied to schools and is proving to be successful as schools have now become social institutions operating as a business (Anderson, 2014; Chubb, 2014). School systems and school-based administrators are faced with an unprecedented amount of
local, state, and federal accountability (Larson, 2009; Marzano, Waters, & McNulty, 2005). Leaders who practice transformational leadership make exemplary changes in an organization (Quin, et al., 2015). Universities and alternative preparation programs are encouraged to teach school-based administrators transformational leadership practices that they can incorporate when looking at student achievement data to drive instruction (Quin, et al., 2015).

Distributed Leadership

School leadership behaviors are at the heart of school improvement and teaching processes (Coban & Atasoy, 2020). Distributive leadership is viewed as a product of the interactions of school leaders, followers, and their situation; where shared decision making involves stakeholders at multiple levels (Liu, Bellibas, & Gumus, 2021). The house system purports the framework of distributed leadership that includes school leaders, teachers, and students. In a house system, different leaders can arise based on the various academic and sport activities that are occur on a school campus (Schafer, 2018). Students and teachers alike have an opportunity to share knowledge and expertise through the various academic competitions or team activities that are indicative of a house system (Betters-Bubon, 2016; Cornwall, 2018). While more research is needed to investigate the relationship between distributed leadership and organizational improvement, distributed leadership does promote the collaborative, democratic school environment; like that of a house system, that is indicative of improved student outcomes (Harris, 2005).

School principals are expected to develop goals which inspire teachers and are to be accepted on a school-side consensus (Boru, 2020). When principals provide teachers with opportunities to participate in leadership activities their perspective changes (Lambert, 2003). It is their imperative for school leaders to harness the expertise of individuals with diverse perspectives, motivations, and values (Alvy & Robbins, 2010). Distributed leadership is an interaction of shared
responsibilities between the leader and members. Distributed leadership creates solidarity in staff actions that determine the direction of leadership practices (Euturk & Nartgun, 2019). It focuses on the importance of relationships that can create innovative and effective learning schools. Distributed leadership is also more likely to result in the long-term stability and continuity of school performance due to the structure of sharing expertise that is built within the system (Valdez, 2016).

Distributed leadership has been at the forefront of school leadership literature given the focus on the sharing of leadership work across individuals and roles (Angelle, 2010). Distributive leadership calls for leaders within schools to share important tasks through formal leadership positions that promote and support this form of leadership. Distributed leadership is regarded as group activity where the school leader involves various stakeholders in shared decision making that builds the capacity within the school environment (Liu, et al., 2021). The traditional English house system relied on the distributed leadership theory given that the organization of a house system divides students into smaller groups, and an adult is placed in a position of authority over each house (Thomas, 2016). The Ministry of Education in the United Kingdom began to note the house system as a potential way to organize students for the purposes of sports competition and distributed leadership (Marland, 2002). Distributed leadership occurs when some of the responsibilities of the principal are given to others working in the school environment (Lashway, 2003). Distributed leadership amongst students like that of a house system has shown to strengthen organization loyalty, culture, and trust (Bolden, 2011).

When distributed leadership occurs among student led groups a positive school climate is created and this positive climate has a positive impact on the overall development of the students involved (Pedersen, Yager, & Yager, 2012). Student led groups can develop positive structures with limited support from teachers as long as the students are provided general guidelines for their roles
and interactions (Pedersen, et al., 2012). When leadership roles are given to students it results in trust being built and students having a sense of control over their environment which enhances their perception of the school (Angelle, 2010).

As educational organizations are faced with demands for improvement, new leadership perspectives like that of distributed leadership emerge (Valdez, 2016). According to Halverson, Kelley, and Shaw (2014), distributed leadership is especially important for efforts to build organizational capacity for school improvement and educational reform. Distributed leadership can support school leaders with meeting the demands that policy makers continue to make regarding new curriculum frameworks, evaluation practices, and instructional processes all in an effort to make schools more efficient and effective. Leadership approaches that prioritize a distribution of responsibilities increase the commitment of teachers and create positive effects on how they perceive their administrators (Engin, 2020). Distributed leadership can be an important element for school improvement as it supports teachers developing a positive perspective of their work environment through positive experiences which in promotes student motivation and academic achievement (Erturk & Nartgun, 2019).

Teacher-Student Relationship

According to Hajovsky, Chesnut, and Curtin, (2020), quality of the teacher-student relationship is a crucial factor relating to student success given that a positive and supportive teacher can foster students’ academic growth. There are sociological and psychological factors that influence the outcome of student performance which includes the students’ surroundings and the effectiveness of the teacher (Lee, Worthington, & Wilson, 2019). The quality of teacher-student relationships can have a direct impact on how well or how poorly students perform (Schmoker, 1999). Bernhardt’s (2013) research suggests that schools need to have working
structures that guide how data is used to inform instruction. More importantly, schools need to have structures in place to determine what and how teachers are teaching so that ultimately student learning can improve (Jarl, Andersson, Blossing, 2021). A house system builds on the tenets of teamwork and working structures; that facilitate improved student achievement.

Quality relationships with teachers can serve to buffer stressors and mitigate home-related risk factors that can harm student achievement (Hajovsky et al., 2020). Helping teachers to develop supportive and positive relationships promote intrinsic motivation in students to learn, and facilitates long-term engagement, and achievement among diverse learners (Froiland, Worrell, & Oh, 2018). A strong teacher-student relationship is also associated with students paying more attention in class, scoring higher on tests, and being more motivated (Gehlbach, Brinkworth, & Harris, 2012).

Uslu and Gizir (2016) describe life at school to be a complex and multi-faceted school environment that has different domains that include the classroom’s social learning dynamics. A house system is designed as a social structure that focuses on cross-grade integration which is vital to promoting collaboration and support for students with diverse backgrounds in elementary schools (Schafer, 2018). This inclusive environment with positive interactions between the teacher and the student has a positive effect on student achievement.

A house system promotes positive relationships between teachers and students through the competitive activities. When teachers build supportive and positive relationships with students it results in the teachers’ beliefs about their ability to teach effectively (Mitchell, et al., 2010). An increased belief in a teacher’s ability to teach ultimately leads to an improvement in teaching behaviors (Hajovsky et al., 2020). The increased motivation and persistence that is generated by this teacher’s belief in his or her ability promotes the engagement of students.
Teachers who have positive relationships with students also view themselves as caring and supportive teachers therefore they subsequently develop teaching beliefs their identity as a teacher (Hopkins, et al., 2014). The positive teacher-student relationships impact student engagement that has a positive impact on student achievement (Jarl, et al., 2021).

Student Achievement

The purpose of education is to attain student achievement. Academic success is measured by grades and standardized test scores, and that success is the desire of parents, administrators, teachers, and children (Engin, 2020). The primary focus of schools is to improve the academic performance of all students (Brown, 2016). An intense focus is needed when students are not meeting state achievement goals. The efforts to improve education in schools focus on a need for school transformation in order to attain student achievement (Erturk & Nartgun, 2019). In his study of school improvement, Schmoker (1999) noted that schools with successfully implemented teamwork strategies that are tied to student learning have a greater increase in student achievement. These schools are also more likely to experiment with instruction, have more assistance for beginning teachers, and have overall increased social and psychological job satisfaction (Engin, 2020). The current focus on student achievement through assessment and an increased demand for accountability are important topics in education (Onorato, 2013).

Some schools have focused on the relationship between physical and cognitive health on academic outcomes (Centeio, Somers, Moore, Kulik, Garn, Martin, & McCaughtry, 2018). The physical and cognitive health of a child as they enter preschool and elementary school is emphasized the emotional nature of social interactions that occur between teachers and students (Valiente, Swanson, DeLay, Fraser, & Parker, 2020). The house system promotes social activities related to sports as means of building comradery amongst students and staff (Cornwall,
Teachers who encourage students and give them opportunities to practice can drive improvement in student achievement (Hajovsky, et.al. 2020). A house system promotes teacher closeness and the building of relationships through academic and team sports (Betters-Bubon, 2012). With these qualities a house system has the potential to improve student achievement.

School leadership often has an emphasis on building a shared vision, improving, communication, and developing collaborative decision-making structures, which are also important to school transformation and improvement (Bernhardt, 2013). Effective school leadership is often attributed to improved student achievement (Leithwood, 1992). The term instructional leadership focuses on the administrator’s ability to improve the technical and instructional activities of a school by closely monitoring the actions and outcomes of the teachers and students (Leithwood, 1992, Marzano, Waters, & McNulty, 2005). Principals who encourage and support the development of teachers, can inspire teachers to try new instructional strategies (Allen, Grigsby, & Peters, 2015).

A house system promotes a school-within-a-school and small group learning that can facilitate the opportunity for teacher to create high performing teams that are focused on improving student achievement (Thomas, 2016). The team building structure of a house system facilitates teamwork strategies that are tied to student learning that result in an increase in student achievement (Schmoker, 1999). A house system also fosters natural relationships between school leadership, teachers, and students (Betters-Bubon, 2012; Brennan, 2012). More research is needed to determine if the implementation of a house system is a viable school improvement effort that impacts student achievement.

Summary

School systems are faced with local, state, and federal accountability (Anderson, 2014),
in addition to the complexities of the come with serving diverse learners’ elementary schools. The topic of school effectiveness and student achievement has also contributed to leadership styles also becoming a significant focus in regard to school improvement (Onorato, 2013). In a study conducted by Green (2006), the effects of the house system as an intervention resulted in improved academic results in the classroom and increased positive attitudes by both staff and students towards responsibility to one’s community. At Most Holy Trinity and Goleta Valley Junior High, the reason for implementing a house system was due to a combination of concerns, regarding student and teacher isolation, marginalization, and the effects that those factors had on relationships within the school community and school climate (Brennan, 2012; Green, 2006). In these two articles there was a positive impact of a house system on the school community and school climate. Other research has supported the claim that improved relationships between staff and students result in an increase in student academic performance and a reduction in behavior incidents (Hajovsky, et al., 2020; Kotok, et al., 2016; Uslu & Gizir, 2016).

Brennan (2012) in his article discussed the inherent design of a house system with focused on the care of the individual students at Most Holy Trinity Catholic School. It was revealed that the implementation of a house system led to significant positive changes in the perceptions of staff and students and there were important changes in stakeholder perceptions that were a consequence of the implementation of the house system into the social structure and dynamic of the school. The results of the study were, therefore, significant to the researcher as it relates to the implementation of the house system in a primary setting. Teachers who experience a house system felt empowered and as a result lead to increased teacher retention (Cornwall, 2018). This factor is important to building a sense of community within a school amongst the staff and is an important attribute to improving the climate of a school environment.
Calls for educational reform have cycled regularly since the onset of compulsory education (Allen et al., 2015). Schools are expected to be vehicles of access that promote equity and opportunity while increasing economic growth and the overall well-being of students (Halverson, et al., 2014). School leadership is also essential to the success of school organizations (Quin, Deris, Bischoff & Johnson, 2015); while the goal of school improvement is to create a system of education that maximizes the potential and success of all children (Bernhardt, 2013). These high expectations can be managed when a distributed leadership style is engaged.

Distributed leadership combined with the effective leadership attributes of a transformational leader can cultivated a positive school climate (Leithwood, 1992; Larson, 2009; Angelle, 2010). School climate is the quality and character of a school and has a significant influence on the processes of education and fosters the development and learning in students (Smallwood, 2014). Overall school climate also has an effect on the job satisfaction levels of its staff members (Allen, et al., 2015). A positive school climate is associated with stronger academic performance, a decrease in student discipline, and an increase in teacher retention (Brown, 2016). A house system’s effects on school climate and school community have primarily been positive (Brennan, 2012); however, there is currently no studies that report the impact of a house system on student achievement. This study will contribute to the literature on the impact of a house system as a school improvement effort and its effect on school climate and student achievement.
CHAPTER THREE: METHODOLOGY

Introduction

This causal-comparative study tested the research questions stated in Chapter 1 that examine the effects of a house system on school climate and student achievement at elementary schools in a regional school district in central Florida. The methodology used to test the research questions will be presented in this chapter. This chapter has five major sections: (a) purpose of the study, (b) selection of participants, (c) instrumentation, (d) data collection, and (e) data analysis.

Purpose of the Study

The purpose of this study is to determine if the implementation of a house system is an effective intervention strategy for school improvement in elementary schools. The study will include a descriptive analysis of six elementary schools; four that implemented a house system and two that did not.

Selection of Participants

During the summer of 2018, principals and teacher leaders from six schools attended Ron Clark Academy which modeled the effective implementation of a house system. Four of the six schools chose to implement a house system for school year 2018-2019. Survey data from fifth grade students from all six elementary schools were used in this study. The study was reviewed and approved by the Institutional Review Board (IRB) of the university; and by the research and accountability department of the local school district in central Florida. The 2018-2019 climate survey, attendance, suspension, and standardized assessment data of the selected schools were reviewed to determine the effect of a house system on school climate and student achievement. Four of the six schools chose to implement a house system. These four schools had experienced
a sustained school grade of a C or lower for the previous school year; one school had a B the previous school year, and had been an A school for several years but dropped from an A to a B the previous school year. As a requirement of the school district, 5th grade students at each of the schools are required to complete a climate survey facilitated by Cognia®. The attendance and suspensions of all 5th graders at each of the six schools will also be analyzed. FSA ELA and FSA math student achievement data of all 5th grade students at each of the six participating schools will be analyzed.

Instrumentation

School Climate

The Cognia® student climate survey will be used to determine the perceptions of the overall school environment. Cognia® is an accreditation service the school district uses to provide data on school climate. Cognia®, formerly known as AdvancED, is a non-profit, non-governmental organization that accredits primary and secondary schools throughout the United States (Nelms, 2010). This district-wide survey is used as a part of the school district’s accreditation process. Data from school year 2018-2019 on student attendance and student suspensions will be reviewed from the six schools. Attendance and suspension data will be requested from the research and evaluation department of the school district in which this study was conducted.

Student Achievement

Florida Standard Assessment (FSA) results in reading and math for students in grades 5 will be used. This data element will be requested from the research and evaluation department of the school district in which this study was conducted.
Data Collection

Following IRB approval and permission from the school district (See Appendix B), data elements were requested from the Research and Evaluation (R&E) department in which the selected elementary schools reside. After IRB approval, the elementary school principals at the six schools were contacted by email with information regarding the purpose of the study and the process for collecting data. The principals will affirm whether they knew of or attended the house system professional development and will also affirm if their school implemented a house system or not during school year 2018-2019. The house system was implemented at four elementary schools during the 2018-2019 school year, while the other two elementary schools did not implement a house system. The annual survey results for elementary students produced by Cognia© will be reviewed to include school year 2018-2019. (See Appendix C).

Data Analysis

This causal-comparative study investigated the impact of a house system on elementary schools. Associational research was used to examine the differences between elementary schools that implemented the house system and elementary schools that did not (Fraenkel, Wallen, & Hyun, 2015). The implementation of a house system was already established for four schools included in the study; where two of the schools included in the study had an opportunity to attend the PD on a house system but did not implement the house system for the 2018-2019 school year. No additional support or resources were provided to six schools included in this study.

In causal-comparative studies, educational researchers want to not only describe situations or events, but they also want to know if there is a possible relationship between events (Fraenkel, Wallen, & Hyun, 2015). The Cognia© ratings provided by 5th grade students at all six
schools will be analyzed. The descriptive analysis of student attendance, suspensions, and student academic performance of all six schools will also factor into this causal-comparative study. Table 1 provides a summary of the research questions, data sources, variables, and statistical analysis proposed for each question.

Research Question 1

The first research question will seek to determine to what extent, if any, does the implementation of house system have an effect on school climate in elementary schools. The data collected for this question is quantitative. The closed-ended questions in the Cognia® survey regarding climate will produce results on a 5-point Likert scale (See Appendix C). An independent t-test will be utilized for this research question.

Research Questions 2

Research question 2 seeks to determine to what if any, does the implementation of a house system have an effect on student attendance in elementary schools. An independent t-test will be utilized for this research question. The answer to this question will determine if there is a significant difference between the mean for student attendance at four elementary schools that implemented a house system, and the mean student attendance at the two schools that did not implement a house system (Fraenkel, et.al. 2015). The level of significance between the means of each sample will determine if the implementation of a house system had a positive impact on student attendance.

Research Questions 3

Research question 3 seeks to determine to what extent, if any, does the implementation of a house system have an effect on student suspensions in elementary schools. Due to extreme outliers of very high or very low student suspensions, the Mann Whitney U was utilized for this research question. The Mann Whitney U is a non-parametric test that will account for any
outliers in the sample of elementary students used in this study (Fraenkel, et.al. 2015). This test will allow the researcher to determine if there is a significant difference in rank for student suspensions at four elementary schools that implemented a house system, and the rank for student suspensions at the two schools that did not implement a house system (Fraenkel, et.al. 2015). The level of significance between the means of each sample will determine if the implementation of a house system had an impact on student attendance.

**Research Question 4**

The fourth research question will seek to determine to what extent, if any, does the implementation of a house system in elementary schools’ have an effect on student achievement. An independent $t$ test will be used for research question 4 (Fraenkel, et.al. 2015). The scale scores for $5^{th}$ grade students in FSA ELA and FSA math will be used for student achievement data. The analysis will determine if a house system had an effect on student achievement (Fraenkel, et.al. 2015).

**Table 1: Research Question Matrix**

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Data Sources</th>
<th>Variable</th>
<th>Data Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 To what extent, if any, does the implementation of a house system have an effect on school climate in elementary schools?</td>
<td>Cognia©</td>
<td>School Climate</td>
<td>Independent $t$-test</td>
</tr>
<tr>
<td>2 To what extent, if any, does the implementation of a house system have an effect on student attendance in elementary schools?</td>
<td>School district Research and Evaluation</td>
<td>Student Attendance</td>
<td>Independent $t$-test</td>
</tr>
<tr>
<td>3 To what extent, if any, does the implementation of a house system have an effect on student suspensions in elementary schools?</td>
<td>School district Research and Evaluation</td>
<td>Suspensions</td>
<td>Mann-Whitney U</td>
</tr>
<tr>
<td>4 To what extent, if any, does the implementation of a house system have an effect on student performance in reading and math on standardized state tests in elementary schools?</td>
<td>School district Research and Evaluation</td>
<td>Student Achievement</td>
<td>Independent $t$-test</td>
</tr>
</tbody>
</table>
Summary

The purpose of this study was to determine the effects of an established house system on the school climate and student achievement in elementary schools. A house system is a team building structure that connects students across grade levels and connects students to various school personnel other than only their assigned classroom teacher. The house system is being used as part of a school improvement effort for elementary schools in one regional area of a school district in central Florida. This study will examine the impact of a house system on school climate and student achievement.

Conclusion

Schools need a framework for continuous school improvement and a process to focuses on systemic improvement (Bernhardt, 2013). In order for schools to be effective, there needs to be a framework for continuous improvement (Jarl, Andersson, & Blossing, 2021). There is little evidence on how a house system impacts overall school improvement as it relates to school climate and student achievement in elementary schools. It is anticipated that the findings of this study will add to the research on school improvement efforts in elementary schools.
CHAPTER FOUR: RESULTS

Introduction

This study is a causal-comparative examination that investigated the effects of a house system one year after implementation on school improvement as indicated by school climate and academic achievement of students in elementary schools. School climate included examining student perceptions and attitudes towards their learning environment based on a Cognia© survey, student attendance throughout the 2018-2019 school year, and student suspensions throughout the 2018-2019 school year. The academic achievement of students in FSA ELA and FSA mathematics for school year 2018-2019 were examined to determine student achievement. The purpose of this study was achieved by examining the school climate and student achievement data of four elementary schools that implemented a house system with a comparison of the data of two elementary schools that did not implement a house system. This chapter presents data analysis results for the following four research questions.

• To what extent, if any, does the implementation of a house system have an effect on school climate in elementary schools?

• To what extent, if any, does the implementation of a house system have an effect on student attendance in elementary schools?

• To what extent, if any, does the implementation of a house system have an effect on student suspensions in elementary schools?

• To what extent, if any, does the implementation of a house system have an effect on student performance in reading and math on standardized state tests in elementary schools?
Presentation and Analysis of Data

School Climate

The Cognia© longitudinal student survey results for the school year 2018-2019 were used to gather school climate data. The average scores of twenty questions that were based on a five-point Likert Scale provided the data for school climate for all six schools included in the study. A positive school climate was defined by the average of student ratings on the Cognia© survey. Table 2 reports mean percentage and standard deviation for school climate, and Tables 3 and 4 report the assumptions on homogeneity of variances and the t-test results for research question one.

Research Question One

*Question 1: To what extent, if any, does the implementation of a house system have an effect on school climate in elementary schools?* The first research question examined the impact of the house system on school climate. A t-test was used to analyze this question and to identify the standard deviation and mean score of student ratings on the Cognia© survey. The analysis determined if there was a statistically significant relationship existed between student perceptions of school climate in schools that implemented a house system and schools that did not. The statistical assumptions for this analysis were tested. The assumption of homogeneity of variances has been met, $F(1, 670) = .088$. Based on the $t$-test, there is not a significant difference in school climate between 5th grade students who were in a house system and 5th grade students not in a house system, $t(670) = .345, p = .730$. The mean for 5th grade students in a house system was $M = 2.71, SD = .268$ and the mean for 5th grade students not in a system was $M = 2.71, SD = .252$. 

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Table 2  Descriptive Statistics of Student Responses on School Climate

<table>
<thead>
<tr>
<th>School Climate</th>
<th>House</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>House</td>
<td>520</td>
<td>2.71</td>
<td>.268</td>
<td>.012</td>
<td></td>
</tr>
<tr>
<td>No House</td>
<td>152</td>
<td>2.71</td>
<td>.252</td>
<td>.020</td>
<td></td>
</tr>
</tbody>
</table>

Table 3  Assumptions for Homogeneity of Variances on School Climate

<table>
<thead>
<tr>
<th>School Climate</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equal variances assumed</td>
<td>.088</td>
<td>.767</td>
</tr>
</tbody>
</table>

Table 4  Independent Sample t Test for School Climate

<table>
<thead>
<tr>
<th>School Climate</th>
<th>p</th>
<th>Mean Difference</th>
<th>t</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equal variances assumed</td>
<td>.730</td>
<td>.00842</td>
<td>.345</td>
<td>670</td>
</tr>
</tbody>
</table>

**Student Attendance**

Student attendance data were another factor used to determine the impact of a house system on elementary schools. Attendance is indicated by the rate of student attendance in school year 2018-2019 which had 180 school days. The average student attendance was calculated by using the daily attendance of 5th grade students who were enrolled at the six schools included in this study. The attendance rate of 5th grade students at four of the schools that had implemented a house system was compared to the attendance rate of 5th grade students at two schools that did not implement a house system. Table 5 reports mean percentage and standard deviation for student attendance, and Tables 6 and 7 report the assumptions on homogeneity of variances and the t test results for the research question two.
Research Question Two

*Question 2: To what extent, if any, does the implementation of a house system have an effect on student attendance in elementary schools?* To answer question two, the average attendance rate of students was calculated for each of the six schools included in the study. The attendance for each of the 5th grade students at all six schools were analyzed using a t-test to identify the standard deviation and mean score of each of the questions. The analysis also determined if a statistically significant relationship existed between student attendance in schools that implemented a house system and student attendance for schools that did not. In answering this research question on student attendance, the assumption of homogeneity of variances has been met with $F(883, 605) = 2.191$. The t-test indicated that there is not a significant difference in student attendance between 5th grade students who were in a house system and 5th grade students not in a house system: $t(883) = -.275, p = .784$. The mean for 5th grade students in a house system was $M = .956, SD = .057$; and the mean for 5th grade students not in a system was $M = .957, SD = .041$.

Table 5 Descriptive Statistics for Student Attendance

<table>
<thead>
<tr>
<th>Student Attendance</th>
<th>House</th>
<th>$N$</th>
<th>$M$</th>
<th>$SD$</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>House</td>
<td>643</td>
<td>.956</td>
<td>.057</td>
<td>.002</td>
<td></td>
</tr>
<tr>
<td>No House</td>
<td>242</td>
<td>.957</td>
<td>.041</td>
<td>.003</td>
<td></td>
</tr>
</tbody>
</table>

Table 6 Assumptions for Homogeneity of Variances on Student Attendance

<table>
<thead>
<tr>
<th>Student Attendance</th>
<th>$F$</th>
<th>Sig.</th>
<th>$t$</th>
<th>$df$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equal variances assumed</td>
<td>2.191</td>
<td>1.39</td>
<td>-.275</td>
<td>883</td>
</tr>
</tbody>
</table>
Table 7  Independent Samples t Test for Student Attendance

<table>
<thead>
<tr>
<th>Student Attendance</th>
<th>p (2-tailed)</th>
<th>Mean Difference</th>
<th>Std. Error Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equal variances assumed</td>
<td>.784</td>
<td>-.001</td>
<td>.004</td>
</tr>
</tbody>
</table>

Suspensions

Discipline data was reviewed to compare the number of suspensions for school year 2018-2019 between 5th grade students at schools that implemented the house system and 5th grade students at schools that did not implement a house system. Table 8 reports the mean rank of the Mann-Whitney U results for the research question three.

Research Question Three

*Question 3: To what extent, if any, does the implementation of a house system have an effect on student suspensions in elementary schools?* A Mann Whitney U was used to determine if there was a statistically significant relationship between student suspensions in schools that implemented a house system and schools that did not. The analysis indicated that there is a significant difference in the rate of suspensions between 5th grade students who were in a house system and 5th grade students not in a house system, $U = 76035.500, z= -2.712, p = .007$. The mean rank for 5th grade students in a house system was MR = 440.25, and the mean rank for 5th grade students not in a system was MR = 450.30.

Table 8  Mean Rank of Student Suspensions

<table>
<thead>
<tr>
<th>Suspensions</th>
<th>House</th>
<th>N</th>
<th>Mean Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>House</td>
<td>643</td>
<td></td>
<td>440.25</td>
</tr>
<tr>
<td>No House</td>
<td>242</td>
<td></td>
<td>450.30</td>
</tr>
</tbody>
</table>

Student Achievement

The FSA ELA and FSA math results for the 2018-2019 year was used to determine
student achievement. The FSA scale scores in reading and math for each 5th grade student in each of the schools was included in the study. Student achievement is defined by the highest average scale score for students in schools that implemented the house system and schools that did not. Two separate independent t tests were completed to determine if a house system had impact on student achievement as it relates to their performance on FSA ELA and FSA math. Table 9 reports mean percentage and standard deviation for student achievement on FSA reading, and Tables 10 and 11 report the assumptions on homogeneity of variances and the t test results for reading on FSA.

**Research Question Four**

*Question 4: To what extent, if any, does the implementation of a house system have an effect on student performance in reading and math on standardized state tests in elementary schools?* To answer question four, two independent sample t-tests were run to determine student achievement. The FSA ELA scale scores and FSA math scale scores of 5th grade students were analyzed. The scales scores for FSA ELA and FSA math were analyzed using a t-test to identify the standard deviation and mean. The analysis also determined to what extent did the implementation of a house system have on student scale scores on FSA ELA and FSA math. In answering this research question on student achievement as it pertains to FSA ELA, the assumption of homogeneity of variances has been met; \( F(1, 819) = .164 \). The Independent t-test indicated that the implementation of a house system did have a significant impact the FSA ELA scale scores of 5th grade students who were in a house system: \( t(819) = 4.781, p < .001 \). The mean for 5th grade students in a house system was \( M = 329.09, SD = 24.23 \); and the mean for 5th grade students not in a system was \( M = 302.11, SD = 23.943 \).
Table 9 Descriptive Statistics for Student Achievement on FSA ELA

<table>
<thead>
<tr>
<th>Student Achievement</th>
<th>House</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>House</td>
<td>592</td>
<td>329.09</td>
<td>24.229</td>
<td>.996</td>
<td></td>
</tr>
<tr>
<td>No House</td>
<td>229</td>
<td>302.11</td>
<td>23.943</td>
<td>1.582</td>
<td></td>
</tr>
</tbody>
</table>

Table 10 Assumptions for Homogeneity of Variances on Student Achievement FSA ELA

<table>
<thead>
<tr>
<th>Student Achievement Reading</th>
<th>F</th>
<th>p</th>
<th>t</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equal variances assumed</td>
<td>.164</td>
<td>.686</td>
<td>4.781</td>
<td>819</td>
</tr>
<tr>
<td>Equal variances not assumed</td>
<td></td>
<td></td>
<td>4.806</td>
<td>419.043</td>
</tr>
</tbody>
</table>

Table 11 Independent Samples t Test for Student Achievement on FSA ELA

<table>
<thead>
<tr>
<th>Student Achievement Reading</th>
<th>p</th>
<th>Mean Difference</th>
<th>Std. Error Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equal variances assumed</td>
<td>&lt; .001</td>
<td>8.985</td>
<td>1.879</td>
</tr>
<tr>
<td>Equal variances not assumed</td>
<td>&lt; .001</td>
<td>8.985</td>
<td>1.870</td>
</tr>
</tbody>
</table>

Table 12 reports the mean percentage and standard deviation for student achievement on FSA math, and Tables 13 and 14 report the assumptions on homogeneity of variances and the t test results for math on FSA. Both t test results answer question four. In answering this research question on student achievement as it pertains to FSA math, the assumption of homogeneity of variances has been met; \( F(3.116) = .078 \). The Independent t-test indicated that the implementation of a house system did have a significant impact on FSA math scale scores of 5th grade students who were in a house system: \( t(821) = 5.930, p < .001 \). The mean for 5th grade students in a house system was \( M = 325.36, SD = 22.71 \); and the mean for 5th grade students not in a system was \( M = 315.14, SD = 20.65 \).
Table 12  Descriptive Statistics on Student Achievement on FSA Math

<table>
<thead>
<tr>
<th>Student Achievement</th>
<th>House</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSA Math</td>
<td>House</td>
<td>594</td>
<td>325.36</td>
<td>22.71</td>
<td>.932</td>
</tr>
<tr>
<td></td>
<td>No House</td>
<td>229</td>
<td>315.14</td>
<td>20.65</td>
<td>1.365</td>
</tr>
</tbody>
</table>

Table 13  Assumptions for Homogeneity of Variances on Student Achievement FSA Math

<table>
<thead>
<tr>
<th>Student Achievement Math</th>
<th>F</th>
<th>p</th>
<th>t</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equal variances assumed</td>
<td>3.116</td>
<td>.078</td>
<td>5.930</td>
<td>821</td>
</tr>
<tr>
<td>Equal variances not assumed</td>
<td>6.185</td>
<td></td>
<td></td>
<td>452.253</td>
</tr>
</tbody>
</table>

Table 14  Independent Samples t Test for Student Achievement FSA Math

<table>
<thead>
<tr>
<th>Student Achievement Math</th>
<th>p (2-tailed)</th>
<th>Mean Difference</th>
<th>Std. Error Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equal variances assumed</td>
<td>&lt; .001</td>
<td>10.220</td>
<td>1.723</td>
</tr>
<tr>
<td>Equal variances not assumed</td>
<td>&lt; .001</td>
<td>10.220</td>
<td>1.652</td>
</tr>
</tbody>
</table>

Summary

The causal-comparative data obtained for this quantitative research provided results of the impact of a house system on school climate and student achievement. The descriptive statistics were obtained from four data sources: Cognia© climate survey, student attendance, student suspensions and FSA scale scores in reading and math. Based on the data obtained it appears that a house system does not have an impact on school climate, student attendance, and student suspensions.

The data indicate that there is an impact of a house system on student achievement as it relates to scale scores on FSA ELA and FSA math. This discovery has implications for future research. The next chapter will discuss the significance of the findings, implications for school improvement in the field of education, and recommendations for future studies.
CHAPTER FIVE: DISCUSSION

Introduction

The preceding chapter presented and reported the analysis of data. Chapter V consists of a summary of the study, discussion of the findings, implications for practice, recommendations for further research, and a conclusion. Each of the sections will expand on the factors that were studied to determine the impact of a house system on elementary schools. Implications for practice and recommendations for further research on the effectiveness of a house system on school improvement will also be included in this discussion. Finally, a conclusion to synthesize the findings of this research and its contribution to the topic of school improvement in elementary schools, will be included in this section.

Summary of the Study

This chapter provides a review of the purpose and structure of this study, followed by the relevant findings related to the implementation of a house system and its impact on school improvement. The conclusions of this research will include how school climate, student attendance, student suspensions, and the academic performance of students in reading and mathematics are impacted by the implementation of a house system. Implications for practice and recommendations for further research are presented and discussed.

The purpose of this study was to determine the effects of an established house system on the school climate and student achievement in elementary schools. The topic of school improvement is a common thread of conversation among educators, where in order to be successful educational organizations need to be purposeful and adaptive (Burke, 2018).

This study addressed a problem that a regional area of school district in central Florida sought to resolve due to a high number of elementary schools earning lower than an A school
grade based on the results of student performance on the state assessment. The executive leadership of this region sought to address the topic of school improvement by providing a professional development at a school in Atlanta, GA that was expected to have an impact on school climate and teacher-student relationships. The executive leadership in this regional area envisioned that this professional development experience would support schools in improving school climate and thereby increasing student achievement.

Schools participating in the professional development implemented the practice of a house system to improve overall school climate and build teacher-student relationships. This implementation of a house system was the structure through which these participating schools believed school improvement effort would be made. At the time of this research, there were no studies that focused on the impact of a house system on school climate and student achievement in public elementary schools.

The theoretical framework used for this study was based on the proponents of teleological theory which are reflected in school improvement frameworks like the Florida Continuous Improvement Model (FCIM). FCIM outlines a cyclical model of plan, do, check, act which is indicative of the teleological theory (Burke, 2018). The goal of school improvement is to create a system of education that maximizes the potential and success of all children (Bernhardt, 2013). Unfortunately, continuous improvement models like FCIM only focus on how to change. This study proposed that school improvement needs a dual focus how to change and on what needs to be implemented in order to improve school climate and increase student achievement.

The research questions in this study addressed the impact of a house system on elementary schools to determine (a) is there a relationship between the attendance rate of
students after the implementation of a house system in elementary schools; (b) is there a relationship between the frequency of suspensions after the implementation of a house system in elementary schools; (c) is there a relationship in the school climate after the implementation of a house system in elementary schools; and (d) to what extend does the implementation of a house system have any impact on student performance in reading and math on standardized state tests at elementary schools?

In this causal-comparative study, historical data for the 2018-2019 was collected from six elementary schools to include student attendance, student suspensions, 5th grade student responses to the Cognia© climate survey, and FSA scale scores in reading and math. The Cognia© student survey had twenty questions where students were asked to rate their school experience on a five-point Likert Scale. The Cognia© ratings given by students at the house implemented schools and non-house implementation schools were analyzed to determine school climate. The descriptive analysis of historical student data determined if the implementation of a house system had an impact on student attendance, student suspensions, and student academic performance in FSA ELA and FSA math. A series of independent t tests were utilized to determine if there was a significant relationship between student attendance, student suspensions, school climate, student achievement as a result of a house system.

The research revealed that the implementation of a house system did not have an impact on school climate or student attendance. The implementation of a house system did however have an impact on student suspensions and student achievement in both reading and mathematics. This extent to each of these findings will be discussed in the subsequent sections.

Discussion of Findings

The decision of the executive leadership in this regional area of a school district in
central Florida to address school improvement via the implementation of a house system was supported in research. In a study conducted by Green (2006), the effects of the house system as an intervention resulted in improved academic results in the classroom and increased positive attitudes by both staff and students towards responsibility to one’s community. This section discusses the findings for each of the four research questions.

Research Question One

*Is there a relationship between school climate and the implementation of a house system in elementary schools?*

The findings resulting from research question one indicated that there is not a significant relationship between school climate and elementary schools that implemented a house system in this study. This finding is inconsistent with the research on effective schools, in that school climate has a significant influence on the processes of education that fosters the development and learning in students (Smallwood, 2014).

One factor to consider that may have resulted in this finding is that the Cognia © survey data analyzed 5th grade student responses to climate. The other research on house systems and its impact on school climate referenced the perceptions of teachers (Thomas, 2016; Cornwall, 2018). The shared vision of an effective school is reflective of the core values and beliefs of the students (Mitchell, et al., 2010). The focus of this research was on the students and their beliefs, values, and attitudes about school.

The results of this research question on the effects of a house system on school climate is inconsistent with the research (Green, 2006; Brennan, 2012; Thomas, 2016). However, it is important to note that none of the schools included in this researcher had low ratings for school climate based on the Cognia© elementary student climate survey. The overall mean rating for all
six schools on the three-point Likert scale for school climate consistently indicated a three, which reflects the highest rating for agreeing with a statement provided to students on the survey. The results however are important because a positive school climate is characteristic of effective schools (Brown, 2016).

Research Question Two.

*Is there a relationship between the attendance rate of students after the implementation of a house system in elementary schools?*

The findings for research question two revealed that there was not a significant relationship between attendance rates of students and the implementation of a house system in elementary schools. The attendance rate of students was not specifically identified in other studies that reference a house system. School level factors that such as poverty, racial and ethnic heterogeneity, mobility rates, crime and violence have been researched (Mitchell, et.al. 2010). This research question about attendance and the house system is embedded in teleological theory which focuses on social factors that influence the school environment and how it affects student outcomes (Betters-Bubon, 2012). Positive teacher-student relationships are linked to student motivation and mitigate home-related risk factors that can impact learning (Froiland, et.al, 2018).

Only the attendance rating of the 5th grade students was included in the study. Regular school attendance allows a student to develop positively when they experience reciprocal interactions within social relationships (Bronfenbrenner & Evan, 2000). The implication here is that none of the schools included in this study had an issue with the attendance rate of their 5th grade students.

Research Question Three

*Is there a relationship between the frequency of suspensions after the implementation of a*
house system in elementary schools?

The finding to this research question indicated that there is a significant relationship in the frequency of suspensions and the implementation of a house system in elementary schools. Students who were enrolled at elementary schools that implemented a house system were less likely to be suspended from school. It is important to note that there is a known practice in this school district to consider alternatives to suspensions for elementary aged students. Discipline decisions resulting in a suspension are done in collaboration with district executive leadership, which may include the area superintendent, executive administrative director, or area administrator over discipline. This result can be explained under Bronfenbrenner ecological theory on microsystems where schools are the closest factors affecting the development of a child, and that interaction over time has an impact on the development of the child (Yamauchi et al., 2017). This particular school district supports the relationship that elementary age students have with schools by having a strict criterion for suspensions. Elementary age students need to have positive experiences with a school which in turn will support their learning.

While there are no implications to note in the results of research question one and two, it is important to note the interconnectedness of those results and that to question three. In both questions one and two, none of the schools in the study had adverse reports when it came to school climate or student attendance. The 5th grade students in this study did not indicate that their school had a negative impact on their attitude about school (school climate) or their attendance.

ˈResearch Question Four

To what extent does the implementation of a house system have any impact on student performance in reading and math on standardized state tests at elementary schools?
The finding for this research question revealed that the implementation of a house system does have a significant impact on student performance in the area of reading and math on standardized state tests at elementary schools. All schools included in the study were required to have 95% of students to participate in assessments. The 5th grade students at schools that implemented a house system performed higher on FSA ELA and FSA math. This finding speaks to the ultimate goal of school improvement which is improved student achievement. These results indicate that the implementation of a house has improved the performance of 5th grade students in elementary schools. It is important to note because this school district embraces the organizational theory demonstrated in the Florida Continuous Improvement Model (FCIM). FCIM like the teleological theory, asserts a repetitive sequence of goal setting, actions, evaluation, and modifications. The cyclical process of FCIM is indicative of effective school improvement models (Bernhardt, 2013 and Burke, 2018). This result and the theoretical explanation of the FCIM will add to the research on school improvement and the implementation of a house system in elementary schools.

Implications for Practice

School improvement is a prevalent topic in educational research. There is an increasing body of literature that focuses on various factors like leadership, school climate, and individual school level characteristics; in an attempt to understand what contributes to school success (Hopkins, Stringfield, Harris, Stoll, & Mackay, 2014). The findings of this study have some implications for educators and policy makers interested in improving the outcomes for students in elementary schools. School leaders interested on transforming schools will find evidence that links the implementation of a house system to improved student performance. This study offers insight to those transformational leaders who are looking for professional development.
opportunities for teachers that positively influence student achievement. Research questions three and four demonstrate the positive impact a house system may have on student suspensions and on student achievement. The results of this research in this district with these schools indicate that the implementation of a house system did have a positive impact on student achievement in reading and math on standardized state tests.

Recommendations for Further Research

Research does suggest that school relationships have various social interactions that impact school climate (Better-Bubon, 2012). The quality of the teacher-student relationship is crucial to student success (Hajovsky, et.al, 2020). While the results of this research did not indicate a significant relationship between the implementation of a house system and school climate, the results did indicate that a house system does have a significant positive impact on the rate of suspensions and on improved student achievement in the areas of reading and mathematics in elementary schools. This is a significant result that requires further research as there are limitations that affect the results of this research. Additional research to include teacher and student interviews is warranted. The leadership style of the principal, the length of implementation of the house system, and the efficacy of the Florida Continuous Improvement Model (FCIM) embedded in the school can also affect these results. Further research would be needed to see if any of these underlying school factors affected the results. Other factors that could influence the results that warrant further research are teacher efficacy, student demographics, and Title I versus non-Title I school.

Conclusion

The findings in this study will add to the literature on implementing a house system as a school improvement effort for elementary schools as there are currently no studies at the time of
this study that has peer reviewed research on the effect of a house system on elementary schools. This study concluded that a house system does have a significant impact on student suspensions and student performance on standardized tests; FSA ELA and FSA math. A house system did not have an impact on school climate and student attendance. In this regional area of a school district in central Florida; the house system seemed to be an effective intervention to reduce student suspensions and improve student performance on standardized assessments. Further research will be needed to determine other contributing factors in elementary schools that may have affected these results. It would be beneficial for elementary schools to consider doing observations and further research if choosing to adopt the practice of a house system. This research does demonstrate that a house system organization can support large elementary schools reducing suspensions and improving student achievement by creating a competitive academic environment that is structured by the school-wide positive behavior structure that is characteristic of a house system.
APPENDIX A: UCF IRB APPROVAL
NOT HUMAN RESEARCH DETERMINATION

October 14, 2020

Dear Carol-Ann Clenton-Martin:

On 10/14/2020, the IRB reviewed the following protocol:

<table>
<thead>
<tr>
<th>Type of Review</th>
<th>Initial Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title of Study</td>
<td>The effects of a house system on school improvement in elementary schools: school climate and academic achievement</td>
</tr>
<tr>
<td>Investigator</td>
<td>Carol-Ann Clenton-Martin</td>
</tr>
<tr>
<td>IRB ID</td>
<td>STUDY00002308</td>
</tr>
<tr>
<td>Funding</td>
<td>None</td>
</tr>
<tr>
<td>Grant ID</td>
<td>None</td>
</tr>
</tbody>
</table>
| Documents Reviewed | • Clenton-Martin HRP-251- FORM - Faculty Advisor Scientific-Scholarly Review Fillable Form - Signed.pdf, Category: Faculty Research Approval;  
• HRP-250-FORM- Request for NHSR (1).docx, Category: IRB Protocol;  
• OCPS Specific Data Elements - Pg. 7-9, Category: Other; |

The IRB determined that the proposed activity is not research involving human subjects as defined by DHHS and FDA regulations.

IRB review and approval by this organization is not required. This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these activities are research involving human in which the organization is engaged, please submit a new request to the IRB for a determination. You can create a modification by clicking Create Modification / CR within the study.

If you have any questions, please contact the UCF IRB at 407-823-2901 or irb@ucf.edu. Please include your project title and IRB number in all correspondence with this office.

Sincerely,
Racine Jacques, Ph.D.
Designated Reviewer
OCPS Application to Conduct Research
Research Notice of Approval

Approval Date: 11/17/2020  Study ID Number: 294
Expiration Date: 11/16/2021
Project Title: The effect of house systems on school improvement in urban elementary schools: School climate and academic achievement

Requester: Carol-Ann Clenton-Martin
Sponsoring Agency/Organization/Institutional Affiliation: Orange County Public Schools

Thank you for your request to conduct research in Orange County Public Schools. We have reviewed and approved your application. This Research Notice of Approval (R-NOA) expires one year after issue date, 11/16/2021.

Additionally, we have received principal approval from the following school(s) to participate in your study:
  • APOPKA ELEMENTARY, Principal Latricia Pinder, latricia.pinder@ocps.net
  • LOVELL ELEMENTARY, Principal Melissa Sarasty, melissa.sarasty@ocps.net
  • CLAY SPRINGS ELEMENTARY, Principal Rebecca McDaid, rebecca.mcdaid@ocps.net

If you are interacting with OCPS staff or students, you may email the school-based administrators who have indicated interest in participating, including this notice as an attachment. After initial contact with applicable administrators, you may email any necessary staff included in your application. This approval notice does not obligate administrators, teachers, students, or families of students to participate in your research study/project; participation is entirely voluntary.

You are responsible for submitting a Change/Renewal Request Form to this department prior to implementing any changes to the currently approved protocol. If any problems or unexpected adverse reactions occur as a result of this study, you must notify this department immediately. Allow 45 days prior to the expiration date, if you intend to submit a Change/Renewal Request Form to extend your R-NOA date. Otherwise, submit the Executive Summary (along with the provided Cover Page) to conclude your research with OCPS and within 45 calendar days of the R-NOA expiration. Email the form/summary to research@ocps.net. All forms may be found at this link.

Should you have questions, need assistance or wish to report an adverse event, please contact us at research@ocps.net or by phone at 407.317.3370.
Sincerely,

Xiaogeng Sun, Ph. D.
Director, Research and Evaluation
Orange County Public Schools
research@ocps.net
2019.07.31
407.317.3200, Ext. 200-4730
2019.07.31
Student Survey (Elementary)  
Sample School  
1234567890  Survey Code  

Instructions  
The following statements are to find out how you feel about your school. This is not a test. There are no right or wrong answers.

Information About Me  
1. I am a:  
   1 = Boy  
   2 = Girl  
2. I am... (choose only one)  
   1 = American Indian or Alaska Native  
   2 = Asian  
   3 = Black or African American  
   4 = Native Hawaiian or Other Pacific Islander  
   5 = White  
   6 = Two or more races  
3. I am...  
   1 = Hispanic  
   2 = Not Hispanic or Latino  
4. My grade in school is...  
   3 = 3rd grade  
   4 = 4th grade  
   5 = 5th grade  

Purpose and Direction  
ён = I Agree  
ён = I’m Not Sure  
ён = I Don’t Agree  
1. In my school my principal and teachers want every student to learn.  
2. In my school I am learning new things that will help me.

Governance and Leadership  
ён = I Agree  
ён = I’m Not Sure  
ён = I Don’t Agree  
3. In my school I am treated fairly.  
4. In my school students treat adults with respect.  
5. In my school my teachers want me to do my best work.

Teaching and Assessing for Learning  
ён = I Agree  
ён = I’m Not Sure  
ён = I Don’t Agree  
6. My teachers help me learn things I will need in the future.  
7. My teachers use different activities to help me learn.  
8. My teachers listen to me.  
9. My teachers tell me how I should behave and do my work.  
10. My teachers ask my family to come to school activities.  
11. My teachers always help me when I need them.  
12. My teachers tell my family how I am doing in school.  

Resources and Support Systems  
ён = I Agree  
ён = I’m Not Sure  
ён = I Don’t Agree  
14. My school is safe and clean.  
15. My school has many places where I can learn, such as the library.  
16. My school has computers to help me learn.
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