An Examination of Relationships Between Conditions of School Facilities and Teacher Satisfaction and Attributes in High Poverty Rural Schools

by

Arthur D. Caffey

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Approved by

Frances K. Kochan, Chair, Professor Emerita, Educational Foundations, Leadership, and Technology
Ellen H. Reames, Professor, Educational Foundations, Leadership, and Technology
Paris Strom, Professor, Educational Foundation, Leadership, and Technology
Jason Bryant, Associate Professor, Educational Foundations, Leadership, and Technology

Abstract

The study examined whether a relationship exist between teachers' perceptions of the quality of their school facility and their overall satisfaction and attitudes. The study also sought to determine whether perceptual differences between respondents based on gender, years of experience, or grade level taught. Respondents were teachers in rural school systems in a Southern state.

The researcher used a quantitative research approach as the primary method of inquiry. The instrument used was the My Classroom Appraisal Protocol (Earthman & Lemasters, 2009). An additional open-ended question was added to the survey to gather feedback from teachers relative to the condition of their school and classroom facilities. The data sources included survey results from 136 individuals. All respondents were working in schools classified as Rural Distant.

Descriptive statistics were used to analyze quantitative data. Content analysis was applied to the open-ended response question. Findings indicated moderately high levels of overall teacher satisfaction with the condition of their building. Overall Satisfaction, Classroom Assessment, Attitudinal Assessment, and Student Learning means were all above the midpoint of the five-point Likert scale at moderately high levels. Overall, the mean was slightly less for Student Learning in relationship to Classroom Assessment, Attitudinal Assessment, and Overall Satisfaction across all scales. There were no significant differences based on gender, grade level taught, or number of years of teaching experience for any of the areas examined.

Responses to the open-ended question indicated that some respondents were working in unsatisfactory buildings or classrooms. However, the number of respondents was very small.

Additionally, a large percent of respondents reported that the conditions of their facility or classroom was not a factor in their decision to stay or to leave their school.

These results are not consistent with previous research findings. The researcher presents possible reasons for this discrepancy. The study concludes with recommendations for further study based upon the findings.

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Chapter I: Introduction

This study examined the relationship between school facilities in the United States and teacher attitudes about their facilities and their relationship to their satisfaction, student success, and their willingness to remain in their teaching position. The purpose of this chapter is to present an overview of this study. It begins with a brief introduction, which provides the background of the study. This introduction is followed by an overview of research related to the topic. The next section addresses the purpose of the study and the related research questions. The research questions are followed by a presentation of the research methods, the significance of the study, and assumptions and limitations. The chapter concludes with a list of definitions needed for clarity in understanding the research.

Background of the Study

The standard-bearer in student and teacher accountability, the No Child Left Behind Act (NCLB) of 2001 (2002), was broadly aimed at achieving student proficiency in reading and mathematics across all states and closing academic achievement gaps between identifiable subgroups of U.S. students. The policy was grounded in the theory that establishing measurable student performance standards with consequences for schools would foster the improvement of student achievement outcomes. NCLB relied on high stakes testing of students and included mandates that schools make adequate yearly progress toward the goal of 100% proficiency in these subjects by 2014 (Lee & Reaves, 2012). This emphasis on accountability measures has continued and led to the Recovery and Reinvestment Act (ARRA) of 2009 and Alabama's Plan 2020 (ALSDE, 2012).

Although the time for achieving the original goals of NCLB and ARRA has now passed, this law, state, and local policymakers, and many researchers still consider student achievement

scores as a standard to measure school and student success. Among others, Boyd, Grossman, Lankford, Loeb, and Wyckoff (2009) also suggest that student achievement gains are also a way to measure teacher effectiveness.

NCLB (2002) and the emphasis on student achievement, coupled with a growing acknowledgment of the important role teachers have in fostering student success, have led to a growing concern about the need for and supply of high-quality teachers in schools. Plecki, Elfers, and Knapp (2006) also noted that many schools across the country have had difficulty keeping highly effective teachers. There are many specific reasons that teachers state for leaving the profession, but most of them can be summed up in the category of job satisfaction (Buchanan et al., 2013). Tolliver (2018), using Maslow's (1968) hierarchy of needs theory as a framework, postulated that successful teachers are those who continue to seek means of becoming more successful. Finding and retaining successful teachers is a challenge in many locations. In a recent study, Guha, Hyler, and Hammond (2017) reported that recruitment and retention challenges have led to teacher shortages across the nation. They noted this shortage is especially prevalent in urban and rural school districts and that low salaries and poor working conditions often contribute to the difficulties of recruiting and keeping teachers in these areas. Another study, in South Carolina, determined that schools in rural communities are often perceived as being challenging, and consequently, this serves as a barrier for teacher recruitment and retention (Tran, Fox, & Smith, 2018). The issue is further highlighted in research conducted by The Center for Educator Recruitment, Retention, and Advancement which found that "finding new teachers can be difficult for many districts, particularly with the state's ongoing trend of more teachers leaving, more vacancies, to fill, and fewer [South Carolina] graduates eligible for teacher certification each year" (CERRA, 2018, p. 5).

Teacher shortages are also a problem in schools with high populations of poor and low performing students, no matter where the schools might be located. Some of the teachers in underachieving schools transfer to more affluent districts, and others leave the teaching field altogether (Nelson, 2006). Vagi, Pivovarova and Barnard (2017) indicated that teachers were more likely to leave schools situated in inner cities, extremely rural areas, secondary schools, and schools serving higher percentages of minorities along with students living in poverty. They also noted that teachers were most likely to leave the profession at the beginning of their careers, with the middle years of employment being fairly stable.

Ladd (2011), in an investigation of teacher retention, determined that several factors may lead to a teacher departing the field, particularly in underperforming schools. Among these issues are not having the training, knowledge, or skills to work with students from disadvantaged backgrounds and having inadequate administrative and other support to be successful. Boyd et al. (2009) validated the plight of finding and retaining quality teachers due to factors such as inadequate teacher labor markets, structure and inadequacy of pay, student demographics based on socio-economic status, difficulties with other teachers, unsupportive or poor school leadership, lack of community support, hiring practices, and facilities. Plecki et al. (2006) and Lankford, Loeb, and Wycoff (2002) discovered that schools had difficulty getting and keeping quality teachers due to partially to insufficient teacher induction programs. Webb (2014) found that many teachers who report having low morale indicate that compensation is not adequate for the time and effort expended as a teacher. Finally, Ohlson (2009) reported that one of the major factors in determining teacher morale is a lack of experience. Teachers with more experience are better equipped to handle issues that come up in the day-to-day operations of the classroom, such as student discipline and parent concerns than teachers in their first years of teaching.

Although there has been extensive research on school-based issues related to student success and hiring and keeping high-quality teachers to help foster that success, one area that may have a relationship to this success, which has not been extensively examined, is that of school facilities. However, there is a small but growing body of research on the importance of the condition of the school building and teacher satisfaction and retention and student success in the United States. The findings from this research indicate that the condition of a school facility may have important consequences for teachers and students. Although Chapter 2 presents an extensive overview of this topic, some of the primary issues are presented within this chapter to provide background information about it.

Teacher Satisfaction, Attitudes, Performance, and School Facilities

Earthman and Lemasters (2009) report that the physical environment of the school influences the attitudes of teachers, which, in turn, affects their productivity. The nature and quality of the learning environment had been shown to affect teacher satisfaction, attitudes, behaviors, and performance (Allensworth, Ponisciak, & Mazzeo, 2009; Lowe, 1990). Many factors contribute to the quality of the school building and thereby affect the quality of teacher life and educational outcomes for students. Bowers and Burkett (1988) examined this issue by looking at the health concerns that came about due to the time spent in inadequate facilities. In such facilities, both students and staff complained of breathing concerns. There were also high absence rates among both parties in these school settings, which can impact teacher and student performance.

In 1993, Cash conducted research using the Commonwealth Assessment of the Physical Environment in which the quality of the facility is determined through the use of funding used by construction and maintenance as well as the perceptions of the teachers, leadership, and

community members about the facility. Cash surveyed 162 teachers across 18 schools to examine what she labeled as “affection levels” of teachers related to the facility in which they were assigned to teach. Affection levels were based on how the teachers felt about the facility and the impact that they believed it had on student achievement, including an investigation of teachers' perceptions of the impact of differences in the size and shape of their classroom and the condition that the instructional facility had on student instruction.

Cash (1993) determined that higher achievement occurred with schools with air conditioning. She also determined that higher achievement was associated with schools that had less graffiti and good lockers, as well as science equipment and classroom furniture that was in good condition. Further, Cash found that building conditions were related to student behavior factors. Faculty responses to Cash’s survey indicated that faculty believed that the condition of the physical facility had a positive impact on students as it relates to behavior and student achievement. She also noted that there were fewer reported incidents of behavioral issues as well as higher performance levels on standardized tests.

Buchanan et al. (2013) indicated that though there are many reasons teachers leave the profession, most can be placed within the category of job satisfaction. Maslow’s (1968) hierarchy of needs theory states that professionally successful people would continue to seek out means of becoming more successful. Tolliver (2018) investigated teacher job satisfaction and teacher retention and concluded that teachers must reach higher levels of Maslow’s hierarchy to be fulfilled in their profession.

School Facilities and Student Achievement

In early studies of school facilities, Sommer and Olsen (1980) determined that students were more engaged when they were in “soft rooms” (p. 5). Soft rooms are classrooms in which

students are exposed to aesthetically pleasing lighting. Learning in such rooms is also linked to higher self-esteem and self-discipline for students. Soft rooms also make students more likely to feel at ease and can lead to higher levels of effort on their part.

Berner (1993) posited that student achievement was linked to the building in which education took place. To test this hypothesis, he collected data from a team of architects, engineers, and maintenance staff. The group assessed a set of school structures as poor, fair, or excellent. Berner found that the low facility assessments were related to the higher or lower achievement of students in the areas of Math and Reading.

In another study, Lumpkin, Godwin, Hope, and Lufti (2014) compared student test scores on the Florida Competency Achievement Test in Reading and Mathematics in grades four, eight, nine, and ten with their enrollment in an older or newer facility as determined by the State Uniform Building Code for Public Educational Facilities Construction in 2000 (Florida Department of Education, 2013). Using two groups from the old facility as the pilot, he found that students who moved to the new facility grew, on average, by seven percentage points in math and three points in reading. The evidence from this study suggests that the quality of the school environment is important to student academic achievement. Filardo, Vincent, Sung, and Stein (2006) agree with the impact of the quality of the school facilities on students. Filardo et al. found that

> The quality of a school facility has an impact on students' experiences and, ultimately, on their educational achievement. The research on school building conditions and student outcomes finds a consistent relationship between poor facilities and poor performance: when school facilities are clean, in good repair, and designed to support high academic

> standards, there will be higher student achievement, independent of student socioeconomic status. (p. 5)

Uline and Tschannen-Moran (2007) examined 80 urban, suburban, and rural middle school facilities in Virginia using the School Climate Index to determine the teacher satisfaction level with school facilities. The School Climate Index is a 28-item measure of school climate comprised of four subscales, Academic Press (six items), Community Engagement (seven items), Teacher Professionalism (eight items), and Collegial Leadership (seven items). Uline and Tschannen-Moran (2007) discovered that when learning occurs in inadequate facilities, there tends not to be a clear focus on academics, and the learning environment is less likely to be perceived as orderly and serious. They also report that when school buildings are shabby and inadequate, there is less likely to be the kind of community engagement that supports teaching and learning. Teacher attitudes and behaviors are related as well, as teachers are less likely to show enthusiasm for their jobs, and it is less probable that they will go the extra mile to support student learning when they teach in buildings that they judge to be of poor quality. They also concluded that students scored higher in reading and math in facilities that were rated higher by the teacher surveys.

Uline (2000) concluded that high-quality facilities were conducive to high-quality learning environments and that they were also essential to the education of the nation's children. She also suggested that school facilities needed the same level of debate as national testing. More recently, Powell (2019), Johnson, Kraft, and Papay (2012), Keiser (2012), and Lavalley (2018) all found that poorly maintained facilities and inadequate instructional materials lead teachers to become dissatisfied with their work environments and that this lead to teacher attrition. Similarly, Fajardo (2012) discovered that the condition of a school building influenced the work

and effectiveness of a teacher. Fajardo also found that although it was difficult to measure teacher effectiveness quantifiably, perception studies of teachers in good and poor school buildings provided a rich source of data relative to the effect of the physical environment has upon these professionals. Thus, it appears that the condition of the school facility has serious implications for the welfare and academic success of our nations' students.

Conditions of School Facilities in the United States

Because this study examines issues related to school facilities in the United States, it is important to present an overview of the general conditions of these facilities. In an Environmental Protection Agency (EPA) study conducted in 2000, researchers found that poor indoor air quality and indoor environment quality was widespread in the US schools and that many of these school buildings suffer from "sick building syndrome" (p. 1). Further, the report concluded that this syndrome was related to increased student absenteeism and reduced student performance. Mendell and Heath (2005) reported that among the human health concerns related to poor buildings were upper respiratory irritations, headaches, eye discomfort, labored breathing, and asthmatic episodes. They added that steps should be taken to improve air quality and healthy facilities by addressing ventilation, reduction of moisture, and documentation of consistent facility management actions.

Uline (2000) reported that the physical condition of schools in the United States is in worse shape than the country's highways, subways, and bridges. She found this particularly problematic because her research indicated that there was a significant disconnect in the ways that schools were taken care of by facility designers and the primary inhabitants, such as educators and students. Arsen and Davis (2006) reported that the last comprehensive national survey of the condition of K-12 educational facilities in the United States took place in 1995 by

the General Accounting Office. Since then, the research community has not agreed on the specific methods to evaluate the quality of educational facilities.

In 2010, the Healthy School Campaign sought to examine the condition of schools through the eyes of students. The organizers of this campaign concluded, "many of the nation's children – particularly those in high-poverty and predominately minority school districts – continued to attend school buildings that are unfit for teaching and learning" (Healthy School Campaign, 2010, p. 26). More recently, Filardo and Jeffery (2016) determined that there was limited national and state data related to facilities. Rivera and Lopez (2019) reported that the lack of national and state data and standards for educational facilities has resulted in school districts in many states constructing and maintaining school facilities with limited state investment or technical assistance.

The issues of the poor condition of schools in the United States and the distinct possibility that the condition of these facilities may influence teacher and student attitudes and satisfaction coupled with the emphasis upon assuring that all students succeed academically in our school, make it imperative that additional research is conducted.

Purpose of the Study

The purpose of this study was to examine teachers' level of satisfaction with their school facilities in high poverty rural schools in a southern state. Additionally, this study sought to determine the extent to which teacher satisfaction with their school facility and their attitude about the impact of the condition of the school and classroom facility upon their performance and that of their students. The study also examined these issues concerning teacher gender, years of experience, grade level, and willingness to remain in their school.

Research Questions

The following five research questions guided the study:

1. What is the level of teacher overall satisfaction with the school facility in selected high poverty rural school systems in a southern state, as measured by the My Classroom Appraisal Protocol?
2. A. What is the teachers' level of satisfaction with their classroom based on their classroom assessment as measured by the My Classroom Appraisal Protocol?

   B. To what extent is there a relationship between teacher satisfaction with the classroom assessment within the school as measured by My Classroom Appraisal Protocol, teacher demographics of gender, numbers of years of teaching experience, and grade level taught in selected high poverty rural school systems in a southern state, as measured by the My Classroom Appraisal Protocol?
3. A. What is the teachers' level of satisfaction with their classroom based on their Attitude Assessment, as measured by the My Classroom Appraisal Protocol?

   B. To what extent is there a relationship between teacher satisfaction with their attitude as measured by the My Classroom Appraisal Protocol and teacher demographics of gender, numbers of years of teaching experience, and grade level taught in selected high poverty rural school systems in a southern state, as measured by the My Classroom Appraisal Protocol?
4. A. What is the teachers' level of satisfaction with their classroom based on their assessment of student learning, as measured by the My Classroom Appraisal Protocol?

   B. To what extent is there a relationship between teacher satisfaction with their assessment of student learning as measured by the My Classroom Appraisal Protocol, and

teacher demographics of gender, numbers of years of teaching experience, and grade level taught in selected high poverty rural school systems in a southern state, as measured by the My Classroom Appraisal Protocol?

5. To what extent is the condition of the school building a factor in teachers' willingness to stay or leave – to remain as an employee of the school selected as a high poverty rural school system in a southern state?

Significance of the Study

Although there is some evidence that the condition of the school facilities may be related to teacher satisfaction, student performance, and willingness to remain in a school and that this factor may also be related to student satisfaction and performance, this topic s greatly under-researched in the United States. Although research indicates that there is a relationship between student achievement, student health, teacher health, teacher retention, teacher satisfaction, the quality of teacher instruction, and the quality of school facilities, the research on this topic is limited. Additionally, there has not been any research on this topic conducted in the southern state in which of this study occurred to determine or rate the quality of these facilities. This lack of research may also be true in other states since research has suggested that many of the school facilities in the country are under par. This finding indicates that there is not an interest or a focus on the physical condition of schools within the state of the study or the nation in general, although a large segment of our school population in the country attend schools in rural areas.

Additionally, there are approximately 7,810 rural schools, comprising about 57% of all school districts in the country (United States Department of Education [USDOE], 2015); yet, research on rural schools has been very limited (Bergeron, 2016). Hardre and Sullivan (2008) estimated that only about 6% of all educational research takes place in rural areas, and the

southern United States is home to approximately 23% of all rural school districts (USDOE, 2015). These southern rural school districts are responsible for educating nearly 33% of all of the regions' students (Johnson, Showalter, Klein, & Lester, 2014). At the time of this study, Johnson et al. (2014) found that 41% of the students in southern states were enrolled in rural schools. Many of these districts are comprised of students from high poverty backgrounds and have had difficulty in being academically successful. They go on to say that within these schools, teacher retention has been generally low, and student achievement has been problematic. Therefore, it may be of value to determine if the quality of school facilities has any relationship in this setting. The findings can aid in laying a foundation for future studies in similar settings.

Although most studies group rural schools into one classification, the National Center for Education Statistics (NCES) identifies three types of rural school settings: Fringe, Distance, and Remote. A *rural fringe* school setting is defined as a school that " was less than or equal to 5 miles from an urbanized area, as well as rural territory that is less than or equal to 2.5 miles from an urban cluster" (NCES, 2006, p. 1). A *rural distant* setting is one on which a school is "more than 5 miles but less than 25 miles from an urbanized area, as well as rural territory that is more than 2.5 miles but less than or equal to 10 miles from an urban cluster" (NCES, 2006, p. 1). Finally, a *rural remote* setting is defined as a school "more than 25 miles from an urbanized area and is also more than 10 miles from an urban cluster" (NCES, 2006, p. 1). Although the researcher did not examine data by rural school type, all three types were included in the study sample. Findings from this study add to the research on this neglected area because it took place within rural schools. Findings may also extend the conversations on this important, yet somewhat neglected topic and will stimulate further discussion and research within the state and nation.

Methodology

This quantitative study involved collecting data using the My Classroom Appraisal Protocol (MCAP) survey. Earthman and Lemasters (2009) state that this tool is used to gather impressions and attitudes of teachers related to the condition of their school or classroom. The survey instrument was slightly modified for this study. The modifications included six additional survey questions related to teacher demographic information and willingness to stay in a school system as well as an open-ended question addressing any additional respondent insights about their facility. The researcher distributed the MCAP via email once the Institutional Review Board and school official approval had been granted. Teachers in the selected schools were asked to complete the instrument and submit it electronically voluntarily. Participants were teachers at schools within predetermined rural school systems in the central part of the southern state in the Southeastern Region of the United States.

Population

There are approximately 130,946 children ages 0-5 living in rural areas within the state of Alabama. These children comprise 49.3% of all children within the state (Strange, Johnson, Showalter, & Klein, 2012). Slightly more than 23% of these children live within families below the poverty line, and 55% live a household headed by a single female (Strange et al., 2012).

> Rural median household income represents the median income level for households in rural areas, as measured by the U.S. Census Bureau. Importantly, this indicator is not just a measure of poverty; it also presents a relative assessment of the level of economic distress and economic well-being among rural residents. (Strange et al., 2012, p. 15)

Though the NCES (2006) identifies three types of rural school systems, many researchers (see Rosenberg, Christianson, Angus, & Rosenthal, 2014; Stoltenberg, 2019; Strange, 2011b;

Strange et al., 2012) consider *rural* as a single designation. The NCES designations include rural fringe, rural distant, or rural remote based upon "… the 12-item urban-centric NCES locale code system released in 2006. Rural schools and districts used in the report are those designated with locale codes 41 (rural fringe), 42 (rural distant), or 43 (rural remote)" (Johnson et al., 2012, p.1). All types of school districts were included in this study.

Assumptions of the Study

The assumptions of this study included:

1. Teachers will provide accurate assessments of their perceptions and levels of satisfaction with their facility when completing the provided survey.
2. School system officials who authorized teachers to respond will not foster bias or take action against staff members who participate or choose not to participate in the provided survey.

Limitations

The limitations of this study included:

1. The population of the study was limited to the number of individuals who were allowed to participate in the study by their respective principals and superintendents.
2. The study was conducted in only one state and only in rural districts, so the findings may not be generalizable beyond that population.
3. The researcher has been employed by one or more rural school districts in the state in which the study took place.

Definitions

This study utilized abbreviations and terminology common to the field of education but not necessarily familiar to those outside of the field. Abbreviations and definitions of these terms include:

- Facilities – structures where teaching and learning occurred for students enrolled in grades kindergarten through 12th grade.
- Student achievement – the growth that a student has in comparison to their peers in a given school year.
- Rural fringe – census-defined rural territory that is less than or equal to 5 miles from an urbanized area, as well as rural territory that is less than or equal to 2.5 miles from an urban cluster.
- Rural distant – census-defined rural territory that is more than 5 miles by less than or equal to 25 miles from an urbanized area, as well as rural territory that is more than 2.5 miles but less than or equal to 10 miles from an urban cluster.
- Rural remote – census-defined rural territory that is more than 25 miles from an urbanized area and is also more than 10 miles from an urban cluster.
- High-poverty, high-performing schools – schools that had high concentrations of low-income students who beat the odds and contradict the generalization that schools with high concentrations of low-income students generally have lower achievement scores. In the state in which the study took place, the high-poverty, high-performing schools had at least an 80% poverty rate determined by the percent of free/reduced meals. In achievement, the schools had at least 80% of students score Level III or Level IV on the reading and math sections of the State's Reading and Mathematics Test and have at least

65% of students scoring in stanines 5–9 on Stanford 10 reading and Stanford 10 mathematics.

- High-poverty, low-performing schools – Title I schools that had high concentrations of low-income students and were identified by a formula that factored in standardized reading and math test scores resulting in their not making adequate yearly progress.
- Poverty – a lack of adequate income combined with other deprivations that allow human capabilities to go unrealized.
- Classroom assessment – the ability to measure satisfaction level within the classroom as related to the condition.
- Attitudinal assessment – the ability to measure satisfaction level based on a teacher's attitude as it related to classroom condition.
- Student learning – the ability to measure satisfaction level based on student learning as it related to classroom conditions.
- Socio-economic status – (SES) economic status that takes into account a family's education, total income, and the jobs and careers within the home. (APA, 2020).

Conclusion and Organization of the Study

Chapter I introduced the study, provided background information, a problem statement, a brief purpose, research questions, methodology, and the significance of the study. Chapter I also provided study limitations and assumptions as well as abbreviations and definitions used throughout the study. Chapter II provides a detailed review of the literature that assists with understanding the need for the study. Chapter III describes the research design, methodology, data collection, analysis procedures, as well as the context of the study. Chapter IV reports the

findings of the study, and Chapter V provides a discussion of the findings and implications of the study and ideas for further research.

Chapter II: Literature Review

This chapter presents an overview of the literature related to the study. The chapter begins with background information about the achievement gap in public education and the factors that foster high-quality education and student success. This background is followed by research on characteristics of rural communities, schools, and schooling with and issues related to funding, power, and the status of rural school settings. This section also reports on student performance in high poverty rural schools in general and on the status of rural schools in the state in which the study was conducted.

This introductory focus is followed by an overview of the focus of this study – school facilities and teacher satisfaction. It includes attributes of school facilities in the United States as they relate to building conditions, health and safety, and design. The chapter then deals with the relationship between school facilities and student achievement and behavior and parent attitudes. The last section deals with the relationship of school facilities to the performance, satisfaction, and retention of teachers, teacher productivity and performance and teacher perceptions, satisfaction.

The Achievement Gap

Over the last two decades, there has been a growing awareness and concern regarding the achievement gap between poor and minority students and their middle-class counterparts in the United States relative to performance on standardized tests and rates of high school graduation. Many researchers (Carnervale, 1999; Cohen, Garcia, Purdie-Vaughns, Apfel, & Brzustoski 2009; Jencks & Phillips, 1998; Lee 2002; Murnane & Levy, 1996; Ogbu, 1994, 2008) have viewed the achievement gap between these students as a key limiting factor in the education, employment, income and standard of living of poor and minority students. At the same time, these gaps could

be attributed to a myriad of factors. Some of the primary causes that have been highlighted over the years are socioeconomic and family conditions (Berliner, 2009), income (Goddard, Tschannen-Moran, & Hoy, 2001), culture (Dudenhefer, 1993), behavior and motivation (Lackney, 1999; Lackney & Jacobs, 2004) curriculum and instructional strategies (Lee, 2002), retention of staff (Strange, 2011a; Stronge, Ward & Grant, 2012), and recruitment (Harmon, 2001).

Examining this issue of low student achievement, Goddard et al. 2001 noted that large schools with a majority of students from low SES homes and with a high minority population tend to have had a much higher disposition to have a culture lacking in trust, which is related to low student achievement. Another cause for the achievement discrepancy may be the curriculum and instruction offered. Darden and Cavendish (2011) and Wiener (2007) found that students who were in poverty were normally placed on a vocational track versus a college and career-ready track. Wiener reported that "…only 64% of students from low socioeconomic status families attend schools where trigonometry is offered, and only 44% attend schools where calculus is an option" (p. 1330).

Uline (2000) explored the relationship between poverty and student achievement in the Hartford Public School District of Connecticut. Although it is the capital of the state, it was the poorest city in the state as well. The income disparity was compounded even more when looking at the difference between the incomes of individuals in other cities in Connecticut of the 25,500 students served in this district, two-thirds live in poverty, and one third are bilingual or special education students. Uline discovered that these students were at the highest level of students below remedial standards. Only 7 % mastered Reading standards, 11 % mastered Mathematics standards, and 13% achieved mastery of Writing standards. Additionally, more students from the

Hartford district failed to graduate in comparison to the number in other Connecticut school districts.

In recent research, Bergeron (2016) stated,

> Rural schools also tend to be hampered by a resource poor environment and a weak tax-base that make it difficult for them to compete with the wealthier urban/suburban schools in compensation for teachers, administrators, and staff, which, in turn, results in a high turnover rate. This high turnover rate means that these rural schools have, in general, less experienced teachers/administrators educating students. Rural schools also tend to have high levels of persistent, intergenerational poverty. (p. 195)

Bergeron also stated that an essential aspect of increasing teacher retention rates and student achievement is teacher efficacy.

Stronge et al. (2012) report that schools that serve high-poverty minority students tend to be staffed with young, inexperienced teachers. This reality is an outgrowth of the fact that recruiting and retaining high-quality teachers is a significant issue for rural schools (Harmon, 2001; Strange et al., 2012). High teacher retention rates are important to enable change efforts to take effect and have an impact on student learning and student achievement (Bottoms, Presson, & Han, 2004). Research indicates that high-quality teachers have a significant impact on the success of rural schools and rural student achievement (Mid-Continent Research for Education and Learning, 2005). Bergeron (2016) reports that increased teacher retention rates in these rural settings are to deal with the school culture and enhance teacher efficacy within it. Gibbs (2000) and Rosenberg et al. (2014) identified reasons teachers leave positions in rural schools as the commuting distance; lack of job opportunities for their spouses; low pay; social and geographical isolation and a lack of adequate housing.

Characteristics of Rural Communities, Schools, and Schooling

Over 12 million students attended a school classified as "rural" by the NCES in 2011. A national statistical profile of the students in these rural districts placed them close to the national average on many variables. However, the variation from state to state and place to place is so large that averages simply mask extremes in many rural settings Strange (2011b) writes

> Rural communities are places that, for generations, have educated their children and often, because of the limitations of the local economy, have sent them off to earn their living and pay their taxes elsewhere. These communities and the schools that serve them are more complex than those who succumb to rural stereotypes want to acknowledge, let alone understand. However, with one-third of U.S. public school students in rural or small-town schools, some of them in the poorest communities in the nation, the needs of these schools can be ignored only by dropping the pretext that the education of every child matters.
>
> Nationally, the poverty rate (as measured by eligibility for Title I funding) for all rural and small-town districts is 18.5%, slightly higher than the national average for all districts. However, in the 10% of rural and small-town districts with the highest rates of disadvantaged students, over 37% of the students live in poverty (about the same rate as the Bronx). Moreover, 59% of the 1.3 million students in those high-poverty rural districts are children of color — 28% black, 23% Hispanic, and 8% Native American. (p. 8-9)

Community and student factors in rural settings. In recent research, Bergeron (2016) stated,

> Rural schools tend to be hampered by a resource poor environment and a weak tax-base that make it difficult for them to compete with the wealthier urban/suburban schools in compensation for teachers, administrators, and staff which, in turn, results in a high turnover rate. This high turnover rate means that these rural schools have, in general, less experienced teachers/administrators educating students. (p. 195)

Rural schools also tend to have high levels of persistent, intergenerational poverty. Additionally, Cleveland et al. (2011) note the significance of community values on the attainment of education. Additionally, they found that rural areas did not produce as many students who actively seek to acquire more education as do other types of communities. Moreover, if these students do obtain an education, they are likely to depart the rural setting after leaving high school, which may exasperate the poverty levels of those who remain.

In comparison to urban and suburban systems, rural schools, on average, have higher levels of students living in poverty (Bottoms et al., 2004). This poverty in rural areas of the United States has been persistent and intergenerational (Irvin, Byun, Meece, Farmer, & Hutchins, 2012; Johnson et al., 2014). Additionally, this problem seems to be increasing. Rural schools are becoming much more diverse with more students living in poverty, as defined as receiving free or reduced-price lunch, and higher levels of minority students (Harmon, 2001; Howley, Theobald, & Howley, 2005; Masumoto & Brown-Welty, 2009; Starr & White, 2008). Rural areas in the United States have become places with higher levels of poverty, limited opportunities, and have provided limited or no benefit for individuals obtaining an education or vocational training (Harmon, 2001).

Adequate resources are crucial in providing services to educate students in all settings. However, the need for resources may be particularly critical in rural settings, including resources

over and beyond what a typical (i.e., middle class or higher) entering student, because many of these students come from low-income families (Slavin, 1998). However, these schools tend to have fewer resources than their more affluent suburban and sometimes urban counterparts, Strange (2011b) notes,

> Rural students are more expensive to educate. Even when adjusted to take into account cost differences in geographic areas, the public-school expenditures per student were higher in rural areas ($8,400) than in cities ($8,100) and suburbs ($7,900), though they were same as for towns ($8,400). (p. 12).

As a barometer for spending, rural districts tend to spend about the same percentage of their budgets on administration and instruction as non-rural districts, but they must spend significantly more on transportation, due to transporting students across broader areas. However, despite the needs of their students and the community and schools within them, rural schools tend to receive inadequate funding through state resources for a variety of reasons, as reported in the next section.

Funding and power in rural school settings. One of the primary reasons for inadequate funding of schools in rural settings is due to the formula used in-state school funding systems. Discussing this, Strange (2011b) states:

> Most damaging (to rural school systems) are school funding systems that rely too heavily on local property taxes. The local property tax is the bane of most rural schools, especially those in low-wealth regions. Because high- wealth districts have unfettered access to a strong property tax base, they can easily outbid low-wealth rural districts (and urban) in the very competitive market for teachers and other needed resources (p. 14).

Darden and Cavendish (2011) confirm that schools that have a higher level of poverty are

marginalized concerning getting additional funds from the general budget. Similarly, Strange (2011b) wrote,

> money moves from smaller districts — no matter how high their student poverty rate — to larger districts — no matter how low their student poverty rate. Chicago, Detroit, Los Angeles, New York, and Philadelphia are among the beneficiaries of number weighting, but so are large, low-poverty suburban districts like Fairfax County, Va. (suburban Washington), Gwinnett County, Ga. (suburban Atlanta), and Baltimore County, Md. (suburban Baltimore). High-poverty rural and small-town districts and even high-poverty small-city districts, like those in Rochester, N.Y.; Laredo, Texas; Flint, Mich.; and Reading, Pa., are all damaged. (p. 14-15)

Due to the funding problems rural schools have faced, DeLuca, Takano, Hinshaw, and Raisch (2009) stress the importance of motivating legislators to get a better understanding of financial policies that have affected the rural school systems within their districts and states. The logic is that if they gain such understandings, it may be beneficial in the future when policy dilemmas come up about the needs of students in academic settings in rural areas.

An issue closely tied to funding, which is as problematic for rural schools, is school consolidation due to low student enrollment or inadequate funding (Strange, 2011b). Strange also reported,

> In recent years on the national level, four factors have triggered the call for mandated rural school or district closings: (a) declining enrollment leading to increasing per-pupil cost in rural schools, (b) fiscal distress and budget cuts in state government (c) disparities in the economic fortunes of the rural versus the urban areas of the state (d) Court decisions like those in the Lake View case, forcing an overhaul of school funding

systems (p. 11).

A confounding factor in funding rural schools and its mandating consolidation is that it costs more to fund students in rural schools than in larger urban and suburban settings. Even when adjusted to take into account cost differences in geographic areas, the public-school expenditures per student were higher in rural areas ($8,400) than in cities ($8,100) and suburbs ($7,900), though they were same as for towns ($8,400). As a barometer for spending, rural districts tend to spend about the same percentage of their budgets on administration and instruction as non-rural districts, but they spend significantly more on transportation due to transporting students across broader areas.

Where rural people are a relatively large proportion of a state's population (i.e., Alabama, Arkansas, Maine, Mississippi, Oklahoma, South Carolina, South Dakota, and Vermont), one might think they have some political power According to (Strange 2011b). When there is limited funding available for schools, you have an increase in dispersion and poverty. In many of these states, rural people have been disproportionately poor and often divided along racial lines before and after the closing/consolidation of schools or school systems. This is evident in states such as Michigan, where the closing of schools has created a racial divide and left some parents feeling as if "…students of color aren't getting an equitable education" (Van Buren, 2017, p.1).

Similar issues exist in Arkansas, where the state legislature mandated that schools with less than 350 students would be closed or consolidated. Fifty-seven school districts were affected. In the aforementioned court case, the small school system fought against the policy provided by the legislature as it related to funding. It was found that the system was not being adequately funded as well as there were not appropriate compensation plans for assigned staff. For example, in one particular case, there was a Math teacher with inadequate supplies who was

being paid $10,000 as a substitute and $5000 as a bus driver. The school system prevailed in their initial case, but future legislation was written, which caused the school to be consolidated with other systems that had less than 350 students. Where there was an initial good faith effort to consolidate based on a shared plan, larger districts did not want to incur the cost of leveling salaries and applied for an exemption. The districts who did not consolidate were penalized and lost half of their administrative funding as well as funding for facilities, maintenance special education, and transportation (Strange, 2011b). As a result of these inequities, court decisions such as the 2002 Lake View vs. Huckabee case, forced overhauls of school funding systems.

Although some states have mandated consolidation and the closing of schools, the more conventional strategy to close rural schools was not through state mandates, but fiscal "strangling" because there simply are not funds to keep going. Over time, a small rural district that is inadequately funded would defer building maintenance to pay teachers, and it would ultimately face a major capital expenditure that requires bonding and forced the local voters to decide whether to keep the school open (Strange, 2011b). Often, the burden on the community is too great, and consolidation follows.

For example, like many other states with rural school systems, the state of Michigan has felt the effects of rural school closings. Between the 2009 and 2015 school years, the Albion Public Schools population declined from 1,086 students in 2009 to 454 students in 2015 (Van Buren, 2017). In 2015, the people from the town of Albion and the Albion School Board voted to close the school system and annex the remaining students to Marshall Public Schools effective July 1, 2016. Since the district was small and the funding was not sufficient, many of the facility needs were not taken care of. The parents who were able to transport their children to one of the nearby more affluent school systems, such as Battle Creek, took their students to the other school

under the auspice of school choice. The majority of these parents were White since the majority of the Black parents of students in that school were not able to transport their children. This left the parents of the less prosperous children left, hoping that their children, who were educated in subpar buildings, were provided an adequate education (Brown, 2019). Since the Albion Public School closing, other rural school systems have been forced to close or consolidate with neighboring school systems. For example, as of May 2019, the Governor of Michigan has proposed a plan to close Benton Harbor High School and the alternative high school due to financial restraints and low-test scores. The plan would be to focus on funding for K-8 education in Benton Harbor, Michigan (Nolan, 2019). The lack of political power, limited resources, and additional expenses appear to have some significant impact upon rural schools, particularly those with high percentages of students from low poverty homes. These outcomes are discussed in the section that follows.

Student performance in high poverty rural schools. Johnson, Strange, and Madden (2010) have addressed a concern about student dropout rates in urban areas. They deducted that many of the problems that are highlighted in urban areas also play out in rural settings such as high poverty and limited resources. After examining 616 high-poverty rural school districts in 15 Southern states that are among the 800 rural districts with highest student poverty rates nationally, they identified these states as having "among the nation's highest absolute and proportional enrollments of economically disadvantaged students" (p. 4). Moreover, Johnson et al. (2010) also listed the total number of Title I eligible children, highest to lowest: "Texas, Kentucky, North Carolina, Mississippi, Louisiana, Arizona, Georgia, New Mexico, Missouri, Alabama, Arkansas, California, South Carolina, West Virginia, and Oklahoma" (p. 4).

Another area of concern presented by Johnson et al. (2010) is that "among these rural

districts in the 15 target states, the Title I eligibility rate is more than double that of other rural districts and that of all other districts" (p. 3). In the aforementioned states, the more than 800 rural districts had students who were twice as likely to be English Language Learners. Those rural districts were also more likely to serve children of color and children with special needs than their non-rural counterparts. Even among those high-poverty districts, those with the lowest graduation rates were more likely to serve children of color. Nearly half (47%) of the students in the lowest graduation-rate quartile were African American (Johnson et al., 2010)

Some schools in this group seemed to be more successful than others. The researchers noted that "twenty districts that met our criteria for 'high performing' districts on combined measures of academic achievement serve only 17% children of color compared with 59% for all 616 districts" (Johnson et al., 2010, p. 14). Looking at the differences in achievement in these schools, Johnson and his colleagues (2010) identified 20 rural school districts within 15 targeted states with graduation rates in the top 20%, 2007-08 reading proficiency rates in the top 20%, and 2007-08 math proficiency rates in the top 20%.

It was determined the only statistically significant difference between the 20 highest performing Rural 800 districts and all other Rural 800 districts in the same states was that higher performance is associated with smaller district size (Johnson et al., 2010). Eighty-three percent of the students in these high-performing, high-poverty districts are white, and less than one percent are English language learners. These statistics support a recognized concern related to achievement gaps separates the performance of students of color and white students.

In their national study, Farmer et al. (2006), found that in over 40% of the rural schools serving poor or minority youth, a disproportionate percentage of African-American students did not pass the end-of-year exams and were in danger of dropping out. These schools were

concentrated in the South and Southwest and included the schools in the state of this study. This study's state schools were "among the 13 states where rural education is most important to the overall educational performance of the state" (Johnson & Strange, 2007, p. i). Examining the research on student performance in rural schools, Williams and King (2002) identified six critical challenges facing rural schools which included: a shortage of highly qualified teachers and administrators, a lack of community and parental involvement, quality and focused professional development, low expectations, resistance to change and a failure to prepare students for the twenty-first century.

Student achievement is further affected in rural communities due to the movement of young and better-educated students who have aspirations outside of where they originally lived. With the exodus of the young and educated, the rural areas suffer from a reduction of educated people as well as losing the skills of those who leave the areas (Cleveland et al., 2011).

Rural in Alabama. Since this study is being conducted in the state of Alabama, it is important to examine the issue of rural schooling in that state. Based on the 2011-2012 NCES study, Alabama was the second-highest priority state in the nation (Johnson et al., 2014). Priority is established based on socioeconomic status, the number of rural students, family income, achievement level on NAEP in grades four and eight, and population of adults with a High School diploma.

Alabama's deficiencies were compounded by economic stress, distress, and the high percentage of rural adults not having a high school diploma in the state. Moreover,

> in Alabama, minority students in rural schools are predominantly African American. Rural schools and districts are among the nation's largest, and instructional spending and instructional salaries are lower than in most other states. Rural NAEP performance

> is the lowest among the states in fourth-grade math and second lowest in eighth-grade math (p. 42).

According to Lindahl (2011),

> Alabama's rural districts derive significantly higher portions of their budget from state-provided revenues in comparison to towns suburban or cities. The 90 identified rural schools educate students who are primally recipients of free or reduced lunch 78 schools have populations of 90% or greater who receive free or reduced lunch. It also should be noted that Alabama ranks 5th in the nation in the highest poverty levels, with over 20% of Alabama rural families living in poverty. (p. 4)

According to Johnson and Strange (2007), rural education is an important part of the overall educational performance of the state. Unfortunately, it is also one of the four least productive related to rural education achievement. This finding has led to significant concerns within Alabama about the quality of rural education. Another concern presented by Arnold (2004), was related to little research has been done on rural education issues over the past 20 years.

Fostering Student Success in Schools

The previous literature has examined the status of rural schooling in the U.S and some of the factors that hinder student success with them. This section of the literature review examines the qualities and factors needed to foster student success in schools, no matter what physical setting they may be in. Fajarado (2012), building on information gathered from Sifuna (2009) identified and ranked the key criteria for quality education as: "(1) libraries; (2) instructional time; (3) homework; (4) textbooks; (5) teacher subject knowledge; (6) teacher experience; (7) laboratories; (8) teacher salaries; and (9) class size" (p. 58).

Goddard, Salloum, and Berebitsky (2009) found that trusting relationships are needed for effective schools and can positively influence student achievement within them (Goddard et al., 2009). Bryk and Schneider (2003) viewed educational strategies to enhance and improve student achievement in schools as either structural or instructional. From the standpoint of the structural approach, they suggested that innovation occurred with changes in policies, procedures, allocation of time, resources, and reduction of class sizes. On the other hand, the instructional approach focuses on the need for better teachers using better or more varied instructional strategies in the classroom.

Cleveland et al. (2011) found that an academically effective school is built on positive cultures and effective structures and processes. Cleveland, Powell, Saddler, and Tyler (2008) emphasize that each school has its own culture. They also emphasize that school culture is a critical component in the establishment of highly functioning school learning environments. Furthermore, Cleveland et al. (2011) discovered that school culture is extremely powerful, and the culture of the schools cannot be ignored if schools want to improve the academic success of the school. Cleveland et al. (2008) viewed a welcoming school climate as paramount to the success of the immersion of the culture for the growth of the community. They found that schools that were inviting, friendly, and open to suggestions were much more likely to be successful. Cleveland et al. (2011) wrote that "three of the top five factors influencing school success relating to culture: (1) parental and community involvement, (2) safe and orderly environment, and (3) collegiality and professionalism" (p. 1).

Concerning teacher quality, Amrein-Beardsley (2007) proposed that teacher quality was the largest factor in the success or failure of students in disadvantaged schools. She defined disadvantaged as being high poverty and underachieving with respect to comparison to schools

of similar size. Goldhaber and Brewer (1997), Phillips (2010) and Stronge et al. (2011) all report that teachers are second only to the family circumstances in terms of study learning and success. Despite the importance of high-quality teachers to successful school learning Amrein-Beardsley (2007) reported only about 15 percent of expert teachers to teach in high-poverty, underachieving schools" (p. 65). This percentage of expert teachers is not enough to make the widespread educational changes that have been needed for students to become successful and competitive with their peers.

In light of the importance of the high-quality teacher to student learning, Ball and Cohen (1999) and Klein and Riordan (2009) emphasize that quality professional development must be provided to teachers. Further, they emphasize that to be effective, educational activities must be differentiated to the needs, circumstances, and experience levels of the participants. Chance and Sequra (2009) and Lambertson (2014) recommend the use of professional learning communities as an effective method of providing professional development since these communities allow teachers to collaborate and learn to become more effective teachers in a collaborative learning environment.

The research indicates that school leadership accounts for about twenty-five percent of the school's impact on student learning and achievement (Leithwood & Jantzi, 2006) and is second only to the teachers' impact on student learning and achievement. In recent years, considerable attention has been focused on teacher assignment and mobility in urban high-poverty schools, especially in districts in which teachers work under a collectively bargained agreement. This portion of the teaching population amounts to 5.1 percent of teachers in the United States, or about 150,000 teachers when high poverty is defined as 75 percent of students eligible for free or reduced-price lunch. Research indicates that the "most experienced (and

highest-paid) teachers [were] generally assigned to schools with the fewest teaching challenges, while the "greenest" teachers (and lowest-paid) [were] generally assigned to struggling schools" (Nelson, 2006, p. 7). Generally, suburban school systems have dramatically lower percentages of unqualified teachers than poor urban districts. Thus, solutions to the urban teacher quality problem must address the limited supply of qualified teachers prepared and willing to teach in urban schools (Boyd et al., 2009). This lack of high-quality teachers also creates difficulty for many rural schools such as those examined in this study.

Stoll (2009) stresses that just as students have different learning styles, needs, and ways of functioning, so does each school and each school system. Along the same vein of thinking, Argyris and Schon (1996), Collinson and Cook (2007), and Finnigan and Daly (2012) championed the need for developing the institutional capacity to learn and stress that it is critical to improving student and staff learning and achievement. Having such capacity improving the organization's ability to meet its goals, objectives, and realize their vision. They inferred that learning organizations needed to understand that learning was not only what the students should be doing, but also that the staff and faculty should constantly strive to improve their learning and knowledge base.

Definition, Attributes, and Conditions of School Facilities in the United States

There are many factors related to fostering and hindering student success in schools. In general, and in rural settings in particular. One area that has not been greatly examined, but that may have a relationship to student and teacher attitudes, perceptions, actions, and student achievement, and the focus of this study, is the condition of the school facility in which education occurs.

A comprehensive definition of school facilities takes into account, not just the physical building or buildings in which schooling occurs, but also includes everything that operates under the umbrella of the building's ability to function. Berlyne (1960) and Uline (2000) suggest that although what is taught in the curriculum is very important, the physical location of learning is also a part of the learning experience. Oakes (2002) stressed that assuring the adequacy of the physical environment in which schooling occurs.at is a vital link to equity for all children, proposed by the Elementary and Secondary Education Act of 1965 and renewed by the No Child Left Behind Act of 2001 (2002). He viewed an adequate building as a resource for ensuring optimal student achievement, particularly in high-poverty and low-achieving school systems. In looking at the quality of education in communities,

Filardo et al. (2006) suggest that it is essential for communities to invest in their public-school buildings. Demonstrating her desire to champion efforts for quality school facilities, Uline (2000) argues for "decent facilities" since they are conducive to high-quality learning environments. Uline believes it is essential to address the environments of schools along with discussions about national testing and standards, decentralized administration, vouchers, alternative assessment techniques, and private investment in public education. Uline also suggests that educators should be included in finding effective ways to support building quality facilities, and they also should be involved in the building design.

She acknowledges that although there was a level of experience in the technical aspects of building a facility such as funding, debt management and supervision of construction, there was a disconnect in the way that educators desire educational facilities and the how the facilities were built their involvement could help create better facilities. Educators who have a vested voice in the design of a facility could lead to more effectively designed facilities. It was noted

that educators were not architecture or structural experts, but they are the individuals who use the building and should have a level of input on the design of their workplace

Uline and Tschannen-Moran (2007) support the Council of Educational Facilities Planners International and the American Institute of Architects in discussions about the school space occupied and the value of learning that takes place there. In 2009, the American Institute of Architects advocated for the notion that a school building is not just a building made for housing students for education. The true value of the school building is in the message that it sends to the occupants of the community as a whole. The building is a fixture of the community that needs support in order to promote an engaged community.

Building conditions, health, and safety. Darden and Cavendish (2011) state that students learning in subpar facilities is an extreme problem in poor communities. When considering the physical elements that should comprise a school facility, Uline and Tschannen-Moran (2007) identified a decent facility as one that includes aesthetic qualities such as light, sound, and color. Lemasters (1997) notes that the quality of a facility is affected by the appropriated amount for its construction and maintenance, the school leadership, the school's staff, and other external factors. The resources available to maintain facilities and the selection of school personnel in leadership positions can also affect building conditions.

In looking at the age and condition of school buildings, Earthman and Lemasters (2011) concluded that the condition is partially the result of the kind of building material used in the construction of the structure, as well as the age of the facility. School leaders make decisions regarding the number of funds that are used in the construction of the school building. In turn, some of these decisions can result in less-than-first-quality materials being used in building construction. Sometimes this occurs because the community or local school board is interested in

keeping initial construction costs down. Earthman and Lemasters (2011) also state that "inferior building materials did not hold up as well as higher quality material and as a result, school buildings deteriorated at a faster rate" (p. 19).

Uline (2000) reports that there would need to be over a $10 billion-dollar requirement to get all school buildings in the United States up to code. One of the reasons for this is that, particularly in recent years, with the enormous costs for facilities upgrades due to technology and the rising cost of all the other needs of a school system, the facilities normally fall at the bottom of the totem pole when it comes to how to use funds. Too often, school systems wait to fix dilapidated structures until they became a health and safety hazard, or such improvements are mandated by others or by law.

Indoor ventilation problems began attracting attention during the energy crisis of the 1970s when buildings were sealed more tightly to reduce air leakage and minimize costs required to heat or cool air drawn in from outside (Lyons, 2001). In terms of needs, the air quality of the schools, the EPA concluded a study of human exposure to air pollutants (EPA, 2000). Their findings indicated that indoor levels of pollutants maybe two to five times higher than outdoor levels and sometimes even 100 times higher (Lyons, 2001). A good ventilation system is an effective means of keeping both toxic and nuisance materials out of the air. Furthermore, on any given school day, a significant percentage of students are absent from school for extended periods. The EPA (2000) has reported that asthma was the leading cause of school absenteeism due to a chronic illness, accounting for over 10 million missed school days per year.

Additionally, The American Lung Association has reported that asthma was the leading cause of school absences (Berliner, 2009). In was also noted recently that healthy school environments could affect the attendance, concentration, and performance of both students and

educators (EPA, 2020).

Uline (2000) wrote of the need for adhering to building codes and safety guidelines that ensure the safety of the inhabitants of a building at a given time. She determined that many of the building codes were not being followed in school construction or operations. She emphasizes that these codes should be enforced, just as other laws are enforced for the health and safety of the students and all those working in the facility.

Lyons (2001) added to the body of research on the adequacy of school buildings, in reference to personal health and safety. He stated that schools have four times as many occupants per square foot as offices, and they contained a host of pollution sources, including lab chemicals, cleaning supplies, chalk dust, and mold. Uline and Tschannen-Moran (2007) cautioned educators not to look for "quick fixes" when making building repairs and improvements to avoid an inconvenience for the short term, which may limit long term effects. They stressed the need to repair and improve facilities effectively and comprehensively even if it means closing down the building and emphasized that keeping a building open that has numerous risks for students and teachers was reprehensible.

In looking at financing facilities, Darden and Cavendish (2011) provided evidence about the future funding of education endorsing the actions of the United States Congress and the President of the United States to pass and sign American Recovery and Reinvestment Act (2009). This decision allocated $100 Billion in education to build new facilities, upgrade technology needs, and support for states who were struggling to meet their annual budget without significant cuts.

Darden and Cavendish (2011) also stressed that community members needed to have a say in the way that some of the funds were disbursed in relation to the schools within their

communities. Their basis for this argument was to support those who had been disenfranchised in the past as well as those who were in poverty or did not have any political clout.

Design of facility. Alexander Ishikawa, and Silverstein (1977) state that an opening view of designing a quality facility

> …. Architects should avoid the use of corridors and passages. Instead, they may use public rooms and common spaces for movement and for gathering. The common rooms form a chain or loop, making it possible to walk from room to room, with private rooms open directly off these public rooms. In every case, the indoor circulation from room to a room gives a feeling of great generosity, passing in a wide and ample loop around the house (school), with views of fireplaces and great windows. (p. 588)

Uline and Tschannen-Moran (2007) compared the cognitive and affective dimensions of facility management as compared with the measurement of intelligence and achievement and personality traits for students. She further noted that there were requirements that vary from state to state due to legislation as well as changes in materials and the cost associated with them to build a quality facility. She believed that facilities need to contain the elements of the past, make safe the present, and be flexible enough to accommodate the future. She saw these three goals as paramount to the design of the building. Uline and Tschannen-Moran (2007) saw the items of warmth, sanitation, and potable water as necessary items for the comfort of the students and staff that could not be pushed aside.

The place of these needs in the management rank of facilities was not engrained in the aesthetic realm. The reason for this was because of their direct impact on the health of the building occupants. Therefore, they were considered to be immediate health concerns and were immediately addressed when there were any problems in these areas.

The presence of the aforementioned in the negations of the completion of a facility was rarely discussed and had even less of a chance of being implemented. Moreover, Uline (2000) believed that those who worked and learned in the spaces should be a part of the planning process. With the inclusion of stakeholders within the building and in the community, there were more opportunities for collaboration as well as a level of ownership by all stakeholders.

Lyons (2001) focused on the need for having flexible floor plans, mobile access as it relates to technology, mobility, and furniture designed to be flexible and easy to move to create better building designs. Lyons also believed that if conditions were not like these and of good quality, they could harm the learning of students in the academic setting. Furthermore, Darden and Cavendish (2011) joined in with concerns raised by others such as Cline and Necochea (2006), who looked to find relationships between school resources and expanded educational opportunities. They saw these resources as additional computer labs, introduction, and continuation of advance placement classes and the availability of clean and functional facilities.

Another aspect of the design is hard and soft environments. Uline and Tschannen-Moran (2007) detailed the aspects of hard and soft environments and their impact on the students that inhabited them during a school day. She determined that hard environments were locations that were not affected by interactions from people. While on the other hand, the soft environment would be areas that could be adjusted and was flexible from an aesthetic standpoint. In research from Sommer and Olsen (1980) and Uline (2000), it was determined that students were more engaged in learning when they were placed in soft rooms. It was found that “Soft Classrooms” encouraged better attendance, greater participation, and improved attitudes toward class, instructor, and peers. Moreover, minor design modifications to existing classrooms produced

changes in spatial behavior, increased engagement with instructional materials, decreased interruptions, and encouraged more high-level questioning.

School Facilities and Student Achievement

Although the research on the relationship between the condition of school and student success is limited, there is a small body of research about this topic. Lyons (2001) reports that there is an explicit relationship between the physical characteristics of school buildings and educational outcomes and that student performance can be enhanced if the building had those components that research has demonstrated are necessary for efficient and effective learning, Earthman and Lemasters (2011) and Uline (2000) report that a clean school is a more important factor than the cost and ostentation of the building In student success. Their combined view is that schools did not need to be expensive; they just needed to be clean and have a quality design that supported the academic needs of students.

Dealing with the issue of school facilities and student achievement, Uline and Tschannen-Moran (2007), Berner (1993), and Bowers and Burkett (1998) agree with the possibility that there may be a direct link connecting physical environment and student achievement. Darden and Cavendish (2011) state that students learning in subpar facilities is an extreme problem, particularly in poor communities.

Filardo et al. (2006) are emphatic about the need to assure that all students are educated in high-quality facilities. They state that "…closing the disparity gap in school building quality should be an integral part of closing the achievement gap and should be an explicit objective of state and federal education law, including No Child Left Behind and other funding sources" (p.30). They continue by writing that "providing decent, modern school buildings for all students is crucial to their academic achievement and overall well-being" (p. 30). Berner's (1993)

research on this topic provides credence to the relationship between the quality of the school building and student academic success. This research involved a team of architects, engineers, and maintenance staff, among others, who rated buildings as poor, fair, or excellent. The researchers found that schools with higher ratings of their facilities were more likely to have students with higher student achievement levels than those facilities rated as poor.

Earthman and Lemasters (2011) identified ten school buildings that had either air-conditioned or non-air-conditioned classrooms. They compared the academic achievement of students in the two types of classrooms. They found that the level of comfort related to heat and air had a relationship with student achievement. Uncomfortable students did not achieve, as well as comfortable students. Further, it was noted that there was also a significant difference in teachers' attitudes as related to the condition of the classroom, with teachers in air-conditioned rooms being more satisfied, but they did not find this difference as a reason teachers would leave the school or even the profession. However, the teachers believed that there was a level of negative effect on student achievement, and they also believed that some health issues arose from their exposure to the building.

In an examination of student equipment and environment, Earthman and Lemasters (2011) sought to determine whether students perform better when the proper teaching/learning equipment such as science labs, and appropriate classroom features such as lighting and the ability to control thermal comfort and the acoustical environment are available or present. It was found based on the available data that students who felt they had access to proper equipment and more well-equipped classrooms performed better academically. However, they conceded that there were limitations to the research that had been completed. The most common limitation was the inability to control all of the variables associated with student and teacher performance

In a study that examined student achievement in facilities in two Tennessee schools one old and one new, with all other factors such as socio-economic status (SES), teachers experience, free and reduced lunch status were compared, Bowers and Burkett (1988) found that students who were housed in the newer facility achieved at a higher rate than their comparable peers in older facilities.

In another study researching the relationship between the condition of the facility and student achievement, Tanner (2008) examined school building design characteristics, including the availability of space to accommodate students' movement and circulation, meeting in large or small groups, daylighting, views and space of instructional neighborhoods. The study found that schools designed to accommodate students' movement and circulation were more likely to have higher student achievement.

Another study conducted by the Heschong (1999) found that students with the most daylighting in their classrooms progressed 20 percent faster on mathematics and 26 percent faster on reading tests for one year than students having less daylight in their classrooms. The study examined selected schools in three states Washington, Colorado, and California. In each of the selected schools within the districts, the availability of more daylight was also associated with higher achievement. After taking into account additional factors, such as teacher characteristics, more daylight continued to be associated with higher achievement. The amount of daylight was not associated with attendance rates.

In addition to lighting, some of the reasons for lower achievement between students in high- and low-quality school buildings may be related to the impact of the design features of the lower quality buildings. For example, in one of the earliest studies of school facilities, Kritchevsky, Prescott, and Walling (1969) devised a case study of preschool facilities spanning

three years. They identified a link between the quality of space in a physical environment and teacher and student engagement. They gathered that low spatial quality led to less engagement by children and teachers. They also found that a larger and physically pleasing aesthetic location was more inviting for students to learn, play, and positively interact with others than a small unattractive setting.

Building age can be a factor that degrades the ability of a school to meet the needs of its occupants. Lyons (2001) discovered that as early as 1982, published studies concluded that old and obsolete buildings have negative consequences on the learning process while safe, modern, controlled environments enhance the learning. Some reasons for these discrepancies in student achievement in older and newer schools could be related to the lack of adequacy of these buildings in terms of student needs. For example, many older schools cannot meet the Americans with Disabilities Act (1990; 2009) accessibility requirements without extensive and often expensive renovation.

Further compounding this problem, Earthman and Lemasters (2011) determined that buildings that are 50 to 100 years old did not have the components necessary for a modern educational program, and as a result, the buildings work against student efforts to learn and teachers' ability to teach creatively. The average school, today at forty-two years old, had faced demands that were never intended or even conceived of when the building was built. Often their static, inflexible design can preclude the use of advanced teaching processes such as peer-to-peer and group participation (Lyons, 2001). Currently, education is being delivered in an entirely new manner, with new tools, techniques, and teaching methods that increasingly do not fit the simplistic conventions of forty-two-year-old school designs. Lyons (2001) noted that the present state of education involves highly interactive group learning experiences, which have

overshadowed the decades-old lecture/listen to the style of learning. These new experiences were mandated in the evolved, technologically driven working environment that students were preparing for in the future. During the time of the study, there were about "91,000 public schools, down from 262,000 in 1930. The student population, meanwhile, has grown from 25 million in 1950 to more than 47 million today. More than 75 percent of schools were built before 1970 - four decades ago" (p.1).

School facilities and student and parent attitudes. Another area that has been examined related to school facilities is the attitudes of others about the buildings. In one of their initial studies, Earthman and Lemasters (2011) determined the attitudes of the faculty and parents had a bearing upon the feelings students had about the building. Lyons (2001) reports that parents were unaware of the many things that their child endured while in the school facility. The examples presented were having issues with external noises in the classroom, inability to address temperature issues. The appearance of mold and air quality issues, just to name a few of the problems that parents might not be readily aware of in a short visit. The author attributed this not to bad parenting, but more to lack of knowledge of the importance of school facilities. Most of the time, when parents visit schools, they are focused upon student academic growth and not the building in which the children are being taught. All of these factors would generate an attitude on the part of the students about their worth and value in society. The researchers also found that students viewed their surroundings as a judgment of the community-made about the value of education. They also discovered that the attitude of the parents and teachers about the school facility also impacted the attitudes of the students.

In a later study, Earthman and Lemasters (2011) stated that parents have feelings about the building in which their child attended school. Through visits, they would conclude that the

administration of the school system either cared or did not care about the condition of the buildings in which students were housed. If the building were not in good condition, the parents and community would have a negative feeling about the building. Their attitudes, whether positive or negative, would also be communicated to their children and would also tend to impact their child's attitudes and behavior.

School facilities and student attitudes behavior. The research on the relationship between student attitudes and behavior and school facilities is limited. However, there were indications that student attitudes, social development, and behavior are related to the quality and aesthetics of the buildings in which they are educated. Uline (2000) found that ugly buildings contribute to ugly perceptions. Berlyne (1960) and Uline (2000) agree that the aesthetic appearance of a facility has a subsequent relationship on the attitudes and behavior of students who are being educated in the building. The more aesthetically pleasing a building is to look at, the better the behavior of the students within it. Students tend to take pride in their school when it looks like a place where they and others want to be. If the building is not aesthetically pleasing or not well kept, then the students' behavior tends to become a negative reflection of the facilities that they operate within daily.

This negative or positive behavior could be related to student attitudes and even attitudes of parents and the community. For example, Uline (2000) and Hawkins and Overbaugh (1998) found that more learning takes place in schools where the architecture reflected community values and was a source of civic pride. Farjado (2012) states, "the quality of aesthetics and appearance is perceived as instilling cultural awareness and pride in students as well as visitors to the school" (p. 115).

Regarding issues related to the building and student behavior, Cash (1993) and Lemasters (1997) agree that student behavior is, in some way, related to the facilities in which schooling occurs. Cash examined student behavior in two categories of buildings; those that were fifty years or older and those that were at least twenty years old, but not fifty years old. Cash determined that as the heat and air conditioners in the facility improved (this was prominent in the younger buildings), student behavior issues decreased. Inversely when the heat and air conditioners continued to decline (as they did in the buildings that were fifty years or older), student behavior issues increased. Lackney (1999) examined the teacher's perceptions of relationships between school facilities and student behavior. Lackney found that most teachers believed that the appearance of the school, its cleanliness, orderliness, and character influenced student social development, which, in turn, can impact their behavior.

A related issue is that students' behavior is not always the result of a negative moment in time. It can be the result of many other factors, including restlessness or a need for relief or a change of scenery. For example, in a study conducted decades ago by Kuller and Lindsten (1992), medical doctors reported that there was a biological need for windows in school buildings. This research suggested that windowless classrooms should be avoided. They found that rather than windows being a distraction and disrupting the learning process, they often provided a necessary relief for students.

Relationship of School Facilities and Performance, Satisfaction, and Retention of Teachers

The condition of the school facility appears to have a relationship, not only to student success, attitude, and behavior but to the attitudes and feelings of the faculty and staff who work in these settings. Farjado (2012) states that "perception studies of teachers in good and poor school buildings provide a rich source of data relative to the effect the physical environment has

upon these professionals. Such ethnographic studies are an important source of findings regarding the influence the physical environment has upon teachers and students" (p. 115). Leithwood and Jantzi (2006) found that internal states of buildings were an important factor in overall teacher performance. Thus, the teacher's work environment can impact what happens in the classroom, including how well students achieve and their experience in and of school and schooling.

This section examines varied aspects of the impact of the school building upon the teachers working in them. The section begins by reporting on research on the relationship between school facilities and teacher performance. This review of literature is followed by a discussion of teacher attitudes and perceptions and the quality of their school facility. The final section discusses teacher retention issues and their relationship to the condition of school facilities.

School facilities and teacher productivity and performance. Among the earliest research on the relationship between school facilities and teachers, performance is a study by Lowe (1990) examined the relationship between teacher performance and thermal comfort. He found that high-quality teachers, as designated by their selection as a state teacher of the year, emphasized their ability to control classroom temperature as central to their performance and the performance of their students. In studies almost a decade later, Lackney (1999) stated, "we tend to minimize the complexity of the facilities/outcomes relationship by focusing on single variable relationships. The physical environment consists of many interacting variables that we are all aware of, such as class size, spatial density, location & noise, acoustics & noise, secluded study spaces, ambient temperatures, and air quality" (p. 2). Within his study of five Baltimore schools, Lackney surveyed 14 qualities, 10 of them environmental qualities. Teachers were asked to rank

these items in terms of importance. Teachers ranked physical comfort and health as the most important considerations.

In 2009, Bailey summed up 57 studies, including, among others, those of Weinstein (1979), McGuffey (1982) and Lemasters (1997) on the topic of the relationship between school building conditions, student and teacher health, and productivity. He stated that there was a measurable relationship between the condition of a school building and the health and productivity of students and teachers. Healthy building conditions created healthy teachers who, in turn, created an inviting environment for students to learn. Earthman and Lemasters (2009) highlighted teacher attitudes, perceptions, feelings, and morale as dependent variables in studies dealing with the possible influence the school building has upon teacher health and productivity. They discovered more teachers rated their building as satisfactory than as unsatisfactory. Moreover, there were about 25% of the teachers surveyed who could not identify their facility as satisfactory or unsatisfactory.

Concerning an environmental, cultural mindset, Farjado (2012) postulates that teachers, correlated that a clean school equaled an orderly school. He believes that teachers are of the mindset that clean and shiny floors, fluorescent light strips that brightly shine without flickering, displays that were orderly and colorful, were the symbols of a school that was on a progressive track toward excellence.

Corcoran, Walker, and White (1988) found that the physical condition of school facilities, including thermal factors, affected teacher morale and effectiveness. In a similar study, Lackney (1996) also found that environmental quality might have affected behaviors, attitudes, and performance of students and teachers that could have affected organizational productivity and student educational outcomes.

Teachers spend a significant amount of their day within the facility in which they work. The way that teachers viewed their surroundings is reflected in the perceptions they exhibit about their facilities. Earthman and Lemasters (2009) investigated teacher perceptions of the conditions of their classrooms and how the condition of the building influenced their work. Although there have been other studies conducted concerning teachers' perceptions (Abril & Bannerman, 2015; Anderson, 2019; Arsen, Delpier, & Nagel, 2019; Kelly & Kutch, 2017; Matthews & Koner, 2016; Miksza, 2013; Stoltenberg, 2019) about their classrooms, this study was one of the first to compare the perceptions of teachers in satisfactory school buildings and those in unsatisfactory school buildings. The researchers found that the attitudinal ratings of teachers were higher in satisfactory conditions versus unsatisfactory conditions. Teacher attitudes in better facilities were more positive than those of their counterparts who were in unsatisfactory facilities. The researchers also suggested that the disposition of the teacher would be better when the environment was inviting and conducive to teach. On the other hand, those who cited themselves as not being satisfied had a more negative disposition towards the building and subsequently would have a less appealing attitude.

Teacher perception is reality. Earthman and Lemasters (2011) found that teachers were directly affected by their immediate surroundings and working conditions. If they were in a facility that was rundown and lacking in certain features such as thermal control of the environment, adequate lighting, and windows, modern science equipment, and controlled acoustical environment, their attitude would not be as positive as that of faculty members in modern buildings. On an international scale, Lumpkin (2012) based his works on research provided by Roberts, Edgerton, and Peter (2008), who looked at student achievement in learning environments in a Canadian setting. They viewed the facility through the lens of school morale

and teacher satisfaction. The researchers surveyed 25,000 students and 100 administrative leaders. They cited degraded conditions and deteriorating infrastructure in school facilities negatively impacted the morale of staff in selected buildings.

Weiss (1999) studied 1st-year teachers using data from the National Center for Education Statistics Schools and Staffing Survey (SASS) for 1987–88 and 1993–94. She found that positive perceptions of workplace conditions predicted a stronger commitment to teaching. The teachers with these positive perceptions identified fewer student discipline problems, good facilities, teacher induction, and professional support. When there was a perception that the facility was not valued, then there was also a belief that the teachers and the staff were not valued in the community as a whole. The researchers postulated that these negative perceptions could impact teacher productivity and performance in negative ways.

Brannon (2000) investigated teachers' beliefs about the impact of poor facilities on a variety of factors. They reported that teachers in poor buildings believed the condition of the classroom had a negative influence on student learning. Other researchers discovered that teachers in unsatisfactory buildings thought the classroom condition caused them health-related problems (Lemasters & Earthman, 2003). In a study conducted by Crook (2006), 11 high schools were identified in which the respective principals stated the buildings were unsatisfactory. These buildings served as the population of their study and were matched with a like number of schools in which the principals rated their respective schools as being in satisfactory condition. The attitudes of the teachers in these two groups of school buildings were compared through the use of an attitudinal scale developed for the project. Teachers in poor buildings had a more negative attitude than teachers in more modern buildings.

Teacher perceptions, satisfaction, and retention. Buckley, Schnider, and Shang (2004) found that buildings in poor condition influenced teachers' high rate of absenteeism and created a foreboding loss of teachers to the profession. An empirical study by Lambert, Hogan, and Barton (2001) indicated that the work environment was more important in shaping employee job satisfaction than demographic characteristics.

Job satisfaction refers to a positive emotional reaction to one's job or job experience (Locke, 1976). Many factors could lead to higher or decreased satisfaction levels among teachers. Ruszala (2008), a researcher George Washington University, used the theoretical model to mount a correlation study to investigate the relationship between the condition of school facilities and teacher satisfaction in the metropolitan school divisions of Virginia. During this research, two surveys were used the Commonwealth Assessment of Physical Environment and Teacher Opinionnaire of Physical Environments. These surveys were used to measure teacher satisfaction related to building conditions. The results were that there was a high positive correlation between the Commonwealth Assessment and the Teacher Opinionnaire for age, paint, and lighting. Additionally, there was a low positive correlation found for thermal conditions.

Earthman and Lemasters (2009) determined that when heat, cold, lighting, and acoustics worked against the efforts of a teacher in the classroom, accommodations must be made in the work of the teacher. Such compromises resulted in more intense efforts on the part of the teacher to do those things that were necessary to teach students properly. Teachers and students have compensated for unsatisfactory conditions and limited resources. However, over time students have paid for the increased work effort on the part of the teacher.

Although few studies have established a direct link between job satisfaction and turnover rate, Currivan (2000) saw job satisfaction as a key determinant of employee turnover intent,

which was the precursor to actual turnover. An empirical study by Lambert et al. (2001) also indicated that the work environment was more important in shaping employee job satisfaction than student or community demographic characteristics.

Lemasters and Earthman (2003) found that although there was a significant difference in attitudes of teachers in good and poor school buildings, the condition of even the poor classrooms was not enough to cause the teachers to consider moving from the school or leaving the profession. However, other researchers (Buckley et al., 2004; Johnson, 2006; Uline & Tschannen-Moran, 2007) have concluded that poor quality facilities can be a factor in teacher retention.

Hanushek, Kain, and Rivkin (2004) argued that, although important, teacher salaries were not all that mattered. They showed that teacher preferences across a range of jobs, and school conditions were just as important as salary in retention. According to their study, teachers would be willing to take lower salaries in exchange for better working conditions. In addition to having a relationship with teachers' attitudes and performance, the physical work environment appeared to influence teachers' level of satisfaction and loyalty to a school. Part of the problem that Buckley et al. (2004) presented was that poor building conditions greatly increased the likelihood that teachers would leave their school - a troubling fact given the need for more and better teachers in the most disadvantaged schools. Hanushek et al. (2004) argued that teacher preferences across a range of job and school conditions might be just as important as salary in their decision to remain at a school. Additionally, the authors concluded that teachers would choose to leave a school in order to work in a better facility, even if it meant lower compensation.

Buckley et al. (2004) found that buildings in poor conditions are related to a high rate of

teacher and student absenteeism, which in turn tend to lead to a loss of teachers in the profession. In a study in North Carolina, Ladd (2011) found that teachers were more likely to depart based on working conditions than because of student population and leadership within their school.

There is a myriad of factors affecting teacher retention, d from the studies cited the quality of the physical condition of the building within which teaching occurs can location affect the ability of teachers to teach, teacher morale, as well as their health and safety (General Accounting Office, 1995). The negative effect on teachers, in turn, can not only impact student learning, but there is ample evidence that it causes some teachers to leave the school setting or the profession.

The Conceptual Framework

The conceptual framework for this study was framed around The My Classroom Appraisal Protocol. The Teacher satisfaction as measured by my classroom appraisal protocol included:

- Teacher perceptions of classroom physical conditions
- Teachers attitudes towards facilities
- Teachers perceptions of relationship of classroom conditions as it relates to student achievement
- Teacher demographic characteristics of…gender, academic attainment, years taught, current grade taught across Rural Settings.

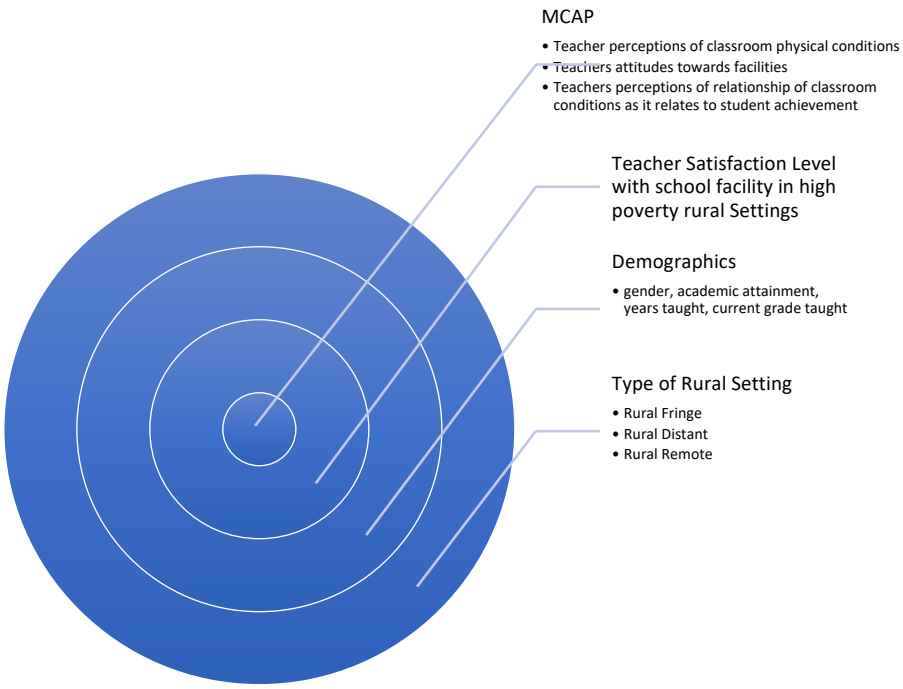

Figure 1. MCAP Conceptual Framework

Summary

There is a limited but growing body of literature on the negative impact that poor facilities may have had on student performance, teacher satisfaction, retention, and success. Most of the research on both of these topics has been conducted in non-rural settings. In the state in which this study occurred, over 40% of the students live in and attend schools in rural communities. There is no system in place to determine the quality of school facilities in this state. Also, there is almost no research about the relationship between the quality of school facilities and teacher factors in these settings. This study seeks to address this topic and add to the literature and the body of information available to researchers in general and to legislators, the community, and school systems seeking to enhance teacher quality and student learning, particularly in rural settings and to researchers interested in this important topic.

Conclusion

This chapter provided a review of the literature regarding the condition of school facilities in the United States and its relationship to teacher quality and satisfaction and student success, particularly in rural communities. It also reviewed information about the relationship between school facilities and student success with emphasis on factors that relate to teachers. It sought to provide a research foundation for the study. Chapter three provides the research design, methodology, data collection, and analysis procedures as well as the context of the study.

Chapter III: Methodology

The single most direct link to increasing student achievement is having a highly qualified teacher (Boyd et al., 2003) in the classroom. Academic performance (Cleveland et al., 2011), student behavior (Bishop, 2009), attendance (Bowers & Burkett, 1998), and student retention to graduation (Lee, 2002) are tied to having a Highly Qualified Teacher in the classroom. With the present emphasis on accountability measures related to NCLB, the Recovery and Reinvestment Act of 2009 (ARRA) and Alabama's Plan 2020 (ALSDE, 2012), has become critical for teachers to demonstrate competence in their teaching fields. Things such as a teacher preparation program, a bachelor's degree, and expertise in subject matter suggest competence. The experience and retention of highly qualified teachers is also critical to student achievement (DeLuca et al., 2009). These factors are persistent concerns for all schools and particularly for rural schools with high levels of student poverty (Strange, 2011b).

Rural school systems have a unique context that affects the staying power they have with their teaching force. Any number of combined factors may cause teachers to stay or leave rural school systems; salary being a top reason. The local tax base determines financial resources for school systems, and because this is normally less in a rural system, teacher pay is less (Strange, 2011b). The salary factor, coupled with isolation from housing, entertainment, and community activities, can cause teachers to seek employment in a metropolitan area. Other factors, such as conditions of facilities and teacher satisfaction with these facilities, can also impact teacher retention in rural school systems (Buckley et al., 2004).

It was determined by (Holmes, Parker, & Gibson, 2019) teacher retention is particularly acute in hard to staff schools. While teacher recruitment is a recognized problem facing school districts, teacher retention poses an even greater threat to successful student outcomes.

Rhodes (2019) provided research showing inadequate facilities and lack of funding are attributes of schools located in inner cities and schools that have high levels of poverty. While the literature is unclear on the impact that poverty has on teacher retention, it cannot be overlooked. High rates of student poverty may influence teacher retention. Dawn (2010) determined that teachers want to work in a school environment that is safe and has sufficient access to appropriate instructional materials and resources to teach effectively.

(Holmes et al., 2019) also emphasized school districts must take certain steps to ensure that more teachers are retained at hard-to-staff schools. First, if institutions begin to identify strengths, weaknesses, opportunities, threats, and challenges, they could better understand how to address concerns. Rhodes (2019) highlighted a school's climate also influences that teacher retention. Several organizational factors shape the school climate. Research has identified teacher salary/compensation, student behavior and discipline, administrative support/leadership, and facility and resources as factors that shape school climate and impact teacher retention.

Purpose of the Study

The purpose of this study was to examine the level of teachers' satisfaction with their school facilities in high poverty rural schools in a southern state and to determine the extent to which teacher satisfaction with their school facility and their attitude about the impact of the condition of the school and classroom facility upon their performance and that of their students. The study also examined these issues in relationship teacher gender, years of experience, grade levels, and their willingness to remain in their schools.

Significance of the Study

Although there is some evidence that the condition of school facilities may be related to teacher satisfaction, student performance, and willingness to remain in a school and that this

factor may also be related to student satisfaction and performance, this topic is greatly under-researched in the United States. Although research indicates that there is a relationship between student achievement, student health, teacher health, teacher retention, teacher satisfaction, the quality of teacher instruction, and the quality of school facilities, the research on this topic is limited. Additionally, there has not any research on this topic conducted in the southern state in which of this study occurred to determine or rate the quality of these facilities. This lack of research may also be true in other states since research has suggested that many of the school facilities in the country are under par. This finding indicates that there is not an interest or a focus on the physical condition of schools within the state of the study or the nation in general, although a large segment of our school population in the country attend schools in rural areas.

Additionally, although approximately there are 7,810 rural school districts, comprising about fifty-seven percent of all school districts in the country (U.S. Department of Education, 2015). However, research on rural schools has been very limited (Bergeron, 2016). It is estimated that only about six percent (6%) of all educational research is conducted in rural areas. (Hardre & Sullivan, 2008) The southern area of the United States is home to about twenty-three percent (23%) of all rural school districts (USDOE, 2015). These rural southern school districts are responsible for educating nearly thirty-three percent of all the region's school students (Johnson et al., 2014). At the time of this study, 41% of the students in the southern state of the study were enrolled in rural schools. Many of these districts were comprised of students from high poverty backgrounds. Many of the students in these schools have had difficulty in being successful academically. Within these schools, teacher retention has been generally low, and student achievement also has a problem. Thus, it may be of value to determine if the quality of school facilities has any relationship to this in this particular setting, and the findings can aid in

laying a foundation for future studies in similar settings.

Another thing that makes this study important is that although most studies group all rural schools into one classification, according to the NCES (2006), there are three types of rural school settings: Fringe, Distant and Remote. A Rural Fringe School setting is defined as a school that "was less than or equal to 5 miles from an urbanized area, as well as rural territory that is less than or equal to 2.5 miles from an urban cluster" (NCES, 2006). A Rural Distant School setting is one in which a school is "more than 5 miles but less than or equal to 25 miles from an urbanized area, as well as rural territory that is more than 2.5 miles but less than or equal to 10 miles from an urban cluster" (NCES, 2006). Finally, a Rural Remote School setting is defined as a school "more than 25 miles from an urbanized area and is also more than 10 miles from an urban cluster" (NCES, 2006). Although the researcher did not examine data by rural school type, all three types of rural schools were included in the study sample. Since this research was conducted with rural schools, it also adds to the research on this neglected area of study. It may also extend the conversations on these important but somewhat neglected topics and hopefully will stimulate further discussion and research within the state and nation.

The following five research questions guided the study:

1. What is the level of teacher overall satisfaction with the school facility in selected high poverty rural school systems in a southern state, as measured by the My Classroom Appraisal Protocol?
2. A. What is the teachers' level of satisfaction with their classroom based on their classroom assessment as measured by the My Classroom Appraisal Protocol?

   B. To what extent is there a relationship between teacher satisfaction with the classroom assessment within the school as measured by My Classroom Appraisal Protocol, teacher

demographics of gender, numbers of years of teaching experience, and grade level taught in selected high poverty rural school systems in a southern state, as measured by the My Classroom Appraisal Protocol?

3. A. What is the teachers' level of satisfaction with their classroom based on their Attitude Assessment, as measured by the My Classroom Appraisal Protocol?

   B. To what extent is there a relationship between teacher satisfaction with their attitude as measured by the My Classroom Appraisal Protocol and teacher demographics of gender, numbers of years of teaching experience, and grade level taught in selected high poverty rural school systems in a southern state, as measured by the My Classroom Appraisal Protocol?

4. A. What is the teachers' level of satisfaction with their classroom based on their assessment of student learning, as measured by the My Classroom Appraisal Protocol?

   B. To what extent is there a relationship between teacher satisfaction with their assessment of student learning as measured by the My Classroom Appraisal Protocol, and teacher demographics of gender, numbers of years of teaching experience, and grade level taught in selected high poverty rural school systems in a southern state, as measured by the My Classroom Appraisal Protocol?

5. To what extent is the condition of the school building a factor in teachers' willingness to stay or leave – to remain as an employee of the school selected as a high poverty rural school system in a southern state?

Methods

Overall, the 2016 state school system population was comprised of 1,509 schools, 734,800 students with an expenditure rate per student of $9,378, and 40,766 teachers (NCES,

2016). Teachers earned an average annual salary of $48,868 (NCES, 2016). In the state, there are 599 rural schools.

The researcher is an administrator in the state and has relationships with many of the administrators within various school systems, allowing for greater access and thus resulting in the use of a purposeful and convenient sample. According to the 2015 projected data, the southern state's population was 4,858,979. The median income was $26,494, with 18.5% living in poverty. The racial profile was comprised of 69.5% Caucasians, 26.8% African American, 4.2% Hispanic, 1.6%, two or more races. There were 83.7% of the population considered to be high school graduates, with 23.1% over the age of 25 with a bachelor's degree or greater. (census.gov). The current unemployment rate is 5.6 percent (labor.alabama.gov).

Instrumentation. The My Classroom Appraisal Protocol instrument was developed by Earthman (2004) for a study of teacher attitudes in Virginia. The instrument used for this study consists of 49 items covering building components and conditions such as acoustics, condition of the furniture and equipment, lighting, science equipment, space, thermal control, presence of graffiti, and demographics.

For this study, the My Classroom Appraisal Protocol was expanded by the addition of two sections - Building Assessment and Demographics, in addition to an open-ended question. Ultimately, the instrument is based on teachers' attitude as it relates to classroom condition and is divided into five sections and one responsive statement:

1. Section I: Classroom Assessment. This section addresses the degree to which teachers are satisfied with their classroom environment. It is made up of 16 questions that measure teachers' attitudes about the physical classroom environment.
2. Section II: Attitudinal Assessments. Section two assessment deals with how the

environment affects individual teachers and the degree to which it may influence them to remain or leave the rural school. The second section is made up of 14 questions that measure teachers' attitudes about the conditions of their classroom.

3. Section III: Student Learning. The student learning section measures the degree to which teachers perceive the environment as being effective for student learning. The third section of the MCAP is made up of 11 questions which measure how teachers felt about the physical impact of their classroom on student learning
4. Section IV: Demographics. The demographics section contains six questions related to demographical data. This section collects information on gender, academic achievement, years of experience, teaching grade(s), age bracket, and racial identification. Responses to these items were used for the analysis of responses to the first three sections of the instrument.
5. Section V: Building Assessment. The building assessment assesses teachers' perceptions about the condition of the school building. The responses to this item were used for a more detailed analysis of the responses to the first three sections. This comparison could aid in understanding whether there is a difference in the attitudes of teachers who rate their building as being satisfactory or unsatisfactory.
6. Open-Ended Statement. An opened ended statement was added to the end of the survey to allow respondents to note anything they thought was important as it related to their facility. The question was stated as, "Please feel free to share any comments about your classroom or building facility that you think may be of importance.

Item responses from the three original MCAP scales were not modified. Teachers responded by selecting one of five responses. The choices for all sections of the instrument are:

Strongly Disagree, Disagree, Neither Agree or Disagree, Agree, and Strongly Agree. Furthermore, the additional sections consist of the selection of the answer that suits the teacher personally and a Likert scale. The scale ranged from very poor (1) to excellent (5) or non-factor (1) to significant factor (5).

Instrument validity. The final instrument was subjected to content validity. Revisions to the items resulted from the pilot administration of the MCAP. A Cronbach's alpha was completed on the results of this administration, yielding $\alpha = 0.92$, indicating a high level of reliability (Earthman 2009) Although they did not report the data, Leigh (2012) reported they found the instrument was valid.

In a separate study in 2008, the MCAP was subjected to content validity by asking teachers in three school buildings to complete the instrument (Earthman & Lemasters, 2009). The composite scores of the MCAP instrument were used for comparison purposes. The study determined that teacher satisfaction levels were higher in facilities they considered to be quality. The individuals who did not believe the facilities were quality had a negative attitude, but this attitude was not a contributing factor to them leaving the building or the field of education.

Previous use of the instrument. In a study conducted by Crook (2006), principals from 22 sites assessed whether they thought the facility they lead was satisfactory or unsatisfactory. There were 11 sites in each category of satisfactory and unsatisfactory. Next, teachers provided input on their satisfaction level as well as attitude towards the building. The differences between the responses of teachers in satisfactory buildings are significantly different from those of teachers in unsatisfactory buildings. However, even with the responses of teachers who indicated unsatisfactory facilities, they did not cite this as a reason to leave their school.

In a study conducted by Leigh (2012) teachers from two schools had 46 respondents who met the

criteria for submitting a valid survey for the study. The MCAP revealed teachers in the newer building had better attitudes about (a) the condition of their classrooms, (b) how the condition of their classrooms made them feel, and (c) the effect of classroom conditions on student learning. Teacher attitudes about their environment were obtained through the MCAP assessment instrument. This instrument provided an assessment of how teachers felt about their classroom and school building and were used to compare the response of teachers with School A and School B. Teachers also indicated their overall attitude about the condition of their building as either satisfactory or unsatisfactory by selecting the appropriate response under the section Building Assessment on the MCAP instrument.

Research Design

The study used a quantitative design to determine the extent of teacher satisfaction with facilities across rural/poverty systems. Within this group of rural/poverty systems, the study examined satisfaction across rural school systems. Further quantitative analysis was done to determine the extent of teacher satisfaction with facilities by gender, teaching experience, and grade level. The dependent variables were overall teacher satisfaction, classroom environment, condition of the classroom, and student learning assessment. The independent variables included teacher demographics such as gender, years taught, grade level taught, and willingness to remain a school employee at their current location.

Research Procedures

Institutional Review Board. The Institutional Review Board approval was attained by submitting the Auburn University application for human subject research. The application included a brief review of the literature, research design, data collection procedures, and research questions. The researcher also explained the study's significance and how human subjects would

be recruited and used in the study. The researcher obtained exempt status primarily because the survey was anonymous and required minimal contact between subjects and the researcher

Data collection. After receiving approval from the school superintendent or principal, depending on the requirements of each school district, the survey was administered in an online format to the sample of teachers. Teachers were contacted via email by either the principal or the researcher, depending on the requirements of the school district. Upon agreeing to participate, each teacher was sent an email containing the consent to participate letter outlining the procedures for inclusion in the study. Next, a link to the survey was provided. The researcher's contact information was attached to the consent letter given to all participants. Participants were also informed of their option to cancel their participation at any point during the study. It was stressed that their identity was anonymous, and the research had no identifiable information to connect participants to individual survey responses. The survey was administered through Qualtrics.

After the respondents were asked to complete the survey, a second call/email was made to remind them of the survey. A third call/email was given as a reminder to complete the survey during the final week. The data collection began on 10-01-2017 and ended on 05-15-2018.

Statistical analysis. The researcher utilized the statistical analysis procedures of descriptive statistics programs in the Statistical Package for the Social Sciences (SPSS) version 22.0. Responses for the 112 surveys completed were exported into SPSS, and an analysis was performed. The most appropriate statistical method for this study was determined to be mean, standard deviation, and analysis of variance (ANOVA). Descriptive statistics were used with the demographic data gathered on the participants in the study. Demographic relationships to teacher

facility satisfaction were measured with the variables gender, teaching experience, and grade level.

Qualitative analysis. The researcher used conventional content analysis to categorize the responses to the open-ended question. In this type of analysis, "categories are derived from data during data analysis…. and codes are derived from data" (Hsieh & Shannon, 2005, p. 1286). The researcher began by reading all of the statements in order to get an overall sense of the responses. Then he went re-read each one and put them into categories and grouped and regrouped until saturation occurred.

Summary

The study sought to examine the extent of teacher satisfaction with their school facilities in high poverty rural school systems. This chapter provided a detailed discussion of the instrument and methods used for the study. The instrument is based on teachers' attitudes about classroom conditions and is divided into five sections with one responsive statement: The chapter also includes information about the instrument's validity and reliability. Data collection and analysis procedures used to conduct the study were discussed. The study was quantitative, and the design methodology was descriptive.

Chapter IV: Data Analysis and Results

For this study, nine school systems were examined. The systems were comprised of primarily rural distant schools. The goal of this chapter is to present the data analysis findings in order to address the following research questions:

1. What is the level of teacher overall satisfaction with the school facility in selected high poverty rural school systems in a southern state, as measured by the My Classroom Appraisal Protocol?
2. A. What is the teachers' level of satisfaction with their classroom based on their classroom assessment as measured by the My Classroom Appraisal Protocol?

   B. To what extent is there a relationship between teacher satisfaction with the classroom assessment within the school as measured by My Classroom Appraisal Protocol, teacher demographics of gender, numbers of years of teaching experience, and grade level taught in selected high poverty rural school systems in a southern state, as measured by the My Classroom Appraisal Protocol?
3. A. What is the teachers' level of satisfaction with their classroom based on their Attitude Assessment, as measured by the My Classroom Appraisal Protocol?

   B. To what extent is there a relationship between teacher satisfaction with their attitude as measured by the My Classroom Appraisal Protocol and teacher demographics of gender, numbers of years of teaching experience, and grade level taught in selected high poverty rural school systems in a southern state, as measured by the My Classroom Appraisal Protocol?
4. A. What is the teachers' level of satisfaction with their classroom based on their assessment of student learning, as measured by the My Classroom Appraisal Protocol?

B. To what extent is there a relationship between teacher satisfaction with their assessment of student learning as measured by the My Classroom Appraisal Protocol, and teacher demographics of gender, numbers of years of teaching experience, and grade level taught in selected high poverty rural school systems in a southern state, as measured by the My Classroom Appraisal Protocol?

5. To what extent is the condition of the school building a factor in teachers' willingness to stay or leave – to remain as an employee of the school selected as a high poverty rural school system in a southern state?

Data Analysis

Nine rural school systems classified as distant were examined during this study. There were 112 completed surveys out of 136 responses. Because principals distributed the surveys, the actual number of surveys disseminated is unknown. Therefore, a response rate cannot be computed. Out of the 112 complete surveys, 24 respondents are male and 88 are female. More than 50% of the participants have master's degrees, 24% have 22 or more years of experience, and 35% of them are between the ages of 31 and 45 (See Tables 3 & 4).

The researcher utilized the statistical analysis procedures of descriptive statistics programs in SPSS. Surveys were sent to ten districts. Responses for the 136 surveys completed were exported into SPSS, and an analysis was performed. The most appropriate statistical method for questions in this study was determined to be means, standard deviation, and ANOVA.

The Overall scale score was computed based on the mean across all items, and scale scores were computed based on the mean of items within the scale. Additionally, sample-specific reliabilities were completed on the three instrument scales. Classroom Assessment addresses the

degree to which teachers are satisfied with their classroom environment. It is the ability to measure satisfaction levels within the classroom as it relates to condition. Three Classroom Assessment items were reversed coded. Item five was omitted from the study due to it being repetitive. The omission of this item produced a higher Cronbach's alpha. Attitudinal Assessments address how the environment affects individual teachers and the degree to which it may influence them to remain or leave the school. Attitudinal assessment is the ability to measure satisfaction level based on a teacher's attitude as it relates to classroom conditions. There were eight Attitudinal Assessment questions reverse coded. The Student Learning assessment addresses the degree to which teachers perceive the environment as effective student learning. It is the ability to measure satisfaction level based on student learning as it relates to classroom conditions. There were five Student Learning items written in the negative; therefore, these items were reverse coded. The three-instrument reliability Alpha coefficients (by scale) were strong, ranging from .832 to .883. The results are presented in Table 1 below.

Table 1

Reliability Statistics of the Study Instrument

Scale	Cronbach's Alpha	Number of Items	Items reverse coded
Classroom Assessment	.883	16	5, 6, 14, 16
Attitudinal Assessment	.879	14	1,3,5,7,10,11,12,14
Student Learning	.832	11	1,2,3,7,8

Results

Research question one. Research question one asked, "what is the level of teacher overall satisfaction with the school facility in selected high poverty rural school systems in a southern state, as measured by the My Classroom Appraisal Protocol?" All items on the instrument were averaged to create the overall scaled score. The mean for the overall scale across all respondents was 3.60, with a standard deviation of 0.63.

Table 2

Descriptive Statistics for Overall Satisfaction by all Respondents

Gender	Mean	Std. Deviation	N
All	3.60	.63	112

The overall scale mean and standard deviation were also calculated by gender, years taught, and level taught. Tables 3, 4, and 5 display group means and standard deviations. Overall, teachers were slightly above the midpoint related to overall satisfaction with school facility conditions.

Table 3

Descriptive Statistics for Overall Satisfaction by Gender

Gender	Mean	Std. Deviation	N
Female	3.57	.64	88
Male	3.75	.57	24

Table 4

Descriptive Statistics for Overall Satisfaction for Years Taught

Years Taught	Mean	Std. Deviation	N
Less than 10	3.63	.74	39
Ten to 18	3.66	.57	38
19+	3.57	.57	39

Table 5

Descriptive Statistics for Overall Satisfaction for Grade Level Taught

Grade Taught	Mean	Std. Deviation	N
Elementary Pre-K-6	3.58	.53	43
Secondary 7-12	3.69	.68	60

Research question two. Research question two asked two questions. The first question was, "what is the teachers' level of satisfaction with their classroom based on their Classroom Assessment as measured by the My Classroom Appraisal Protocol?" In determining the overall satisfaction for Classroom Assessment for all respondents, The Classroom Assessment scale score was computed based on the mean across all items, and scale scores were computed based

on the mean of items within the scale. It was determined that respondents were slightly above the midpoint related to classroom assessment overall satisfaction within the school facility conditions. The results are presented in Table 6. One Hundred and twenty-eight respondents completed all items on the Satisfaction Classroom Assessment Scale. Statistical analyses produced a mean of 3.66 with a standard deviation of .70.

Table 6

Descriptive Statistics for Overall Satisfaction of Classroom Assessment by all Respondents

Gender	Mean	Std. Deviation	N
All	3.66	.70	128

The second part of research question two asked, "to what extent is there a relationship between teacher satisfaction with the classroom assessment within the school as measured by My Classroom Appraisal Protocol*,* teacher demographics of gender, number of years of teaching experience, and grade level taught in selected high poverty rural school systems in a southern state, as measured by the My Classroom Appraisal Protocol?" Neither gender, years of experience, nor grade level taught yielded statistical significance (Alpha=.05). Tables 7 through 9 show group means and standard deviations for each area. Levene's test for gender and grade level taught indicated equality of variance and was not violated at a statically significant level. However, Levene's test did reach statistical significance for teacher years of experience, which may indicate a problem with equality of variance. The effect sizes were small, as shown in Table 10.

Table 7

Descriptive Statistics for Classroom Assessment by Gender

Gender	Mean	Std. Deviation	N
Female	3.65	.70	88
Male	3.79	.72	24

Table 8

Descriptive Statistics for Classroom Assessment by Years Taught

Years Taught	Mean	Std. Deviation	N
Less than 10	3.70	.83	39
Ten to 18	3.74	.67	38
19+	3.64	.61	39

Table 9

Descriptive Statistics for Classroom Assessment by Grade Taught

Grade Taught	Mean	Std. Deviation	N
Elementary Pre-K-6	3.69	.64	43
Secondary 7-12	3.77	.74	60

Table 10

ANOVA Results for Classroom Assessment

Independent Variable	F(df)	p-value	Eta Square
Gender	0.70 (1, 110)	.41	.006
Experience	0.21 (2, 113)	.81	.004
Grade Taught	0.26 (1, 101)	.61	.003

Satisfaction levels related to classroom assessment did not differ based on gender, experience, or grade taught.

Research question three. Research question three also includes two questions. The first question asked, "What is the teachers' level of satisfaction with their classroom based on their Attitude Assessment as measured by the My Classroom Appraisal Protocol?" In determining the overall satisfaction for Attitudinal Assessment for all respondents, The Attitudinal Assessment scale score was computed based on the mean across all items, and scale scores were computed based on the mean of items within the scale. It was determined that respondents were slightly above the midpoint related to attitudinal assessment overall satisfaction within the school facility conditions. The results are presented in Table 11 below. One Hundred and nineteen respondents

completed all items on the Satisfaction Classroom Assessment Scale. Statistical analyses produced a mean of 3.65 with a standard deviation of .68.

Table 11

Descriptive Statistics for Overall Satisfaction of Attitudinal Assessment by all Respondents

Gender	Mean	Std. Deviation	N
All	3.65	.68	119

The second part of research question three asked, "to what extent is there a relationship between teacher satisfaction with their attitude as measured by My Classroom Appraisal Protocol teacher demographics of gender, number of years of teaching experience, and grade level taught in selected high poverty rural school systems in a southern state, as measured by the My Classroom Appraisal Protocol?" Statistical significance was not reached for Gender, years of experience, nor grade level taught. Levene's test for gender and years taught indicated equality of variance was not violated at a statistically significant level. However, Levene's test of equality of variance was statistically significant for grade level taught; thus, results need to be viewed with caution. Statistical significance was not reached, and the effect sizes were small. See Tables 12 through 14 for group means and standard deviations. Table 15 displays ANOVA results.

Table 12

Descriptive Statistics for Attitudinal Assessment across Gender

Gender	**Mean**	**Std. Deviation**	**N**
Female	3.61	.68	88
Male	3.79	.72	24

Table 13

Descriptive Statistics for Attitudinal Assessment for Years Taught

Years Taught	**Mean**	**Std. Deviation**	**N**
Less than 10	3.65	.77	39
Ten to 18	3.70	.58	38
19+	3.59	.70	39

Table 14

Descriptive Statistics for Attitudinal Assessment across grade taught

Grade Taught	Mean	Std. Deviation	N
Elementary Pre-K-6	3.63	.56	43
Secondary 7-12	3.71	.76	60

Table 15

ANOVA Results for Attitudinal Assessment

Independent Variable	F(df)	p-value	Eta Square
Gender	1.19 (1, 110)	.28	.011
Experience	0.24 (2, 113)	.79	.004
Grade Taught	0.33 (1, 110)	.57	.003

Satisfaction levels related to attitude about their facility did not differ based on gender experience and grade level taught.

Research question four. The first part of the fourth research question asked, "What is the teachers' level of satisfaction with their classroom based on their assessment of Student Learning as measured by the My Classroom Appraisal Protocol?" In determining the overall satisfaction for Student Learning for all respondents, The Student Learning scale score was computed based on the mean across all items, and scale scores were computed based on the mean of items within the scale. It was determined that respondents were slightly above the midpoint related to Student Learning's overall satisfaction within the school facility conditions. The results are presented in Table 16 below.

Table 16

Descriptive Statistics for Overall Satisfaction of Student Learning by all Respondents

Gender	Mean	Std. Deviation	N
All	3.50	.66	118

One Hundred and eighteen respondents completed all items on the Satisfaction Classroom Assessment Scale. Statistical analyses produced a mean of 3.50 with a standard

deviation of .66. However, it can be noted that the mean is slightly less for Student Learning in relationship to Classroom Assessment and Attitudinal Assessment across three scales.

The second part of research question four asked, “To what extent is there a relationship between teacher satisfaction with their assessment of student learning as measured by My Classroom Appraisal Protocol teacher demographics of gender, number of years of teaching experience, and grade level taught in selected high poverty rural school systems in a southern state, as measured by the My Classroom Appraisal Protocol?” The statistical significance was not reached for gender, years of experience, nor grade level taught. Levene’s test for years taught, and grade level taught indicated equality of variance was not violated at a statistically significant level. However, Levene’s test of equality of variance was statistically significant for gender; thus, results need to be viewed with caution. The effect sizes were small. In Tables 17-19, the group mean, and standard deviations are displayed. Table 20 displays ANOVA results.

Table 17

Descriptive Statistics for Student Learning by Gender

Gender	Mean	Std. Deviation	N
Female	3.46	.73	88
Male	3.69	.51	24

However, it can be noted that the mean is slightly less for Student Learning in relationship to Classroom Assessment and Attitudinal Assessment across the three scales. The male respondents' mean was higher related to Student Learning.

Table 18

Descriptive Statistics for Student Learning by Years Taught

Years Taught	Mean	Std. Deviation	N
Less than 10	3.54	.80	39
Ten to 18	3.55	.68	38
19+	3.47	.59	39

Table 19

Descriptive Statistics for Student Learning by Grade Taught

Grade Taught	Mean	Std. Deviation	N
Elementary Pre-K-6	3.43	.65	43
Secondary 7-12	3.59	.71	60

Table 20

ANOVA Results for Student Learning

Independent Variable	F(df)	p-value	Eta Square
Gender	2.16 (1, 110)	.14	.019
Experience	0.15 (2, 113)	.86	.003
Grade Taught	1.48 (1, 101)	.23	.014

Satisfaction with Student Learning did not differ based on gender experience and grade level taught.

Research question five. The fifth research question asked, "To what extent is the condition of the school building a factor in teachers' willingness to stay or leave to remain as an employee of the school selected high poverty rural school systems in a southern state?" Overall, 115 individuals responded to this question. Seventy-nine percent of the respondents indicated that their facility was minimal neutral or non-factor. Only seventeen percent indicated it was a likely factor, and only four percent identified it as a significant factor.

Table 21

Teachers' Perceptions of Quality Facilities Versus Willingness to Remain in High Poverty Rural School

Response	Percentage	Count
Non Factor (1)	31	36
Minimal Factor (2)	18	21
Neutral (3)	29	33
Likely Factor (4)	17	20
Significant Factor (5)	4	5

Open-ended question. There was an additional question that was asked within the survey to determine if there were any additional comments or information available from the study participants. There were 25 of the 136 survey participants who responded to the following open-ended question: "Please feel free to share any other comments about your classroom or building facility that you think may be of importance." Responses directly related to the condition of the facilities were categorized into five areas. Category one, Inadequate Facilities, dealt with the poor condition of the building and issues related directly to the facilities. Five of the twenty-two respondents (23 %) shared their concerns related to this issue. For example, one individual wrote, "The ceilings in the classroom have obvious mold and shows the school's age." Another said, "We need a new school built. This school is full of nasty things from the floors to the walls of the black mold." In both of these cases, there could be significant health concerns due to the mold.

Three of the respondents expressed concerns about the facility and its ability to be a functional environment for today's education. For example, one person commented, "The classroom only has two outlets, which are not conducive for modern equipment. Another said, "The room has carpet, which has not been updated for years. A third person remarked, "My classroom is ok, but there are many throughout the building that is not. For instance, one of the computer labs is horrible. If I were answering in reference to that room, then my answers would be completely different."

In each of the three preceding statements, the concerns provided with the electrical availability would lead to problems with using necessary equipment in the educational setting as well as with the carpet being older it could also be tied back to the more significant health concerns of the initial two respondents with their concerns with mold in the facility. It also

should be noted that one of the respondents was maybe not concerned with their immediate location in the facility, but they did have significant concerns about other portions of the facility. Category two, Satisfactory Facilities, like category 1, also dealt with the condition of the building, but these respondents had positive things to say. (There were four of the twenty-two respondents, or 17%, who presented a positive perspective related to their school facility conditions. Of this, one person shared, my school is the newest in the district. We had renovations to the building back and 2005. We have a great custodial staff, and we have the military volunteer to paint for us every two months. We are currently repainting the entire building. Although this school is in a high poverty area, our students enjoy coming to school, and we have a clean, healthy environment for them to learn in, Another person shared, "I am spoiled as I am in a newly constructed Library Media Center which was first used during the 2014-2015 academic year**.** Another individual shared that they loved the facility that they work in. One person stated that they "loved teaching at the school and loved the environment.".

The third category, Neutral satisfaction noted by three of the twenty-two respondents (13 percent) indicated the facility and its condition does not relate to their feelings about their school or their decision to stay because of other factors that impacted them positively. Among these comments, one teacher stated," I do my best not to allow the size of my room or the lack of the very best materials to take effect on my students. My school is very supportive to my students and me and that is the number one factor when it comes to me staying or leaving." Another person felt that "The support I am given by the administration, and the respect from my students are my main deciding factor for staying. The last individual in this grouping stated that the facility has little to do with the atmosphere I work to create.

In each of these cases, there was not a positive or negative connotation related to the facility, and the need to be in a high-quality facility was not important. Teacher satisfaction relied on other external factors such as respect from administration, students, and their internal desire to create a positive atmosphere.

The fourth category was related to the condition of the building, and comments were specific as it relates to the facility. There were five of twenty-two comments, or 23%, that provided common themes that were addressed, such as location, age of the facility, the desire to have a new facility and the ability to address environmental concerns such as air conditioning, heating building layout, furniture/equipment, and structural needs. The other comments that were written did not relate to the facility in any way, so they had no relevance and, therefore, are not reported.

Summary

Chapter four detailed the findings of the study. The results of this study included information about the demographics of the participants and their perceptions of satisfaction with school facilities. The study also explored participants' willingness to stay or leave their current rural school environment. Each research question was discussed by analysis of gender, years taught, and grade taught except for question five, which explored teachers' perceptions of quality facilities and their willingness to remain employed at a high poverty rural school. Chapter V presents a summary of these findings, their relationship to previous research, implications for practice, and recommendations for future research.

Chapter V: Summary, Recommendations, and Conclusions

Chapter five summarizes the findings and then discusses the implications and conclusions of the study. It also includes recommendations for further study. This research study involved an investigation of the satisfaction levels and attitudes of teachers about the facilities in which they work. Specifically, the study examined teachers' overall satisfaction with the school facility, their satisfaction with the condition of their classroom, and their attitudes about the degree to which the condition of their classroom related to their success and to their students' ability to learn successfully. The study also investigated these responses by teacher gender, years taught, and grade level taught. The study used quantitative data analysis and included one open-ended qualitative question. The research applied statistical analyses for the questions related to teacher satisfaction and used content analysis and coding for the qualitative question. The research was conducted in rural schools in a Southern state of the United States. The data collection process began on 10-01-2017 and ended on 05-15-2018.

Findings indicate that teachers were satisfied with their facilities and that the state of their facilities had little impact on their decisions to remain in their school systems. These findings were not consistent with the reviewed literature and previous studies. Although the reasons for these differences are unknown, there are some possibilities this outcome presented in the discussion and implication section of the chapter.

Review of Findings

This section summarizes the findings for each of the research questions. The first research question asked, "What is the level of teacher overall satisfaction with the school facility in selected high poverty rural school systems in a southern state, as measured by the My Classroom Appraisal Protocol?"

As reported in Chapter 4, the overall satisfaction of these teachers is at a moderately high level, with a mean score of 3.60. Additionally, the respondents in each of the overall categories consistently rated their satisfaction on the five-point Likert scale at a 70-75% satisfaction rate. The reason for the high rate of satisfaction is unknown. However, it could be attributed to the fact that the facility in which respondents work is well built and well equipped. However, it could also be that the facility is not that well designed, equipped, or maintained, but that respondents are satisfied or have adjusted to the condition of their facilities. This possible mindset is supported by Earthman and Lemasters (2009), who report that teachers sometimes compensate for the facilities in which they work in order to keep up a level of production and to be successful in the environment in which they are located.

The findings for Questions 2a 3a and 4a the findings for them are very similar, so they are being presented and discussed together. These questions included (a) What is the teachers' level of satisfaction with their classroom based on their Classroom Assessment as measured by the My Classroom Appraisal Protocol?; (b) What is the teachers' level of satisfaction with their classroom based on their Attitude Assessment as measured by the My Classroom Appraisal Protocol?, and (c) What is the teachers' level of satisfaction with their classroom based on their assessment of Student Learning as measured by the My Classroom Appraisal Protocol?

As with responses for Overall Satisfaction, addressed in question 1, teachers reported moderately high levels of satisfaction for all three questions. The mean level of Satisfaction for the condition of their classroom facility was 3.66. The mean for the degree to which teachers believe the condition of their classroom facility impacted their ability to succeed, named as their Attitude Assessment on the instrument, was 3.65. Finally, the mean for teacher satisfaction with the condition of their classroom as it relates to Student Learning was 3.50.

It may be of interest to note that the overall mean for Student Learning (3.50) was slightly lower than that of the other categories: Overall Satisfaction, (3.60) Classroom Assessment (3.66), and Attitudinal Assessment (3.65). Although the differences were small, the researcher posits that the area of student learning may have been slightly lower because student learning may be their highest priority for these teachers, and anything that might detract from it might be of more importance to them.

These findings, however, are also inconsistent with previous research (Buckley et al., 2004; Johnson, 2006; Uline & Tschannen-Moran, 2007), which found that facilities did have an impact on these aspects of teacher satisfaction which will be discussed further when dealing with teacher responses to question 5 and in the discussion section of this chapter.

Questions 2b, 3b. and 4b, and their findings are similar. Therefore, they are being presented and discussed together: Question 2 b. asked, "To what extent is there a relationship between teacher satisfaction with the classroom assessment within the school as measured by My Classroom Appraisal Protocol teacher demographics of gender, number of years of teaching experience, and grade level taught in selected high poverty rural school systems in a southern state, as measured by the My Classroom Appraisal Protocol? Question 3 b. asked, "To what extent is there a relationship between teacher satisfaction with their attitude as measured by My Classroom Appraisal Protocol teacher demographics of gender, number of years of teaching experience, and grade level taught in selected high poverty rural school systems in a southern state, as measured by the My Classroom Appraisal Protocol? Question 4 b asked," To what extent is there a relationship between teacher satisfaction with student learning measured by My Classroom Appraisal Protocol teacher demographics of gender, number of years of teaching

experience, and grade level taught in selected high poverty rural school systems in a southern state, as measured by the My Classroom Appraisal Protocol?

There were no statistical differences for any of the factors examined (gender, years of experience, or grade level. Since there has been no previous research about these issues, it is difficult to determine why these findings occurred or their meaning.

The fifth research question asked, "To what extent is the condition of the school building a factor in teachers' willingness to stay or remain as an employee of the school in selected high poverty rural school systems in a southern state?" This question was an additional question that was asked within the survey to gain further insights into participants' thinking about the influence that the condition of their facility has on their decision to remain in their school. There were 115 total responses to this question. Nearly 80% of the teachers responded that they had a neutral or non -factor feeling related to their willingness to leave or remain as an employee in their school related to the condition of their school. The reasons for this finding are unknown. However, one reason for this finding may be that the perceived importance of the condition of the facility and the classroom is minimal compared to the teacher's commitment to the students, their school, or their particular community. Other possibilities are presented in the discussion section.

An open-ended question was added to the questionnaire to allow respondents to share any additional thoughts about their school facility or classroom. The question was, *"*Please feel free to share any other comments about your classroom or building facility that you think may be of importance." There were 25 of the 136 survey participants who responded to this question. However, only seventeen respondents responded relative to their school facility.

Although it appears that most of the respondents are satisfied with their school and classroom facilities, the open-ended responses indicated that some of these settings contained health hazards (mold and old carpeting) and did not appear to be conducive to high levels of learning in the computer age (horrible computer laboratory and inadequate electrical capacity). Since only five people noted this, either the buildings and classrooms, it may be that most of the respondents are in satisfactory condition, or the teachers have just adjusted to having poor facilities since the findings indicated that a large majority of them would not leave their jobs because of poor facilities. These findings bear further study.

Discussion and Implications of Findings

Past research indicates that there is a relationship between school facility conditions and teacher satisfaction and attitudes (Leigh, 2012). This study assessed whether these relationships existed in rural school systems in a Southern state. The findings of this study were not consistent with past previous studies. Another surprising finding similar to the findings reported above was that there was a large percentage of people who said that the condition of the building is not a factor in their decision to stay in their school system. The majority of teachers indicated that they would stay regardless of the condition of their facility.

One reason for this finding may be that these teachers are working in high poverty schools, which are often difficult to staff. Therefore, it may be that people in these schools have a strong commitment to their students, and they understand that they may or may not have the kind of facilities or resources that others have and so the issue of facilities is irrelevant to them. It may also be that the teachers see that although these students have some elements in their lives that bring them strength, many may also have other issues they face that may hinder their learning, (i.e., poverty, lack of parental support) and teachers view facilities as not extremely relevant in

the equation. Another possibility is that since these are well-seasoned teachers, (i.e., of 116 respondents only 39 have less than ten years of experience, thirty-eight have 10 to 18 and 39 have 19 or more years of experience), they may have other priorities than the condition of their school facility which impact their longevity in their school setting. It is also possible that many of these teachers have been in their schools for a long time and have just adjusted to the realities of that environment.

It is important to reflect upon the fact that all of the respondents were from schools classified as "rural distant." That classification means that these respondents are working in a school that was at least five and up to 25 miles from a city. This distance from a city may mean then that a large percent of the teachers in these schools live in their communities rather than commute there. This fact may mean that they have a stronger connection and commitment to their communities than other teachers who might teach in rural communities closer to central cities and who may commute to their worksite. This familiarity with and commitment to their community may partially explain why teachers report that the condition of the facility would not be a factor in their choice to leave or to stay and may also have some bearing on their responses in terms of satisfaction with their school facility. Finally, it may be possible that the facilities these teachers are working are in satisfactory condition and therefore, teachers find them satisfactory and therefore have no negative impact on their satisfaction levels and attitudes.

Recommendations for Further Research

The study was limited because, although teachers in all three types of rural school systems received surveys, responses came only from school systems in rural distant environments in a southern state. It is unknown why this happened. This reality and the findings from this study have implications for further research. One approach to dealing with this would

be to replicate the study by sending it to other types of rural settings again, but perhaps using a different approach, such as visiting schools, calling and speaking directly with principals about the study, and using incentives to get teacher responses. Another approach might be to conduct qualitative studies with teachers in these districts to determine their attitudes and levels of satisfaction with their facilities.

Another approach might be to conduct a similar study throughout the state and then examine the responses in categories of the rural and urban systems to see if the findings are consistent across the state or in different types of schools. This comparison would give the research community a better idea as to whether there are varied perspectives toward facilities and their impact on student learning and teacher success in varied parts of the state.

A critical issue here is that the researcher does not know the condition of the facilities of those who responded to the study. It could be of value to do a study in which respondents are first asked to rate the condition of their school and classroom facility along with acquiring data on their levels of satisfaction and attitudes with their facilities. Thus, one could determine more accurately whether teachers discount or consider the condition of their facility when giving feedback about issues such as satisfaction, attitudes, and willingness to remain in a school.

Another future study could be to conduct a statewide examination of teachers who have taught in at least two facilities and have them provide their assessment of the facilities in which they have worked based on the MCAP. This comparison would provide a better understanding of comparing multiple facilities from the same person across the same research tool. They could also be asked the degree to which the condition of the facility impacts their levels of satisfaction.

Another approach would be to replicate the study and identify the specific school and system from where the data were collected. This detail would provide a method to diagnose the actual condition of the school.

Since no base-line data exist in dealing with the condition of facilities in this state, it might be valuable to conduct such a study and then examine teacher satisfaction with facilities studies with high quality and low-quality facilities. An interesting approach to gathering data about school facilities throughout the state would be to utilize University professors in teacher preparation or educational leadership programs to assess school facilities throughout the state using a standard rubric. This additional information source could yield a large sample as these program faculty visit and interact with staff in a variety of facilities across the state.

It might also be of value to conduct a similar study in rural schools in other adjoining states to determine if there are concerns about school facilities and if the facilities in surrounding states have an impact on teachers staying or leaving school in which they are employed. Within this type of study, respondents would be able to identify common issues within facilities as well as issues that are specific to a particular state or region.

Another interesting research study might be to conduct an examination of administrators using the Commonwealth Assessment of the Physical Environment and Teachers using the MCAP related to school facilities and satisfaction level to see areas of convergence and divergence. This type of study would allow teachers and administrators to be surveyed or interviewed concurrently to determine feelings and attitudes related to the facilities in which they work.

Finally, a study could be conducted interviewing administrators within the school districts where the study was conducted and determine their satisfaction level with their school

facilities. This variable would provide another view of the relationship between facilities and satisfaction levels of those working in them as well as being able to determine some of the reasons for the condition of the facility.

Concluding Thoughts

This study sought to examine the degree to which teachers in rural schools in a Southern state were satisfied with their school and classroom facilities and the degree to which the condition of these facilities impacted their willingness to remain in their school system. The findings of the study were somewhat surprising as they differed from the findings of past research. Some reasons for these differences and recommendations for further research were proposed. It is hoped that the research has made an important contribution to the research literature and that the recommendations for the additional study will be of value to others interested in this topic and the research community in general.

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