

THE SELF-EFFICACY OF RURAL MIDDLE SCHOOL TEACHERS WORKING WITH
FAMILIES IN RELATION TO STUDENT ACHIEVEMENT

by

Sarah Evans

Liberty University

Presented in Partial Fulfillment
Of the Requirements for the Degree
Doctor of Education

Liberty University

2020

THE SELF-EFFICACY OF RURAL MIDDLE SCHOOL TEACHERS WORKING WITH
FAMILIES IN RELATION TO STUDENT ACHIEVEMENT

by Sarah Evans

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education

Liberty University, Lynchburg, VA

2020

APPROVED BY:

Katie Thompson, Ed.D., Committee Chair

Joseph Fontanella, Ed.D., Committee Member

ABSTRACT

Parental involvement in the education process is known to increase student achievement. Many barriers to parental involvement exist including the self-efficacy of teachers' working with families. The purpose of this correlational study is to determine if a relationship exists between the self-efficacy of rural middle school math and English teachers working with families and student achievement in their classroom. Working with Families Self-Efficacy Scales (WFSES) will be used to determine the self-efficacy of teachers working with families. Participants will be middle school teachers from five different middle schools in one rural school district on the Eastern Shore of Maryland. The questionnaire was completed online, and results remained confidential. Student achievement was assessed using Maryland Comprehensive Assessment Program (MCAP) standardized scores. This study used three different Pearson Product Moment correlations to determine if a relationship exists between the self-efficacy of teachers' working with families and student achievement overall in their classrooms, if a relationship exists between the self-efficacy of rural middle school math teachers working with families and student achievement in their math classrooms, and if a relationship exists between the self-efficacy of rural middle school English teachers working with families and student achievement in their English classrooms. There were three significant findings produced from the study. There was a statistically significant relationship between the self-efficacy of teachers working with families and student achievement overall, between the self-efficacy of math teachers working with families and student achievement, and the self-efficacy of English teachers working with families and student achievement.

Keywords: teacher self-efficacy, parental involvement, student achievement, parent teacher engagement, parent communication, barriers to parental involvement

Table of Contents

ABSTRACT.....	3
List of Tables	7
List of Figures.....	8
List of Abbreviations	9
CHAPTER ONE: INTRODUCTION.....	10
Overview.....	10
Background.....	11
Problem Statement	14
Purpose Statement.....	15
Significance of the Study	17
Research Questions.....	18
Definitions.....	18
CHAPTER TWO: LITERATURE REVIEW.....	21
Overview.....	21
Theoretical Framework.....	21
Achievement Goal Theory	22
Ecological Systems Theory.....	23
Self-Efficacy Theory.....	25
Related Literature.....	26
Student Backgrounds	27
Types of Parental Involvement	30
Measuring Student Achievement.....	36

Family-School Partnership.....	38
Barriers to Involvement	42
Teacher Self-Efficacy	46
Self-Efficacy of Teachers' Working with Families	48
Summary	50
CHAPTER THREE: METHODS	53
Overview.....	53
Design	53
Research Questions.....	55
Hypotheses	55
Participants and Setting.....	56
Instrumentation	58
Working with Families Self-Efficacy Scales	58
Maryland Comprehensive Assessment Program	61
Procedures.....	63
Data Analysis	65
CHAPTER FOUR: FINDINGS	69
Overview.....	69
Research Questions.....	69
Hypotheses	69
Descriptive Statistics.....	70
Results.....	71
Data Screening	71

Assumption Testing	73
Hypotheses	75
CHAPTER FIVE: CONCLUSIONS	79
Overview	79
Discussion	79
Implications	82
Limitations	83
Recommendations for Future Research	85
REFERENCES	86
APPENDICES	97
Appendix A	97
Appendix B	100
Appendix C	101
Appendix D	102
Appendix E	103
Appendix F	104
Appendix G	106

List of Tables

Table 1: Middle School Student Demographics	57
Table 2: District Staff Demographics	58
Table 3: Scale for WFSES	61
Table 4: RQ1 Descriptive Statistics	71
Table 5: RQ2 Descriptive Statistics	72
Table 6: RQ3 Descriptive Statistics	72
Table 7: RQ1 Pearson Product Moment Correlation Test	77
Table 8: RQ2 Pearson Product Moment Correlation Test	78
Table 9: RQ3 Pearson Product Moment Correlation Test	79

List of Figures

Figure 1: RQ1 Scatterplot with line of best fit.....	72
Figure 2: RQ2 Scatterplot with line of best fit.....	72
Figure 3: RQ3 Scatterplot with line of best fit.....	73
Figure 4: RQ1 Scatterplot with outliers removed and line of best fit.....	74
Figure 5: RQ2 Scatterplot with outliers removed and line of best fit.....	74
Figure 6: RQ3 Scatterplot with outliers removed and line of best fit.....	75

List of Abbreviations

Working with Families Self-Efficacy Scales (WFSES)

Maryland Comprehensive Assessment Program (MCAP)

Volunteer Initiative Program (VIP)

Statistical Package for the Social Sciences (SPSS)

Every Student Succeeds Act (ESSA)

Developmentally Appropriate Practice (DAP)

Association for Middle Level Education (AMLE)

CHAPTER ONE: INTRODUCTION

Overview

America's education system is one that encourages family, community, and school collaboration. Even though this collaboration has increased over the years, school achievement in rural schools is still a concern. As an example, a 2018 School Report Card for the state of Maryland, using the Maryland Comprehensive Assessment Program (MCAP), showed the average for all middle schools within the state was a 9.8 in academic achievement out of 20 with the highest score of 12.5 for a suburban school and lowest of 6.1 for an inner-city school. However, in a rural county in Maryland, the 2018 School Report Card earned only 9 points out of a total 20 points for academic achievement, measured by MCAP, not meeting the annual target for academic achievement. The state of Maryland defines academic achievement as the performance of students in a school that demonstrate the skills in their academic program (MSDE, 2018). The MCAP is comprised of math and English proficiency (MSDE, 2018). The points are determined by the percentage of students that achieve proficiency based on the school's average performance level (MSDE, 2018).

Since familial involvement is a contributing factor to student achievement (Castro et al., 2015), research was needed to determine if teachers are confident and capable of working with families to increase student achievement in rural areas. Three subscales that contribute to the total self-efficacy of teachers working with families, using the Working with Families Self-Efficacy Scales (WFSES), are family-school communication, teacher role with families, and family diversity. Once these are analyzed, schools can implement strategies, as necessary through family programs and professional development opportunities for teachers. This research

was beneficial for school leadership, educational institutions, and teachers to assist with increasing teacher self-efficacy to increase student achievement.

Chapter one provides background information regarding parental involvement and teacher self-efficacy research. A historical overview is provided to explain how students' backgrounds, environments, and parental involvement effect their academic achievement. The theories that explain the importance of students' backgrounds, parental involvement, and teacher self-efficacy are explained. Then, the chapter presents the problem statement and purpose of this study. The chapter concludes with an explanation of the significance of this research and definitions necessary to support the study.

Background

Approximately 50.8 million students attend public elementary, middle, and high schools across the United States (NCES, 2019). Public school students represent approximately 15% of the population of the United States (NCES, 2019). It is important that these students are successful to ensure an educated future generation. The education process is a group effort that consists of many stakeholders. Families, teachers, school administration, coaches, and the local community are responsible for the education of students in today's schools. Each stakeholder provides a piece of the education process by encouraging, cultivating positive attitude and determination, motivating, and providing solutions to learning problems (Robih et al., 2017). The environment students are in can greatly impact their lives (Alvi et al., 2018; Hampden-Thompson & Galindo, 2017). Student backgrounds, their current environments, and support from home are related to their academic achievement (Hampden-Thompson & Galindo, 2017; Hoffman et al., 2017; Wassell et al., 2017). Since families are a large part of students' backgrounds and vary greatly, support can also vary for each student.

Adolescent years are a formative age where self-worth directly correlates to student success (Hughes et al., 2015). These adolescent years often bring insecurities and a lack of self-confidence. Hughes et al.'s (2015) research on 527 at risk middle school students determined family support is needed more but is less abundant than in previous educational years. Familial involvement is directly related to adolescents' confidence level and their feeling of importance to their families (Caskey et al., 2009). Caskey et al.'s (2009) 40 years of research determined the importance of family involvement programs. A rural school in Texas established a Volunteer Initiative Program (VIP) to recruit family involvement in extracurricular activities at the school (Halsey, 2004). This program showed great success and increased family involvement overall and student achievement (Halsey, 2004).

Students come from various backgrounds resulting in many forms of support throughout their lives (Hill et al., 2016). These various backgrounds also result in many academic struggles for rural students based on restricted social networks (Evans et al., 2016). The restricted social networks of rural youth increase risks for substance abuse and bullying that result in decreased academic achievement (Evans et al., 2016). The families of rural youth experience economic conditions that impair their ability to provide resources making rural youth high risk (Hoffman et al., 2017). Many studies show that increased parental support results in higher achievement and better behavior (Gonida & Cortina, 2014; de Apodaca et al., 2015; Hill et al., 2016; Nunez et al., 2015; O'Sullivan et al., 2014). Parental interest and expectations of education also showed an increase in student achievement (Castro et al., 2015).

Teacher self-efficacy is defined as the belief teachers have in their ability to affect student achievement (Leonard & Maulding Green, 2018). Increased teacher self-efficacy produces more successful students (Schiefele & Schaffner, 2015). Many studies recognized a link between

teacher self-efficacy and increased student achievement (Schiefele & Schaffner, 2015; Zee & Koomen, 2016) and motivation to learn (Thoonen et al., 2011). In addition to higher teacher self-efficacies increasing student achievement, increased family engagement in children's education result in higher self-esteem and future education desires (Kreider et al., 2007). Relationships between families and schools also increase academic achievement in middle school students (Kreider et al., 2007). Academic achievement has been related to teacher self-efficacy (Schiefele & Schaffner, 2015) and parental involvement (Kreider et al., 2007); however, limited research is conducted on teachers' working with families self-efficacy and its relationship to student achievement in their classrooms. Hollander (2010) defines teachers' working with families self-efficacy as teachers' beliefs in their ability to involve parents in the learning process. Since increased parental support and high teacher self-efficacy positively affect student achievement, higher self-efficacy of teachers working with families could contribute to student achievement.

The concept of self-efficacy was derived by Bandura from the investigation of social cognitive theory (Sehgal et al., 2017). Bandura's (1977) self-efficacy theory describes the ability to produce desired effects in situations. In addition to self-efficacy, achievement goal theory and ecological systems theory assisted in the development of the theoretical framework for this study. Wolters (2004) explains the importance of positive relationships between students' perceptions of their environment and their ability to achieve and set goals. Achievement goal theory is defined as reasons students succeed in relation to their motivation and goals (Dweck, 1992; Wolters, 2004). In addition to students setting goals and their perceived environment, ecological systems theory incorporates the environment around students. Ecological systems

theory is the way a child's development is positively or negatively affected by their environment (Bronfenbrenner, 1979; Alvi et al., 2018).

Since families are a large part of students' environments and teacher self-efficacy positively affects student achievement, it is important that the self-efficacy of teachers working with families was studied more in depth. Since student achievement is affected by environment, family connection, and self-efficacy, additional research was needed regarding the relationship between the self-efficacy of teachers working with families and student achievement.

Problem Statement

Research on the importance of parental involvement has provided evidence of the importance of increasing parental involvement to positively impacting student achievement (Dotterer & Wehrspann, 2015; Gonida & Cortina, 2014). Parental involvement takes on various forms throughout children's lives depending on their background and age. Homework assistance, involvement at school, parental expectations, and parental support are the different forms of parental involvement that can increase student achievement (Dotterer & Wehrspann, 2015; Gonida & Cortina, 2014). Academic achievement has been positively affected by high teacher self-efficacy (Schiefele & Schaffner, 2015) and parental involvement (Dotterer & Wehrspann, 2015; Gonida & Cortina, 2014). Hoffman et al.'s (2017) study on rural middle school students determined a need for increased student achievement.

Additional research conducted by Schiefele and Schaffner (2015) focused on high teacher self-efficacy positively affecting student achievement. Gaining additional insight from teachers regarding their self-efficacy when working with families could provide additional information necessary to modify teacher curriculum and professional development. The self-efficacy of teachers' working with families and pre-service teacher education indicated additional courses

were needed to properly prepare future educators (Isikci, 2018). The self-efficacy of teachers working with families, as measured by Working with Families Self-Efficacy Scales (WFSES), consists of three subgroups: family-school communication, family diversity, and teacher role with families. Additional research is needed to determine if teacher working with families self-efficacy impacts student performance in their classrooms.

The problem is that while there are many qualitative and quantitative studies completed on parental involvement and teacher self-efficacy's effects on student achievement, there is little to no quantitative research done regarding the self-efficacy of teachers working with families and its effects on student achievement in their classrooms. The study used the achievement goal theory, ecological systems theory, and self-efficacy theory as the framework to better understand the relationship between the self-efficacy of teachers working with families, as measured by WFSES, and student achievement overall, specifically in math and English classrooms, reported by Maryland Comprehensive Assessment Program (MCAP). A gap existed in the literature regarding the self-efficacy of teachers working with families to determine its effects on student achievement in rural middle schools. Overall, the problem is a lack of research on the self-efficacy of rural middle school teachers working with families and the effects on student achievement in their classrooms.

Purpose Statement

The purpose of this correlational study is to determine if a relationship exists between the self-efficacy of rural middle school teachers working with families and student achievement in their classrooms. The study will also determine if relationships exist between the self-efficacy of rural math and English middle school teachers working with families and student achievement in math and English middle school classrooms. The self-efficacy of teachers working with families

is defined as teachers' beliefs in their ability to involve families in the learning process (Hollander, 2010). This information was measured using the Working with Families Self-Efficacy Scales (WFSES). The predictor variables used in the study are overall self-efficacy of teachers working with families, the self-efficacy of math teachers' working with families, and the self-efficacy of English teachers' working with families measured using the WFSES. The criterion variables are overall student achievement in each participating teachers' classroom, math student achievement, and English student achievement. Student achievement is the cumulative knowledge and experiences gained from education (Rivkin et al., 2005). Student achievement information is measured using the Maryland Comprehensive Assessment Program (MCAP). The self-efficacy of teachers' working with families is defined as the confidence and knowledge teachers have regarding integrating families into the education process (Hollander, 2010; Isikci, 2018). Student achievement is defined as the achievement of goals, comprehension of knowledge, and scores on standardized testing (Bui & Rush, 2016; Murray, et al., 2014). Math student achievement is defined as the achievement of goals, comprehension of knowledge, and scores on math standardized testing. English student achievement is defined as the achievement of goals, comprehension of knowledge, and scores on English standardized testing. The research method for this study was a quantitative, non-experimental, correlational study that used survey data to determine if there is a relationship between the self-efficacy of teachers' working with families and student achievement. Math and English teachers that are employed at rural middle schools on the Eastern Shore of Maryland were elicited to participate in the study using the WFSES to measure the self-efficacy of teachers' working with families. Student achievement scores on Maryland State standardized tests, MCAP, were used to calculate the

average classroom score for each math and English teacher to provide information regarding student achievement for all students in each participating teacher's classroom.

The participants for this study were drawn from a convenience sample of middle school teachers employed at a rural Maryland school district during the spring semester of the 2019-2020 school year. Teachers were asked to complete the Working with Families Self-Efficacy Scales questionnaire (Appendix A) using an electronic survey. Math and English teachers are defined as full-time certified professionals teaching math or English and meeting all requirements for certification in the state of Maryland. From their responses, the researcher determined if the self-efficacy of teachers working with families scores can predict student achievement in each individual math and English teachers' classroom.

Significance of the Study

Teacher self-efficacy has been studied in various ways. However, these studies focused on self-efficacy for teachers and did not classify various types of self-efficacy (Alacam & Olgan, 2017). Garcia (2014) determined a strong relationship between teacher self-efficacy and parent involvement practices. These studies brought significant positive influence into the field of education resulting in student achievement, very few studied self-efficacy of teachers working with families. Cobanoglu et al.'s (2018) study suggested additional information was needed to understand teacher efficacy beliefs and how those beliefs influence their practices within the classroom. This study provided additional information regarding the self-efficacy of teachers' working with families and its impact on student achievement within their classrooms.

The significance of the study is that the results can be used to inform pre-service teacher programs of the importance of educating preservice teachers on how to work with parents and increasing their self-efficacy when working with families. Additionally, the study can be used to

determine the amount of professional development that needs to be dedicated to learning to work with parents and increasing teachers' knowledge of culture and methods to incorporate parents in the learning process.

This study supported previous research conducted by Isikci (2019) regarding the need for additional focus from universities regarding the emphasis placed on the self-efficacy of teachers when working with families. Additionally, this study provided teachers with further information regarding the importance of understanding their students' families and incorporating them into the education process.

Research Questions

RQ1: Is there a statistically significant relationship between rural middle school teachers' working with families self-efficacy scores, as measured by WFSES, and overall students achievement in their classes, as reported by MCAP?

RQ2: Is there a statistically significant relationship between rural middle school Math teachers' working with families self-efficacy scores, as measured by WFSES, and overall students achievement in their classes, as reported by MCAP?

RQ3: Is there a statistically significant relationship between rural middle school English teachers' working with families self-efficacy scores, as measured by WFSES, and overall students achievement in their classes, as reported by MCAP?

Definitions

1. *Family Diversity* – acceptance and understanding of cultures, socio-economic status, and various lifestyles (Wassell et al., 2017). This information is measured using the WFSES subscale and rated using numerical data that ranges from 0 (low self-efficacy family diversity) to 900 (high self-efficacy family diversity).

2. *Family-School Communication* – connection between families and schools regarding the transfer of information (Hoffman et al., 2017). This information is measured using the WFSES subscale and rated using numerical data that ranges from 0 (low self-efficacy family-school communication) to 900 (high self-efficacy family-school communication).
3. *Overall Student Achievement* – cumulative knowledge and experiences gained from education (Rivkin et al., 2005). (Criterion variable) This information is measured using the Maryland state standardized tests in math and English. For the purpose of this study MCAP math and English numeric results will be used. Overall performance for the MCAP math and English assessments range from 650 to 850.
4. *Self-Efficacy* – belief in the ability to produce an outcome (Bandura, 1977).
5. *Teacher Self-Efficacy* – teachers’ beliefs in their capability as a teacher (Zee & Koomen, 2016).
6. *Teacher Role with Families* – development of professional relationships that includes collaboration and contribution from teachers and families regarding the education process (O’Donnell & Kirkner, 2014). This information is measured using the WFSES subscale and rated using numerical data that ranges from 0 (low self-efficacy teacher role with families) to 1300 (high self-efficacy teacher role with families).
7. *Self-Efficacy of Teachers Working with Families* – teachers’ beliefs in their ability to involve families in the learning process (Hollander, 2010). (Predictor variable) This information is measured using the Working with Families Self-Efficacy Scales (WFSES) and rated using numerical data that ranges from 0 to 2700 then calculated

into a percentage that ranges from 0% (Low Self-Efficacy) to 100% (Proficient Self-Efficacy).

CHAPTER TWO: LITERATURE REVIEW

Overview

A review of literature was conducted to investigate the relationship between parental involvement at home, in schools, and its effects on student achievement, including the barriers that inhibit involvement. A focus on the current literature relating to this study will be included in this chapter. The theories that establish the framework for student achievement based on their environments are discussed at the beginning of the chapter. Next, a synthesis of the literature obtained from the review of student backgrounds, types of parental involvement, the effects of involvement on student achievement, family-school partnerships, teacher self-efficacy, and the barriers to parental involvement. Finally, gaps in the literature are discussed to provide an area of need for further research regarding parental involvement and student achievement. Gaps in the literature recognize the possible need for teachers' pre-service training and in-service training to establish relationships with families and the need to improve the self-efficacy of teachers' working with families to increase family involvement in the education process leading to student achievement.

Theoretical Framework

This theoretical framework provides an explanation of how the achievement goal theory, the ecological system theory, and self-efficacy theory relate to self-efficacy of teachers' working with families, parental involvement, and student achievement in adolescents. An explanation of the problem associated with student achievement can be related to the inability to set goals due to a lack of parental involvement (Wolters, 2004). Dweck (1992) stated goals can be modified or changed based on a person's environment. Positive environments create an atmosphere that breeds positive goals and achievement. Bronfenbrenner (1979) established this relationship with

the ecological systems theory when he discussed the importance of the relationship between school and home with children's ability to learn to read. In addition to modifying children's environments to achieve success, teachers must be confident in their abilities to connect with families. Bandura's (1977) investigation regarding self-efficacy states teachers become frustrated with they feel untrained when working in unfamiliar situations.

Achievement Goal Theory

Wolters (2004) explained the importance of a positive relationship between students' perceptions of their learning environment and their ability to set and achieve goals. Similarly, a person's situation can foster the adaption of goals and desire to achieve them (Read & Miller, 1989). Achievement goal theory can be defined as reasons for student achievement in relation to their personal motivation and goals that are affected by their surroundings (Dweck, 1992; Wolters, 2004). The two levels of motivation Wolters (2004) associates with achievement goal theory are student-level and classroom-level. Both levels of motivation are affected by their environment. The environment differs for each level. Student-level motivation is inspiration provided by peers; whereas, classroom-level motivation is inspiration provided by teachers and the classroom environment (Wolters, 2004). Teachers play a significant role in students' desires to develop goals and perseverance to achieve them (Wolters, 2004).

Wolters (2004) only discussed two levels of motivation but Dweck (1992) discussed three different levels of motivation – person to person, goal contexts, and internal motivation. Both Wolters (2004) and Dweck (1992) realized the influence people have on others' goals. Dweck (1992) emphasized the importance of internal motivation as well. The process of creating goals internally is influenced by someone's environment (Dweck, 1992; Wolters, 2004).

Both researchers realized the influence the surrounding environment can have on someone's personal goals.

Achievement goal theory is important when thinking about the relationship to teachers and students' motivation and dedication to achieve educational goals. Wolters (2004) and Dweck (1992) discuss the influence people and environments have on goals. Relationships between families and schools create external motivation factors that can determine if students meet their academic achievement goals. This study will expand the achievement goal theory by including the development of relationships between families and teachers and how those relationships may positively impact students' educational goals.

Ecological Systems Theory

Bronfenbrenner's (1979) ecological systems theory is the way a child's development can be positively or negatively affected by their surrounding environment. Alvi et al. (2018) modernized Bronfenbrenner's (1979) ecological systems theory to explain the effect global influences have on a person's religion, family, and education practices. Bronfenbrenner knew in 1979 that his thought process was contrary to most at that time. He understood that to advance human development research, there needed to be a public policy on science. The knowledge of public policy informs researchers about the environment (Bronfenbrenner, 1979). Ecological systems theory focuses on the content regarding perceptions, desires, fears, thoughts, and knowledge (Bronfenbrenner, 1979). A student's mesosystem consists of the classroom, family, peer group, and religious setting (Landon, 2014). Students' exosystems consist of media, the school system, and community (Landon, 2014). There are many factors that influence developing children, especially those from rural communities (Hoffman et al., 2017). Some children experience life events that drastically change their environments such as loss of housing

and lack of parental monitoring (Hoffman et al., 2017). When rural children face life changing events, they are 5% more likely to drop out of school (Hoffman et al., 2017). Decreased tax dollars in rural areas create schools with less funding than urban and suburban schools (Hoffman et al., 2017). Less funding results in fewer resources to obtain highly qualified teachers (Hoffman et al., 2017) resulting in weaker exosystems for rural students.

Once Bronfenbrenner pioneered the ecological systems theory, Hampden-Thompson and Galindo (2017) continued studying ecological systems theory and agreed that families are an essential part of adolescents' lives due to their nested system of influence. Hampden-Thompson & Galindo's (2017) nested system of influence mirrors Bronfenbrenner's ecological systems theory composed of four systems that contribute to human development. The contributions from environments change people's behaviors and their interactions with the environment (Bronfenbrenner, 1979). Hoffman et al (2017) described the negative effects rural environments have on students such as decreased access to extracurricular activities, mental health problems, and stress related to living in poverty. These changes can go on to influence future generations' lives as well (Bronfenbrenner, 1979). Hampden-Thompson and Galindo's (2017) longitudinal study on over 10,000 students determined that the mesosystem and exosystem had significant impacts on student achievement. Also, Hampden-Thompson and Galindo determined family involvement along with positive school-family relationships were predictors of achievement.

Bronfenbrenner's ecological systems theory emphasizes the importance of the environment's influence on students' achievements (Bronfenbrenner, 1979). Students' environments throughout life are influenced by their mesosystems, microsystems, exosystems, and macrosystems (Bronfenbrenner, 1979) and directly relate to the importance of developing positive and encouraging environments between families, schools, and the community to ensure

students attain academic achievement in rural areas. This study will expand Bronfenbrenner's ecological systems theory by explaining the impact all four systems have on student achievement when the systems work together.

Self-Efficacy Theory

Bandura's (1977) self-efficacy theory determined four sources that contribute to efficacy: performance accomplishments, experience, persuasion, and physiological states. These four sources provide information that affect self-efficacy. Bandura's theory discussed behavioral change that occurs when self-efficacy is influenced by the environment surrounding the person. Encouragement, observation, and accomplishments positively increase self-efficacy (Bandura, 1977). Continued opportunities to succeed and preparation for the upcoming tasks increase self-efficacy in that task (Bandura, 1977). Additional experience practicing the skill leads to increased self-efficacy (Bandura, 1977).

Robih's (2017) research on 169 students continued Bandura's research regarding motivation to learn. Teachers' self-efficacy is developed throughout their education: from experiences, pre-service education, and professional development (Robih, 2017). Robih explains self-efficacy as the belief in oneself to perform. This belief leads to motivation and inspiration to learn and accomplish tasks (Robih, 2017). Additional focus is placed on the significance of parents' and teachers' roles in encouraging self-efficacy in students to increase motivation to learn (Robih, 2017). Teachers must believe in themselves and their ability to increase student achievement (Robih, 2017). Robih (2017) concludes the study stating "teachers are expected to provide regular training to foster students' confidence in the face of duties and to cultivate the attitude of not giving up, the teacher should give the experience of successful people to motivate students" (p 7). Robih went on to state the role of teachers in motivating children at home is also

needed by involving parents and encouraging them to provide their children with guidance and motivation. Including parents in the education process of students in the form of motivation and guidance at home, increases teachers' self-efficacy (Robih, 2017).

Bandura (1977) shows significant importance of self-efficacy due to its effects on encouragement, change, perseverance, and motivation and its direct relation to the importance of teacher self-efficacy to encourage academic achievement for students. Teachers are more motivated to encourage students to learn and persevere through difficult learning strategies when they maintain high self-efficacy (Robih, 2017). Establishing relationships with families and maintaining a high self-efficacy for teachers may ensure they are comfortable and confident while collaborating with diverse families. High teacher self-efficacy increases student achievement (Schiefele & Schaffner, 2015). This research study will extend Bandura's self-efficacy theory by expanding the knowledge of self-efficacy in general and working with families self-efficacy.

Related Literature

Common themes throughout the research were student backgrounds, types of parental involvement, methods for measuring student achievement, teacher self-efficacy, family-school partnership, and barriers to involvement. Students are greatly impacted by their environment (Alvi et al., 2018; Bronfenbrenner, 1979; Hampden-Thompson & Galindo, 2017). This impact can affect their performance in school and their future (Hampden-Thompson & Galindo, 2017). Students' background and current environments are related to their academic achievement (Bui & Rush, 2016). Cultivating positive learning environments that are reinforced at home, increases academic achievement (Bui & Rush, 2016).

Student Backgrounds

Students' backgrounds shape their childhood as they enter adolescence (Alvi et al., 2018; Hampden-Thompson & Galindo, 2017). Achievement goal theory and ecological systems theory describe the importance of positive environments to generate successful students (Wolters, 2004; Bronfenbrenner, 1979). Chiu and Xihua's (2008) study including over 100,000 fifteen-year-old students from 21 countries indicated that students were more successful when they came from two parent families with no or few siblings and no additional family members living in the household. Interaction with the environment around them alters their thoughts, views, and opinions (Alvi et al., 2018; Bronfenbrenner, 1979; Hampden-Thompson & Galindo, 2017). Both rural and urban students face varying levels of poverty that play a significant role in their education (Hoffman et al., 2017; O'Sullivan et al., 2014; Wang et al., 2014; Wassell et al., 2017). Special education students face barriers associated with inclusion and receiving services in a resource room versus self-contained classrooms and the amount of attention they receive in the classroom (de Apodaca et al., 2015). Ethnically diverse and first-generation college students do not receive the family support necessary at home due to a lack of parental knowledge (Bui & Rush, 2016; Hill et al., 2016). These factors must be considered when researching the connections of family involvement and student achievement.

Environmental location. Urban and rural students have challenges of their own before entering a classroom. These challenges can increase the achievement gap if parental influence is not increased where the need is shown (Wang et al., 2014). These students also face challenges of a lack of resources due to low-income schools (Wang et al., 2014). In addition to a lack of resources at their schools, they face households with limited education experience or negative

educational experiences in the past (Wang et al., 2014). Family members' negative experiences with schools gives students negative thoughts regarding school (Wang et al., 2014).

Urban students. Dotterer and Wehrspann (2015) and Wassell et al. (2017) determined when additional parental involvement was provided for adolescents it resulted in an increase in students' self-esteem regarding school. Gonida and Cortina (2014) determined students' self-efficacy is positively correlated with parental engagement on 282 students and families from urban schools. Dotterer and Wehrspann's (2015) found a decrease in behavior issues when parental support increased in urban schools. Ashim and Sahin in 2018 looked further into the effects of parental involvement on mathematics achievement in secondary school students. This study explored relationships regarding mathematics achievement and parental involvement on 500 students in urban schools (Ashim & Sahin, 2018). Ashim and Sahin (2018) determined that a significant relationship exists between mathematics achievement and the location of the school.

Rural students. Ashim and Sahin (2018) included 400 students from specifically rural areas in a study and determined a significant relationship exists between mathematics achievement and school location. Increased mathematics achievement was a result of openly communicating the importance of mathematics education (Ashim & Sahin, 2018). Open communication with families from rural schools resulted in higher student achievement (Hoffman et al., 2017). Another benefit of open communication in rural schools is an increase in student's self-esteem and self-efficacy (de Apodaca et al., 2016; Dotter & Wehrspann, 2015; Gonida & Cortina, 2014; Hoffman et al., 2017; Lam & Ducreux, 2013). Griffin and Galassi's (2010) study of 29 families from a rural middle school showed a lack of knowledge regarding the resources available for low achieving students. Parents labeled themselves as unable to assist with the education process since they were not knowledgeable enough to contribute (Griffin &

Galassi, 2010) resulting in a lack of involvement from many parents. A lack of parental involvement in rural students resulted in lower academic achievement because students focused on the social aspect of school instead of the academics (Griffin & Galassi, 2010).

Special education students. Middle school students receiving special education services were part of a study conducted by de Apodaca et al. (2015) that determined resource room students' grades were not positively correlated with an increase in parental support. Special education students, educated in a resource room, were the only student background group researched that did not show an increase in achievement in any area when parental support increased (de Apodaca et al., 2015). However, since 98% of families agreed to be a part of the study, families were already fully integrated into the learning process of their children prior to conducting the study (de Apodaca et al., 2015).

Ethnically diverse. Ethnically diverse students can be at a disadvantage in school when their families are not active participants in their education (Herges et al., 2017; O'Donnell & Kirkner, 2014). The establishment of family-school relationships can close the gap from the impact of poverty on achievement while increasing social skills and good work habits (O'Donnell & Kirkner, 2014). Intrinsic motivation is cultivated in ethnically diverse students from support within the home (Hill et al., 2016; Herges et al., 2017; Wassell et al., 2017). Herges et al.'s (2017) stated significantly high correlations in academic achievement in mathematics and intrinsic motivation from ethnically diverse adolescent students.

First generation college students. First generation college students are defined as adolescents whose families did not attend college (O'Sullivan et al., 2014). These students displayed an increase in academic achievement when provided with parental support (O'Sullivan et al., 2014). However, according to Bui and Rush (2016) and O'Sullivan et al. (2014) families

of first-generation college students are hesitant to provide advice and support due to their own perceived lack of knowledge. Their inexperience with college makes it difficult for them to promote and explain college to their children (Bui & Rush, 2016; O'Sullivan et al., 2014). They lack the confidence to encourage their children to further their education (Bui & Rush, 2016; O'Sullivan et al., 2014). This trend is also popular for rural families because many are less educated and are not confident in their abilities to assist their children (Griffin & Galassi, 2010).

Types of Parental Involvement

Parental involvement is a topic that is multi-dimensional and must be broken down into different types of support. Parental involvement changes as students age, resulting in many different methods to achieve student achievement (Gonida & Cortina, 2014). Homework assistance, involvement at school, parental expectations, and parental support are different forms of parental involvement that encourage achievement with most populations of students (Gonida & Cortina, 2014; de Apodaca et al., 2015; Hill et al., 2016; O'Sullivan et al., 2014).

Homework assistance. Gonida & Cortina (2014), de Apodaca et al. (2015), Hill et al. (2016), and O'Sullivan et al. (2014) discussed two types of homework assistance: controlling the homework environment and direct homework involvement. Student achievement was evident in both types of assistance (Gonida & Cortina, 2014; de Apodaca et al., 2015; Hill et al., 2016; O'Sullivan et al., 2014). Gonida and Cortina's (2014) research consisted of 282 children in fifth and eighth grades and one family member per child for a total of 564 participants from urban economically diverse school districts. Family members completed surveys to determine the different types of support they provided to their children: autonomy support, parent control, interference, cognitive engagement, parent goals, and parent perceptions about children's academic efficacy (Gonida & Cortina, 2014). Significant differences were evident in student

achievement based on the type of family support provided (Gonida & Cortina, 2014). Nunez et al.'s (2015) study included 1683 urban students and determined positive student behavior regarding the completion of homework assignments when families were involved in the process.

Controlling the homework environment. Creating a homework environment, questioning the requirements, encouraging completion, and evaluating to determine completeness and correctness of homework are methods of controlling the homework environment (O'Sullivan et al., 2014). Students that were provided with home atmospheres conducive to completing homework showed improvement in mathematics achievement (O'Sullivan et al., 2014). Herges et al. (2017) reported higher academic achievement with positive attitudes toward mathematics. O'Sullivan et al. found families of low socioeconomic status more comfortable providing support and encouragement instead of direct homework involvement.

Direct homework involvement. Direct homework involvement is defined as assisting students with completing homework assignments (Gonida & Cortina, 2014; de Apodaca et al., 2015; Hill et al., 2016; O'Sullivan et al., 2014). Families take on a larger role in completing homework assignments with direct homework involvement (de Apodaca et al., 2015). de Apodaca et al.'s (2015) determined when families control homework, it was less beneficial than supporting homework. However, a small improvement in student academic achievement was evident when families assisted with homework (O'Sullivan et al., 2014).

Involvement at school. Parental involvement at school is defined as direct physical assistance within the school (Bui & Rush, 2016; Wehrspann et al., 2016). It is classified into two categories – classroom assistance and extracurricular activities assistance (Bui & Rush, 2016; Wang et al., 2014; Wehrspann et al., 2016). Both forms of involvement are beneficial to

students (Bui & Rush, 2016; Wehrspann et al., 2016) but change as students age (Wang et al., 2014; Wehrspann et al., 2016). As students age in adolescence, parents are less involved physically in their children's schools and start providing more oversight (Hampden-Thompson & Galindo, 2017; Wang et al., 2014; Wehrspann et al., 2016). However, positive school-family relationships and involvement remains a predictor of success (Hampden-Thompson & Galindo, 2017). Hampden-Thompson and Galindo (2017) performed an analysis on family-school involvement and school satisfaction using over 10,000 students in England to conclude the importance of a combination of a strong family-school relationship coupled with school satisfaction to foster academic success. The study measured factors that affect the transition from middle and secondary school for students aged 13 and 14 to determine if academic achievement was affected based on parental satisfaction with school and family-school relationships (Hampden-Thompson & Galindo, 2017).

Classroom assistance. Active participation within the classroom from families decreases as students age (Wang et al., 2014; Wehrspann et al., 2016). Wehrspann et al. (2016) included 150 adolescents in grades six through eight and determined there were no associations between home-based involvement and motivation to succeed in school. Positive associations were noted between academic socialization and academic achievement (Wehrspann et al., 2016). Wehrspann et al. (2016) defined academic socialization as communication from the family regarding the importance of education. Wehrspann et al. (2016) determined parental support and expectations are more impactful for middle school students than physical involvement in the school. However, students with increased parent participation within the school had a higher likelihood of attending college (Bui & Rush, 2016).

Extracurricular activities assistance. Activities outside of the classroom such as fundraisers, behavior incentive rewards, and field trips are classified as extracurricular activities (Halsey, 2014). Halsey (2004) summarized an increase in parental communication when families assisted with extracurricular activities at the school. Bui and Rush (2016) concluded that when families are involved within the school, they are more comfortable with the environment and discussing expectations with their children. Perkins et al. (2016) determined an increase in school bonding and outreach to families when they were involved with extracurricular activities at school. When 607 adolescents and 1,071 parents participated in Perkins et al.'s study regarding the family-school relationship for students in sixth grade, it was determined that the relationship directly impacted students' academic achievement in eighth grade. This study confirmed the need for families and schools to develop relationships and for families to become involved in activities at the school to encourage academic achievement for all students regardless of their background (Perkins et al., 2016).

Parental expectations. Parental expectations are significantly impacted by the standards set within the home (O'Sullivan et al., 2014). The families of 79 students in seventh and eighth grades from an urban school with all low socioeconomic status had low confidence in their abilities to assist students with homework or participate in classroom activities (O'Sullivan et al.'s, 2014). The families' expectations were for their children to be successful (O'Sullivan et al., 2014). These 79 families ensured students had structure, encouragement, and high expectations for success (O'Sullivan et al., 2014). The high expectations resulted in academic achievement for students (O'Sullivan et al., 2014). de Apodaca et al. (2015) continued to investigate an economically and ethnically diverse school using 82 participants from seventh and eighth grades. Parent questionnaires were required to determine the level of involvement parents provided to

their middle school students (de Apodaca et al., 2015). Expectations of achievement set by families had the greatest increase in academic achievement (de Apodaca et al., 2015).

Communicating high expectations regarding school is important to ensure students succeed (de Apodaca et al., 2015).

However, Bui and Rush (2016) stated, “among all the dimensions of parental involvement, parents’ level of education had the biggest effect on educational expectations” (p 485). When families link educational achievement to future success, students are more responsive (Bui & Rush, 2016; de Apodaca et al., 2015; Dotterer & Wehrspann, 2015; Gonida & Cortina, 2014; Herges et al., 2017; Hill et al., 2016). Student achievement is positively affected when families set high expectations at home (Bui & Rush, 2016; de Apodaca et al., 2015; Dotterer & Wehrspann, 2015; Gonida & Cortina, 2014; Herges et al., 2017; Hill et al., 2016).

High expectations and positive attitudes were significant contributors to academic achievement in Ashim and Sahin’s (2018) study of 900 students from 30 different secondary schools, 400 of them from rural areas. Ashim’s and Sahin (2018) determined “parents’ attitude towards mathematics is a significant factor related to mathematics achievement of school students” (p 280). Ashim and Sahin aligned with Wang et al.’s prior study conducted in 2014 on 23 public schools in Maryland consisting of 1,452 families with students in seventh, ninth, and 11th grades. Wang et al. used grade point averages to determine academic achievement and the Family Management Study to determine the levels of parental involvement provided for students. Wang et al. (2014) determined more consistent academic achievement was obtained when families set high expectations and provided structure at home. Structure at home was defined as enforcing family rules and setting expectations for students (Wang et al., 2014).

Family support. In addition to an increase in self-esteem, students' academic achievement increased when families kept an open line of communication regarding school and provided guidance for students when goal setting (de Apodaca et al., 2015; Dotter & Wehrspann, 2015; Gonida & Cortina, 2014; Hoffman et al., 2017). An additional important finding from Dotterer and Wehrspann (2015) included 108 students from an urban school and determined fewer behavior problems in school when parental support increased. Two types of parental support were classified as the importance families place on education and the education level of parents (Dotterer & Wehrspann, 2015; O'Sullivan et al., 2014; Wang et al., 2014; Wassell et al., 2017). Both types of support are essential to students' academic achievement (Dotterer & Wehrspann, 2015; O'Sullivan et al., 2014; Wang et al., 2014; Wassell et al., 2017).

The importance placed by the family. Communication between families and schools was determined as the most statistically significant involvement provided by families (Ashim & Sahin, 2018). Perkins et al. (2016) explained how familial communication and importance must be presented to students using open dialogue to ensure the importance is understood and received by students. Familial importance can be negatively impacted by the family member's prior experiences in school (Murray et al., 2014). One major limitation of student achievement discussed by Murray et al. (2014) that included 513 families in urban middle schools in Maryland found adolescents' negative opinions regarding school was derived from their families' negative attitudes and lack of confidence in school from their prior experiences. Most students with negative impressions of school resulted from negative support from home (Murray et al., 2014). Semi-structured interviews were used and transcribed to collect data regarding family motivational beliefs, family perceptions of invitations from school or child for participation and collaboration, and perceived life context of education from family (Murray et

al., 2014). Parents in Murray et al.'s study responded highly to comments students provided regarding problems they were having in school. One grandmother reported the desire to speak to the teacher when the student had concerns to determine if the interactions would differ (Murray, 2014). Murray et al.'s (2014) study determined there was a lack of invitations from teachers for families to be involved in their students' education process, unless behavior problems were a concern. Casual involvement or assistance to collaborate were very rare (Murray et al, 2014).

Familial education level. Family support and expectations are largely impacted by familial education level (Bui & Rush, 2016). Families without college experience are less likely to encourage college attendance or assist with homework due to a lack of knowledge and confidence (Bui & Rush, 2016; Hill et al., 2016; O'Sullivan et al., 2014). Specifically, Latino families want to be involved in their children's education but find it difficult due to a lack of knowledge of the education system (O'Donnell & Kirkner, 2014). Erol and Turhan (2018) discovered a statistically significant difference in school engagement based on familial education level.

Measuring Student Achievement

Student achievement is impacted by parental involvement that is multi-dimensional (Gonida & Cortina, 2014; de Apodaca et al., 2015; Hill et al., 2016; O'Sullivan et al., 2014). Student achievement associated with parental involvement can be measured through self-reporting, school reported procedures, and by testing (Gonida & Cortina, 2014; de Apodaca et al., 2015; Hill et al., 2016; O'Sullivan et al., 2014). Standardized test scores displayed more consistent results and connection to parental involvement programs than non-standardized measures, grade point average (GPA) and ratings provided from teachers (Jeynes, 2012).

Reporting procedures. Two types of reporting procedures are self-reporting and the school or district reported grades. Both methods assist in determining students' progress based on parental involvement (Gonida & Cortina, 2014; de Apodaca et al., 2015; Hill et al., 2016; O'Sullivan et al., 2014). Self-reporting occurs when students provide their grades when data is being collected (Gonida & Cortina, 2014). School or district reported grades are determined by collecting data from the school or district after families release the grades using a waiver (Hill et al., 2016). Testing takes on two different forms as well. Standardized testing can be obtained from national studies while additional testing can also be performed (O'Sullivan et al., 2014).

Self-reporting. Self-reported grades are obtained using surveys, focus groups, and questionnaires (Bui & Rush, 2016; Herges et al., 2017; Hoffman et al., 2017). Since students can self-report inaccurate grades, self-reporting is not the most accurate method of measuring student achievement (Bui & Rush, 2016; Herges et al., 2017; Hoffman et al., 2017). However, self-reporting does allow for frequent evaluation of progress (Bui & Rush, 2016; Herges et al., 2017; Hoffman et al., 2017).

School or district reported. Since self-reported grades are not an accurate method of measuring student achievement, many researchers use school reported grades (Dotterer & Wehrspann, 2015; Gonida & Cortina, 2014; O'Sullivan et al., 2014; Wang et al., 2014). School records can be difficult to obtain and must ensure confidentiality once they are obtained (Dotterer & Wehrspann, 2015; Gonida & Cortina, 2014; O'Sullivan et al., 2014; Wang et al., 2014). Grade point averages and mathematics scores are easily analyzed using descriptive statistics, correlations, and statistical analyses to determine the effectiveness of parental involvement on student achievement (Dotterer & Wehrspann, 2015; Gonida & Cortina, 2014; O'Sullivan et al., 2014; Wang et al., 2014).

Testing. Standardized testing and testing current achievement are excellent methods to determine where students are in their education journey (Bui & Rush, 2016; Herges et al., 2017). However, many students' performance is altered when being tested versus typical day to day evaluation of grades (Bui & Rush, 2016). One reason is because test performance varies due to test anxiety (Bui & Rush, 2016). Standardized testing is beneficial as a control variable to create a baseline for research (Bui & Rush, 2016). Herges et al. (2017) and Hoffman et al. (2017) reported the need to include standardized testing in their future research on parental involvement and student achievement.

Family-School Partnership

The state of Maryland requires all educators to involve families in the education process (MSDE, 2016). A Family Engagement Framework was first established in 2001 due to the increased research that resulted in higher student achievement when families are involved in the education process (MSDE, 2016). The Family Engagement Framework established a team of members throughout the state of Maryland to “influence intentional thinking and actions necessary to implement family engagement policies and practices at the state, district, and school levels” (MSDE, 2016, p 5). The framework provides structure for teachers and parents to ensure educators have the tools necessary to be successful at incorporating families in the education process. Maryland State Department of Education (2016) follows the following family engagement principles:

I. Welcoming All Families

- Including all students and families
- Engaging families is expected and well received
- Being culturally responsive

- Identifying and removing barriers
- Cultivating a positive climate

Creating an environment where all stakeholders – parents, students, and school staff – feel valued and connected is key to welcoming all families. School leadership, teachers, and staff are instrumental in fostering positive relationships between the school and families to build and sustain a welcoming school environment. Welcoming all families involves a mindset that values cultural proficiency, the importance of diversity, and individual abilities. Understanding and respecting diverse family dynamics and cultures represented in the school community helps to identify and remove barriers and provides opportunities for meaningful engagement.

II. *Encouraging Partnerships Among Schools, Families, and Communities*

- Creating opportunities for engaging families and communities
- Sharing awareness of child/adolescent development and transition
- Ensuring pathways to educational excellence

Families, schools, and communities are partners in education. Together they make educational decisions for children; are represented on state, district, and school-level committees regarding academic policies and programs; create and share an understanding of child/adolescent development; and advocate for the success of all children. Schools and community members work collaboratively, connecting students, families and staff to expand learning opportunities and community services. Through shared decision making, advocacy, and community

engagement, schools, families, and communities share the responsibility to strengthen schools and positively support student success.

III. Supporting Student Learning and Student Success

- Enabling shared decision-making
- Ensuring all families have opportunities to advocate for their own and other children
- Supporting transitions throughout the student's educational career
- Using data to inform decisions
- Engaging community support

Family, school, and community engagement in education is a key lever for student learning and student success. Schools must be intentional and culturally responsive in their efforts to engage all families. Clearly defined, well-communicated goals and strategies help families and teachers work together to ensure that all students succeed. This includes preparing families as students transition throughout their school age years, to support students' academic, social, emotional, and physical needs. When families are equal partners, there is increased student academic performance, better attendance, and a more successful pathway to college- and career-readiness.

IV. Building Capacity Among School Stakeholders

- Developing policies and practices that support family engagement
- Providing training and resources to school staff and families to ensure instructional equity

Engaging families as partners in education creates essential relationships that can produce success for students. Ongoing professional development is critical at the state, district, and school levels to provide strategies to assist educators to effectively engage families as well as to build capacity of families to become full partners in education.

V. Promoting Effective School-Family Communication

- Ensuring targeted outreach
- Encouraging regular and meaningful two-way communication

Clear, on-going, two-way communication is essential for successful school-home partnerships. Schools must take into consideration multiple ways of communication. Communication should be in formats with parent-friendly terminologies and in multiple languages that best meet the needs of all families. When parents and educators communicate effectively, positive relationships develop, problems are more easily solved, and students make greater progress. Building respectful and trusting relationships among school staff, families, and community members is more likely to be effective in creating sustained connections that support student learning. (pp. 8-10)

The Family Engagement Framework lays the foundation for all Maryland state schools to incorporate families and communities in the education process (MSDE, 2019). The Maryland Families Engage (n.d.) website provides many resources, tools, and training opportunities for parents and educators.

Seitsinger et al. (2008) discuss the importance of informing families regarding the processes and situations occurring at schools to elicit their involvement. Seitsinger et al (2008)

indicated that it is important that families inform schools of the home environment to bridge the gap and promote a stronger partnership. The more frequently teachers try to connect with and involve families, the more families will reciprocate and engage in school activities and functions regardless of socio-economic status (Seitsinger et al., 2008).

Barriers to Involvement

The Maryland State Department of Education requires educators to encourage participation and involvement with families (MSDE, 2019). However, there is still a lack of teacher preparation for pre-service teachers and continuing professional development along with parental knowledge of the importance of parental involvement (Toytari et al., 2017). Lack of training for both pre-service and in-service teachers are two barriers that currently exist with family involvement (Toytari et al., 2017). Limited research has been conducted on teacher preparation programs and continuing professional development to educate teachers on ways to involve families in the classrooms and encourage educational growth at home.

Lack of teacher preparation. Teachers enter the classroom with limited to no experience meeting with families and conducting discussions with diverse individuals (Toytari et al., 2017; Winterbottom & Mazzocco, 2016). Winterbottom and Mazzocco's (2016) study consisting of 90 students in a mid-western university's pre-service teacher education program implemented praxeological-learning providing pre-service teachers with more real-world experience in a classroom. Their study reported positive experiences and greater opportunities to interactions with families and community members. The pre-service teachers in Winterbottom and Mazzocco's study thought positively of their experiences and valued the additional knowledge and experience they gained from interactions with families, community members, and experienced teachers. Pre-service teaching programs and professional development

opportunities lack the information necessary to encourage and support teachers in developing relationships with families (Toytari et al., 2017). These relationships are essential to student achievement and change as students progress through school (Wehrspann et al., 2016; Wang et al., 2014). Teacher education programs and professional development courses may need to be catered to different ages of students to ensure teachers are prepared to incorporate families into their classrooms and provide the family support necessary for success to their students at home.

Pre-service education. Unal and Unal's (2014) research study on pre-service teachers resulted in a desire for teacher candidates to learn how to incorporate familial involvement in their future classrooms throughout their degree plan (Unal & Unal, 2014). de Bruine et al. (2014) described the importance of pre-service teachers being exposed to communicating with families. de Bruine et al.'s (2014) study focused on three universities' pre-service teacher curricula and focus groups of seniors preparing for graduation and their teaching career showed a need for additional knowledge of gaining family involvement and establishing relationships with families. Teacher candidates were never assessed on their ability to work with families (de Bruine et al., 2014). Each university included content within a course regarding communicating the curriculum and concerns about students to families; however, teacher candidates' ability to partner with families was not a focus of any of the required courses (de Bruine et al., 2014). Pre-service teachers felt their programs lacked the opportunities necessary to learn how to develop family-school relationships (de Bruine et al., 2014; Wassell et al., 2017).

Family and professional development education. School districts are required to incorporate family communication and programs into their school systems due to the No Child Left Behind Act (de Bruine et al., 2014). However, teachers are not necessarily given the time or compensation to attend these programs (de Bruine et al., 2014). Professional development

credits for attending the programs would assist in establishing relationships with families and bridging the educational gap (de Bruine et al., 2014).

Community family involvement programs also assist with bridging the gap regarding the importance of school (O'Donnell & Kirkner, 2014). O'Donnell and Kirkner (2014) indicated that when Latino families and students were provided with the opportunity to participate in a community-based family involvement program, students' social skills, work habits, standardized test scores, and achievement grades were significantly higher. Families of 208 Latino students participated in O'Donnell and Kirkner's two-year study regarding parental involvement and partnerships with schools, teachers, and community members. One aspect of the study was additional teacher training on incorporating families into the learning process (O'Donnell & Kirkner, 2014). Pre-service teacher training and professional development opportunities for in-service teachers significantly predicted family involvement in locations with high immigrant populations (O'Donnell & Kirkner, 2014). Professional development of current teachers focused on the current research and the types of family involvement (O'Donnell & Kirkner, 2014). Additional training provided teachers the opportunity to increase their knowledge of cultural content and ability to create welcoming environments in their schools and classrooms (O'Donnell & Kirkner, 2014). As a result of the community-based family involvement program, students' standardized English test scores reflected proficient and allowed Latino children to reach their educational goals (O'Donnell & Kirkner, 2014). The program also provided professional development opportunities to increase teachers' knowledge regarding implementing families in the education process (O'Donnell & Kirkner, 2014).

A meta-analysis of 51 different studies was conducted by Jeynes (2012) on family involvement programs in urban areas. Jeynes' analysis determined there was a connection

between parent involvement programs and students' academic achievement. This meta-analysis also determined that parental involvement programs had a stronger positive connection to standardized test scores. Standardized test scores displayed more consistent results and connection to parental involvement programs than non-standardized measures, Grade Point Average (GPA) and ratings provided from teachers (Jeynes, 2012). Shared reading programs had the strongest relationship with students' academic achievement (Jeynes, 2012). Shared reading programs were defined as opportunities for families and students to learn to read together while thinking critically about the text (Jeynes, 2012). This improved students' reading comprehension while involving families in the learning process (Jeynes, 2012). The second largest relationship determined from Jeynes' meta-analysis were partnership programs that focused on the importance of developing relationships with families and working together to determine student expectations and successful learning strategies for students.

Knowledge of the importance of family involvement. Families must set the expectations and provide structure at home to ensure adolescent achievement (Hill et al., 2016; O'Sullivan, et al., 2014; Wang et al., 2014). To do this, families must understand the importance of their support, expectations, assistance, and school involvement (Murray et al., 2014). Families must be educated on ways to get involved with their children's education and implement their knowledge (Murray et al., 2014). Participants in Murray et al.'s (2014) study explained that their lack of parental involvement was a result of a lack of knowledge. The lack of knowledge was compounded when families had previous negative interactions with other families and teachers within the school (Murray et al., 2014). The interviews determined "parents' motivational beliefs, parents' perceptions of invitations for involvement from others, and parents' perceived life context" (Murray et al., 2014, p 5) are three motivational factors that

can create barriers in urban African American students. These barriers are also evident in rural schools due to a lack of knowledge regarding the influence family involvement has with student achievement (Hoffman et al., 2017).

Lack of practical experience. Alacam and Olgan (2017) and Winterbottom and Mazzocco (2016) explained teachers' need for additional time and experience working with families to increase confidence and ability to incorporate families effectively into the classroom. Additional practical experiences provide teachers with the opportunity to interact with families to learn more about the culture, responsibilities, and family desires for each of their students (Alacam & Olgan, 2017). This practical experience also provides teachers with the opportunities to learn more about the families in their community to develop connections and partnerships with schools and families (Seitsinger et al., 2008). Additional practical experience increases pre-service teacher confidence and knowledge regarding families and their interactions with families (Winterbottom & Mazzocco, 2016). Increased confidence for teachers provides greater opportunities for families to become involved (Seitsinger et al., 2018).

Teacher Self-Efficacy

Teacher self-efficacy is defined as teachers' beliefs in their capability as a teacher (Zee & Koomen, 2016). Zee and Koomen (2016) discuss teacher self-efficacy as a factor of student achievement and motivation. An increase in teacher self-efficacy positively affects student achievement and motivation in school (Schiefele & Schaffner, 2015; Zee & Koomen, 2016). Zee and Koomen's meta-analysis on the past 40 years of teacher self-efficacy research determined the effect teacher self-efficacy has on the quality of classroom processes provided for students. The quality of classroom processes is classified as instructional support, classroom organization, and emotional support (Zee & Koomen, 2016). Higher teacher self-efficacy

increases the amount of support for students, both emotional and instructional, from teachers (Zee & Koomen, 2016).

Higher teacher self-efficacy positively effects classroom instruction, support provided by teachers, and academic achievement for students (Zee & Koomen, 2016). More specifically, teacher self-efficacy maximized students' literacy and mathematics development (Zee & Koomen, 2016). Additional information from Zee and Koomen concluded that high self-efficacy in teachers resulted in a willingness from teachers to implement new strategies and instructional methods. Teachers with high self-efficacy can likely assist students in developing their mathematical competence (Zee and Koomen, 2016). Middle school students' school satisfaction and confidence increased when teachers had high self-efficacy (Zee and Koomen, 2016).

Varghese et al. (2016) determined teachers with high self-efficacy are more flexible in methods to support students' achievement while persisting through challenges within the classroom. Most recently, Cobanoglu et al. (2019) determined that teacher self-efficacy is an important source when adapting new processes and implementing procedures within the classroom. When teachers are confident in their abilities within the classroom, they can implement new strategies and procedures to encourage and develop their students (Cobanoglu et al., 2019). The implementation of new strategies and procedures helps increase student achievement (Cobanoglu et al., 2019). Cobanoglu et al.'s study of 268 teachers determined that teachers' beliefs in their abilities to involve parents in the education process significantly predicted their beliefs regarding developmentally appropriate practices (DAP) for education within the United States and abroad. DAP emphasizes the importance of knowing families and building partnerships with families (NAEYC, 2009). Even though the research on DAP is based on young children, the Association for Middle Level Education (AMLE) (2017) emphasize the

importance of family support in the form of ensuring homework is completed and communicating with parents using an agenda book. AMLE (2017) encouraged teachers to communicate with students to ensure they were developing students' academic, social, and emotional learning. The emphasis of a dream team comprised of families, teachers, and students, increases students' achievement within the classroom and in life (AMLE, 2017).

Alacam and Olgan's (2018) study on 601 third and fourth-year early childhood education teacher candidates from five universities used a cross-sectional survey research design and determined that teachers' self-efficacy beliefs are significantly correlated with and predict teacher implementation of parent involvement. This information is consistent with Alacam and Olgan (2017)'s study regarding teachers' self-efficacy beliefs when involving families and the positive impact it has on family involvement (Alacam & Olgan, 2017). A lack of practical experience for pre-service teachers, when implementing parental involvement, decreased teachers' working with families self-efficacy (Alacam & Olgan, 2017). In support of the need for additional practical experience for teachers, Zee and Koomen (2016) determined teachers need more practical experience in the classroom during training to increase their teacher self-efficacy.

Self-Efficacy of Teachers' Working with Families

An extensive review of previous literature on the topic of self-efficacy of teachers working with families resulted in one instrument, Working with Families Self-Efficacy Scales. Hollander (2010) created the instrument to measure three subscales: family-school communication, family diversity, and teacher role with families. Family-school communication is defined as exchanging ideas, opinions, and providing support (Hollander, 2010). Isikci (2018) and Thompson et al. (2017) defined family-school communication as an essential element to

establishing relationships with families while strategies are necessary to incorporate effective communication. Hollander (2010) defined family diversity as “the ability to understand the perspectives of persons from diverse economic and cultural circumstances and demonstrate comfort in interacting with such persons” (p 81). Self-efficacy when working with diverse classrooms is a significant concern with the growing and changing population (Wang et al., 2014). This is an area of study that is necessary but with very little knowledge provided to pre-service teachers (Alacam & Olgan, 2017). Teacher role with families defines the expected roles between families and teachers (Hollander, 2010). Murray et al.’s (2014) believe families should be very involved in their children’s education but parents from urban low-income schools in Maryland do not actually take the time to participate. Most families in the study waited for the teacher to make initial contact but did state the importance of monitoring academic performance (Murray et al., 2014).

Hollander’s (2010) instrument was created after extensive research over 15 years resulted in a lack of an instrument that addressed working with culturally diverse families and a collaborative role between families and schools (Hollander, 2010). Hollander focuses on the importance of teachers being confident in their ability to work with families when in difficult situations in the classroom. The ability to persevere through difficult situations is a common theme when teachers possess high self-efficacy (Alacam & Olgan, 2017; Cobanoglu et al., 2019; Zee & Koomen, 2016). Cobanoglu et al. (2019) studied 251 preschool teachers from 62 different public schools in a metropolitan city and determined teachers will persevere through difficult teaching situations and employ new strategies that adapt to students’ needs when they have high self-efficacy. Cobanoglu’s study aligns with Hollander’s research that high teacher self-efficacy encourages perseverance and determination from teachers to ensure students’ environments are

conducive to their learning. This research mirrors Bandura's (1993) stating low self-efficacy in an area leads to avoiding difficult tasks. Working with families from different cultural backgrounds and learning how to incorporate them into the learning process can be difficult (Wassell, et al., 2017). High self-efficacy of teachers when working with families is needed to establish and maintain relationships between teachers and families of all backgrounds while understanding all families can contribute to the education process (Hollander, 2010).

Isikci (2018) continued Hollander's (2010) research and conducted a study that included 271 pre-service teachers to determine their working with families self-efficacy in relation to taking a parent education course. Isikci used the WFSES created by Hollander to administer pre and post-tests determining teachers' working with families self-efficacy before and after taking a parent education course. The result of Isikci's study determined the parent education course increased self-efficacy of teachers working with families. However, Isikci's results determined the parent education course did not increase self-efficacy of teachers working with families self-efficacy in relation to the subscale of family diversity. Isikci's study aligns with Alacam and Olgan's (2017) and Zee and Koomen's (2016) research regarding the need for additional practical experience for teachers instead of additional courses to increase teacher self-efficacy with working with diverse cultures.

Summary

Bui & Rush (2016), Hill et al. (2016), O'Sullivan et al. (2014) focused on family involvement and the various forms of family involvement throughout children's lives depending on their background and age. Gonida & Cortina (2014), de Apodaca et al. (2015), Hill et al. (2016), and O'Sullivan et al. (2014) describe how homework assistance, involvement at school, family expectations, and family support are the different forms of family involvement that can

increase student achievement. Student achievement is a priority to ensure the future generation is well-educated. The state of Maryland requires teachers and schools to incorporate families in the education process (MSDE, 2019). However, barriers exist when trying to increase family involvement. Teachers are not provided with the information necessary to encourage and support family involvement. The importance of teacher self-efficacy as a factor of student achievement is specified in Alacam and Olgan (2018) and Zee and Kooman's (2016) research. Therefore, universities and school districts must look for opportunities to incorporate professional development sessions and experiences to educate teachers and increase family involvement and support for children within the curriculum.

Since very little research has been conducted on the self-efficacy of teachers working with families of rural middle school students, a gap existed in the literature. Using the Working with Families Self-Efficacy Scales (WFSES), to determine if a relationship exists between the self-efficacy of teachers working with families scores and teachers' classroom achievement, measured using MCAP. Additional research was necessary to determine if there is a need to provide current and pre-service teachers with the experiences and education necessary to ensure they have the tools required to incorporate family involvement within their classrooms that will increase their self-efficacy when working with families.

This current study will be able to add to the literature and theories to include more information on self-efficacy of teachers working with families. The following research questions will be used to add to the literature and theories: RQ1: Is there a statistically significant relationship between rural middle school teachers' working with families self-efficacy scores, as measured by WFSES, and overall students achievement in their classes, as reported by MCAP? RQ2: Is there a statistically significant relationship between rural middle school Math teachers'

working with families self-efficacy scores, as measured by WFSES, and overall students achievement in their classes, as reported by MCAP? RQ3: Is there a statistically significant relationship between rural middle school English teachers' working with families self-efficacy scores, as measured by WFSES, and overall students achievement in their classes, as reported by MCAP? This study examines if there is a relationship between the self-efficacy of rural middle school teachers working with families and their overall classroom achievement in both math and English. This study has the potential to benefit schools that service adolescents, universities that educate pre-service teachers on the importance of family involvement and its effects on student achievement, and school systems as they plan professional development opportunities for in-service teachers.

CHAPTER THREE: METHODS

Overview

The purpose of this study is to determine if a relationship exists between the self-efficacy of rural middle school teachers working with families scores and student achievement in their classrooms. The achievement goal, ecological systems, and self-efficacy theories led the study of the research to assess the self-efficacy of teachers working with families. Since familial involvement increases student achievement, higher education curricula must focus on building the self-efficacy of teachers when working with families to ensure all students have the same opportunities to succeed. Chapter three begins with an explanation of the design, research questions, and hypotheses. Next, the participants and setting are provided along with a description of the instrumentation used for the study. Finally, the procedures and data analysis are provided.

Design

This quantitative study uses a non-experimental, correlational design that examines the relationship between the self-efficacy of teachers working with families (predictor variable) and student achievement (criterion variable). The self-efficacy of teachers' working with families is teachers' beliefs in their ability to involve parents in the learning process (Hollander, 2010) and is measured using Working with Families Self-Efficacy Scales (WFSES). Student achievement is defined as the cumulative knowledge and experiences gained from education (Rivkin et al., 2005) and measured using Maryland Comprehensive Assessment Program (MCAP).

A non-experimental research study is used when the researcher does not alter the variables throughout the study (Gall et al., 2007). A quantitative analysis is required to determine if a relationship exists between the self-efficacy of teachers working with families and

student achievement. Correlational designs examine the relationship between two variables, criterion and predictor, on the same group of participants while helping predict and explain relationships (Rovai et al., 2014). Creswell and Guetterman (2019) state that correlational research is used when the researcher “seeks to relate two or more variables to see if they are associated with each other” (p 343). Correlational designs also allow a prediction of the outcome while describing associations between scores. Since this study will examine the relationship between the self-efficacy of teachers working with families scores and student achievement in their classrooms, a correlational study is most appropriate to examine the relationship between the predictor variable of teachers’ working with families self-efficacy scores and the criterion variable of student achievement. This study seeks to make a comparison thus a correlational design is the most appropriate choice (Gall et al., 2007).

Reynolds et al. (2015) conducted a mixed-methods study that consisted of a correlational design to examine the relationship between parental involvement, parent’s education level, parent role and self-efficacy, teacher role and self-efficacy. Thompson et al. (2017) used correlations to evaluate the relationship that teacher beliefs and opinions have on parental involvement and students (Thompson et al., 2017). A correlational study is an appropriate way to study relationships between teachers’ working with families self-efficacy scores and student achievement. The predictor variable of teachers’ working with families self-efficacy scores is measured using the Working with Families Self-Efficacy Scales (WFSES) (Hollander, 2010). A gap exists in the research regarding the relationship between the predictor and criterion variables. For this study, rural middle school math and English teachers were asked to participate in the WFSES survey. From their responses, the researcher obtained student achievement data from the district to determine if a statistically significant relationship existed between the two

variables. Correlational studies can quantitatively determine if a statistically significant relationship exists or does not exist (Gall et al., 2007). A correlational study does not determine if the relationship is causal (Gall et al., 2007). A correlational design addresses the gap in the research and discovers additional areas for teacher education and experience (Gall et al., 2007).

Research Questions

The research questions for this study are:

RQ1: Is there a statistically significant relationship between rural middle school teachers' working with families self-efficacy scores, as measured by WFSES, and overall students achievement in their classes, as reported by MCAP?

RQ2: Is there a statistically significant relationship between rural middle school Math teachers' working with families self-efficacy scores, as measured by WFSES, and overall students achievement in their classes, as reported by MCAP?

RQ3: Is there a statistically significant relationship between rural middle school English teachers' working with families self-efficacy scores, as measured by WFSES, and overall students achievement in their classes, as reported by MCAP?

Hypotheses

The null hypotheses for this study are:

H₀1: There is no statistically significant relationship between rural middle school teachers' working with families self-efficacy scores, as measured by WFSES, and overall students achievement in their classes, as reported by MCAP.

H₀2: There is no statistically significant relationship between rural middle school Math teachers' working with families self-efficacy scores, as measured by WFSES, and overall students achievement in their classes, as reported by MCAP.

H₃: There is no statistically significant relationship between rural middle school English teachers' working with families self-efficacy scores, as measured by WFSES, and overall students achievement in their classes, as reported by MCAP.

Participants and Setting

The subjects in this study were drawn from a convenience sample of middle school math and English teachers in a rural school district on the Eastern Shore of Maryland. A convenience sample was chosen for the study due to the ease and accessibility of obtaining participants (Gall et al., 2007). The researcher previously lived in the district and is familiar with the assistant superintendent. The school district consists of five middle schools and is from a rural population of low to middle-income families in Maryland. Teachers from these middle schools vary in race, ethnicity, and education level. The race and gender of teachers is displayed in Table 2.

A convenience sample from a total of five schools from the school district where the research has been associated were selected as participants (Gall et al., 2007). Two of the five schools are considered Title 1 schools. The sample will be a combination of math and English teachers from all five middle schools that participate in the voluntary study. As shown in Table 1 below, the schools are economically, culturally, and racially diverse.

Table 1

Middle School Student Demographics

Grade	Special Services		
	% Free and Reduced Lunch	% Special Education	% English Language Learner
6	60.11	13.11	15.1
7	57	13.31	11.6
8	59.94	13.86	11.14

The middle schools are economically, culturally, and racially diverse. The average income for middle school teachers in the school district is \$61,980. Teacher demographics are less diverse than the student population as seen in Table 2 below. All teachers are certified, and the curricula for all five schools meet the requirements for the state of Maryland and the school district.

Table 2

District Professional Staff Demographics

Race	Total	Percentage	Male	Female
White	1288	86.6	286	1002
African American	151	10.2	28	123
Other	48	3.2	6	42

The total number of minimum participants required for a correlational research study is 66 participants. Gall et al. (2007) and Warner (2008) state a sample size of 66 participants is needed to achieve a medium effect size, with a statistical power of 0.70 with an alpha set at $\alpha = 0.05$. A total of 158 participants were recruited. The response rate was anticipated to be 41%. The participants were combined into one group of 65 to represent all teachers. The participants will also be separated into one group of 31 math teachers and one group of 34 English teachers. Of the 158 participants recruited, a minimum of 66 participants was needed for the study (Gall et al., 2007).

The total sample consisted of 65 participants ($N = 65$). 0 were African American (0.0%), 0 as Hispanic (0.0%), 56 as Caucasian (86.1%), 0 as Native American (0.0%), and 4 as More than one race (6.2%), and 5 as other (7.7%). The average age of the sample was 36-40 years old.

11 were male (16.9%) and 54 were female (83.1%). The average years of teaching experience was more than 10 years.

The total sample of math teachers consisted of 31 participants ($N = 31$). 0 were African American (0.0%), 0 as Hispanic (0.0%), 26 as Caucasian (83.9%), 0 as Native American (0.0%), and 2 as More than one race (6.4%), and 3 as other (9.7%). 10 were male (32.4%) and 21 were female (67.7%).

The total sample of English teachers consisted of 34 participants ($N = 34$). 0 were African American (0.0%), 0 as Hispanic (0.0%), 30 as Caucasian (88.2%), 0 as Native American (0.0%), and 2 as More than one race (5.9%), and 2 as other (5.9%). 1 was male (3.0%) and 33 were female (97.0%).

Instrumentation

This study included two instruments, the Working with Families Self-Efficacy Scales (WFSES) and Maryland Comprehensive Assessment Program (MCAP). The MCAP consists of two instruments: MCAP English, MCAP Math. Demographic data will be collected using a survey (see Appendix B) at the beginning of the questionnaire to collect age, gender, race, name, and years of teaching experience.

Working with Families Self-Efficacy Scales

Permission was granted from Dr. Hollander (Appendix C) to use the WFSES (Appendix A) instrument to measure the self-efficacy of teachers' working with families using the subscales family-school communication, family diversity, and teacher role with families. Bandura's Teacher Efficacy Scale was used to model the first version of the 56-item Working with Families Self-Efficacy Scales (Hollander, 2010). Validity testing was conducted by three education faculty that taught a course in family involvement to teacher candidates (Hollander, 2010). Items

were eliminated based on redundancy, confusion, and relevance to teachers' working with families self-efficacy (Hollander, 2010). The result was Hollander's (2010) WFSES, a 27-item self-reported questionnaire to measure teachers' working with families self-efficacy. Three subscales were identified within the WFSES questionnaire. Those subscales are Family-School Communication, Family Diversity, and Teacher Role with Families (Hollander, 2010). The Family-School Communication and Family Diversity subscales consist of 9 items (Hollander, 2010). The Teacher Role with Families subscale consisted of 13 items (Hollander, 2010). After reliability tested was completed, a small pilot study was completed to clarify items and word choice (Hollander, 2010).

Reliability and validity. Reliability scores were determined for each subscale by calculating Cronbach's alpha value. Additional statistics were calculated regarding the frequencies, standard deviation, mean, median, and mode for each question. The validity of the instrument was acceptable according to factor loading that assigned each question to one of the three subscales.

Initial instrument testing. This questionnaire underwent validity and reliability testing for each subscale (Hollander, 2010). Cronbach's alpha was calculated for each subscale ($\alpha_{\text{Family-School Communication}} = .899$, $\alpha_{\text{Family Diversity}} = .930$, and $\alpha_{\text{Teacher Role with Families}} = .923$) (Hollander, 2010). The scores obtained from the instrument can be examined for teachers to determine their working with families self-efficacy.

Other uses. The validity and reliability of the WFSES questionnaire was confirmed, and a pilot study completed (Isikci, 2018). Cronbach's alpha values were tested ($\alpha_{\text{Family-School Communication}} = .899$, $\alpha_{\text{Family Diversity}} = .930$, and $\alpha_{\text{Teacher Role with Families}} = .923$) and fit the model (GFI = .82, AGFI = .78, RMSEA = .077, CFI = .97) (Isikci, 2018).

Scoring information. Each question was scored based on a 100-point scale (0 = cannot do at all, 50 = moderately can do, 100 = highly certain can do) (Hollander, 2010). The total scores range from 0 to 2700 with 0 indicating no self-efficacy for working with families and 2700 indicating highly competent regarding working with families (high self-efficacy) (Hollander, 2010). The researcher calculated the total percentage and each subscales' percentage by adding the points together and dividing by 2700. The following scale rates the percentage of self-efficacy (0-31% low self-efficacy, 32-52 fair self-efficacy, 53-73% moderate self-efficacy, 74-94% high self-efficacy, 95-100% proficient self-efficacy) as seen in Table 3 below (Hollander, 2010). Family-School Communication Efficacy and Family Diversity Efficacy range from 0 (no self-efficacy) to 900 (high self-efficacy). Some questions in the subscale Teacher Role with Families Efficacy overlapped with other subscales questions to include a total of 13 questions and range from 0 (no self-efficacy) to 1300 (high self-efficacy). All three subscales use the same percentage ranges to determine the level of working with families self-efficacy for each subscale.

Table 3

Scale for WFSES

Percentage	Classification
0-31%	low self-efficacy
32-52%	fair self-efficacy
53-73%	moderate self-efficacy
74-94%	high self-efficacy
95-100%	proficient self-efficacy

Maryland Comprehensive Assessment Program

The Maryland Comprehensive Assessment Program (MCAP) is used each year to measure the academic progress of students throughout the state of Maryland in all public schools (MSDE, 2019). The MCAP includes assessments in English language arts, mathematics, Science, Government, and Kindergarten Readiness (MSDE, 2019). The Every Student Succeeds Act (ESSA) requires testing for all students in grades third through eighth in both English and mathematics (MSDE, 2019). Middle school students, grades sixth through eighth, take MCAP assessments in English and math.

Initial instrument testing. MCAP assessments for math and English for sixth through eighth grade underwent validity and reliability testing for each grade level. Cronbach's alpha was calculated for each grade level and test ($\alpha_{\text{math6}} = .81$, $\alpha_{\text{math7}} = .76$, $\alpha_{\text{math8}} = .73$, $\alpha_{\text{English6}} = .81$, $\alpha_{\text{English7}} = .79$, and $\alpha_{\text{English8}} = .81$) (MSDE, 2010; MSDE, 2011). The scores obtained from the instrument can be examined for students, parents, and educators to determine their student achievement scores in math and English.

Other uses. The validity and reliability of the MCAP math and English for sixth through eighth grade was confirmed the following year (MSDE, 2010). Cronbach's alpha values were calculated and determined to be reliable ($\alpha_{\text{math6}} = .83$, $\alpha_{\text{math7}} = .77$, $\alpha_{\text{math8}} = .79$, $\alpha_{\text{English6}} = .78$, $\alpha_{\text{English7}} = .74$, and $\alpha_{\text{English8}} = .76$) (MSDE, 2010; MSDE, 2011).

Scoring information. The MCAP math assessment is comprised of 35 questions that are divided into three different types of questions: Type I, Type II, and Type III. Type I items assess content, reasoning, and modeling and consist of 31 multiple choice questions that are machine scored (MSDE, 2019). Type II items measure students' reasoning ability and consist of two

word problems that are human scored using a three point rubric (MSDE, 2019). Type III items measure students' modeling ability and consist of two word problems that are also human scored using a three point rubric (MSDE, 2019). Scores on the MCAP math assessment range from 650 to 850 (MSDE, 2019a). A score of 650-699 represents the student did not yet meet expectations, 700-725 represents partially met expectations, 725-749 represents approached expectations, 750-785 represents met expectations, and 786-850 represents a student that exceeded expectations. MCAP math scores use the same scale for all grade levels, sixth through eighth (MSDE, 2019a). Students are provided with a final numerical score for the MCAP math assessment.

The MCAP English assessment is comprised of two types of questions, multiple choice and free writing that assess three different literary skills: research simulation, literary analysis, and narrative writing (MSDE, 2019). A five-point rubric is used to evaluate the five narrative writing questions by human evaluators (MSDE, 2019). Nine multiple choice research simulation questions are included in the assessment that consists of two parts for each question and are machine scored. Ten multiple choice questions are included in the literary analysis section and are machine scored. Overall performance for the MCAP English ranges from 650 to 850 (MSDE, 2019a). A score of 650-699 represents the student did not yet meet expectations, 700-725 represents partially met expectations, 725-749 represents approached expectations, 750-785 represents met expectations, and 786-850 represents a student that exceeded expectations. MCAP math scores use the same scale for all grade levels, sixth through eighth (MSDE, 2019a). Students are provided with a final numerical score for the MCAP English assessment.

Student MCAP math and English results were provided from the district. The average MCAP English scores and MCAP math scores for each math teacher were provided from the district. The school district agreed to take the list of participants and scores from the WFSES to

develop a numeric coding for each teacher name, then provide the teachers' average classroom scores under each numeric coding to align the WFSES data with the classroom MCAP data.

Procedures

An application describing the research proposal was submitted to Liberty University Institutional Review Board (IRB). The IRB application was submitted with all required documentation to gain approval to conduct the study. The rural Maryland school district was contacted to establish a meeting to explain the study and gain consent to conduct the study and obtain student academic achievement results from the five middle schools in the district. A written request form was completed by the researcher and formally signed by the district. Identifying information was removed so the district remains anonymous. After the school district and the IRB approved the study (Appendix G), an email was sent from the Supervisor of School Improvement to all English and math middle school teachers within the district. A recruitment letter (Appendix D) explained the purpose of the study, how data was used, participation was voluntary, and any participant could leave the study at any time. The survey link includes a short description of the study, its purpose, confidentiality of the results, and a consent form (Appendix E). The participants identified their demographic information before completing the WFSES questionnaire with an unlimited amount of time but took approximately 15-20 minutes. They were given a two-week deadline to complete the questionnaire. A reminder email was sent one-week after the initial email. Participants had the option to provide their email address to be entered in the drawing for a \$100 Amazon gift card. Participants were informed of the confidentiality of their responses and confidentiality regarding their email address if they chose to participate in the drawing.

Teachers completed the demographic information (Appendix B) followed by the 29 questions in Working with Families Self-Efficacy Scales (WFSES) (Appendix A). A follow-up reminder email was sent from the supervisor of school improvement to participants to elicit additional responses one week after the initial email is sent. Adequate participation was obtained during the two-weeks.

The data from the WFSES was collected, scored (Appendix A), and then entered into a Microsoft Excel spreadsheet. The questionnaire and demographic data remained confidential throughout the study. Completion of the questionnaire took an average of 12.8 minutes. Data was stored on a password protected hard drive and accessed by the researcher only through a computer that is also password protected and located in a secure environment.

Teachers were provided with an opportunity to share their email address to be entered in a drawing to win a \$100 Amazon gift card. Their email address was stored electronically on a password protected hard drive and accessed only through a computer that is also password protected. Teachers were reminded that their information and responses will not be shared with anyone outside of the researcher.

The Maryland Comprehensive Assessment Program (MCAP) data is archival data that was used to analyze student achievement. The data was obtained from the school district. The achievement data for each middle school math and English teacher that participated in the study within the rural middle school district was used for the study. Participant names were provided to the district, the district data analyst provided a code for each participant. The analyst then provided the classroom MCAP scores and connected those to the participant code. Finally, the researcher connected participant WFSES scores to their classroom MCAP results using the coding provided from the district. The classroom MCAP score for each math and English

teacher that participates in the study was input into the Excel document. The researcher had another Microsoft Excel document that contained the teachers' numeric code, WFSES score, classroom average MCAP score. After all data was collected and screened in Microsoft Excel, data was uploaded into Statistical Package for Social Sciences (SPSS). A personal password protected computer will be used to operate SPSS and backed up on a USB drive that will be in a lock box accessible only to the researcher. Data will not be provided to anyone other than the researcher and committee. The following section describes the analysis of the data using SPSS.

Data Analysis

This study used three Pearson Product Moment correlations to determine if a relationship exists between the self-efficacy of rural middle school teachers working with families scores and student achievement in their classrooms. The Pearson Product Moment correlation was used to determine if a relationship existed between two unrelated variables (Warner, 2013).

Analysis of RQ1

RQ1 was explored using the criterion variable of overall classroom student achievement scores, reported by Maryland Comprehensive Assessment Program (MCAP), and predictor variable of math and English rural middle school teachers' working with families self-efficacy scores, measured using Working with Families Self-Efficacy Scales (WFSES). Once the data was uploaded into SPSS, a scatterplot was created between the predictor variable (x axis), teachers' WFSES scores, and criterion variable (y axis), student achievement, and examined for bivariate outliers. No extreme outliers were present in the data set. Descriptive statistics were performed on the data set to determine the sample size (N), minimum, maximum, mean (M), standard deviation (SD), and degrees of freedom (df).

Next, both assumptions were tested. Assumption of linearity and bivariate normal distribution are the two assumptions when performing a correlation. A random sample was analyzed using a scatterplot to verify the shape is a classic “cigar” shape. Linearity was examined to determine if a linear relationship exists between the predictor and criterion variables. A line of fit was added to the previously created scatterplot to ensure a classic “cigar” shape with no points present outside of the shape. The second assumption, bivariate normal distribution, also used the previously created scatter plot to determine if the classic “cigar” shape was present with no points outside. SPSS was used to analyze the Pearson Correlation using the Bonferroni approach. If $p < \alpha$, when $\alpha = .05$, the null hypothesis will be rejected because a significant relationship will exist. The Pearson Product Moment Correlation value (r) was generated using SPSS and determined the strength of the relationship between the criterion variable (teachers WFSES scores) and predictor variable (student achievement).

Analysis of RQ2

RQ2 was explored using the criterion variable of math classroom student achievement scores, reported by Maryland Comprehensive Assessment Program (MCAP), and predictor variable of rural middle school math teachers’ working with families self-efficacy scores, measured using Working with Families Self-Efficacy Scales (WFSES). The researcher input the MCAP data provided by the district that is aligned with each teacher’s WFSES score to the teacher’s classroom MCAP data using the variable view table in SPSS. Only the math teachers’ data and corresponding student achievement data was used for this analysis. Next, a scatterplot was created between the predictor variable (x axis), math teachers’ WFSES scores, and criterion variable (y axis), student achievement in math, to look for bivariate outliers. No extreme outliers

were present. Descriptive statistics were performed on the data set to determine the sample size (N), minimum, maximum, mean (M), standard deviation (SD), and degrees of freedom (df).

Next, both assumptions were tested. Assumption of linearity and bivariate normal distribution are the two assumptions when performing a correlation. A random sample was analyzed using a scatterplot to verify the shape is a classic “cigar” shape. Linearity was examined to determine if a linear relationship exists between the predictor and criterion variables. A line of fit was added to the previously created scatterplot to ensure a classic “cigar” shape with no points outside of the shape. The second assumption, bivariate normal distribution, also used the previously created scatter plot to determine if the classic “cigar” shape was present with no points outside. SPSS was used to analyze the Pearson Correlation using the Bonferroni approach. If $p < \alpha$, when $\alpha = .05$, the null hypothesis will be rejected because a significant relationship will exist. The Pearson Product Moment Correlation value (r) was generated using SPSS and determined the strength of the relationship between the criterion variable (Math teachers’ WFSES scores) and predictor variable (math student achievement).

Analysis of RQ3

RQ3 was explored using the criterion variable of English classroom student achievement scores, reported by Maryland Comprehensive Assessment Program (MCAP), and predictor variable of rural middle school English teachers’ working with families self-efficacy scores, measured using Working with Families Self-Efficacy Scales (WFSES). The researcher input the MCAP data provided by the district that is aligned with each teacher’s WFSES score to the teacher’s classroom MCAP data using the variable view table in SPSS. Only the English teachers’ data and corresponding student achievement data was used for this analysis. Next, a scatterplot was created between the predictor variable (x axis), English teachers’ WFSES scores,

and criterion variable (y axis), student achievement in English, to look for bivariate outliers. No extreme outliers were present in the data set. Descriptive statistics was performed on the data set to determine the sample size (N), minimum, maximum, mean (M), standard deviation (SD), and degrees of freedom (df).

Next, both assumptions were tested. Assumption of linearity and bivariate normal distribution are the two assumptions when performing a correlation. A random sample was analyzed using a scatterplot to verify the shape is a classic “cigar” shape. Linearity was examined to determine if a linear relationship exists between the predictor and criterion variables. A line of fit was added to the previously created scatterplot to ensure a classic “cigar” shape with no points outside of the shape. The second assumption, bivariate normal distribution, also used the previously created scatter plot to determine if the classic “cigar” shape was present with no points outside. SPSS was used to analyze the Pearson Correlation using the Bonferroni approach. If $p < \alpha$, when $\alpha = .05$, the null hypothesis will be rejected because a significant relationship will exist. The Pearson Product Moment Correlation value (r) was generated using SPSS and determined the strength of the relationship between the criterion variable (English teachers’ WFSES scores) and predictor variable (English student achievement scores).

CHAPTER FOUR: FINDINGS

Overview

The purpose of this study was to determine if there is a relationship between the self-efficacy of rural middle school math and English teachers working with families, using the Working with Families Self-Efficacy (WFSES) scores, and student achievement in their classrooms, using Maryland Comprehensive Assessment Program (MCAP). The predictor variables were WFSES scores and the criterion variables were MCAP scores for each research question. The Findings section includes the research questions, data screening, descriptive statistics, assumption testing, and results.

Research Questions

RQ1: Is there a statistically significant relationship between rural middle school teachers' working with families self-efficacy scores, as measured by WFSES, and overall students achievement in their classes, as reported by MCAP?

RQ2: Is there a statistically significant relationship between rural middle school math teachers' working with families self-efficacy scores, as measured by WFSES, and overall students achievement in their classes, as reported by MCAP?

RQ3: Is there a statistically significant relationship between rural middle school English teachers' working with families self-efficacy scores, as measured by WFSES, and overall students achievement in their classes, as reported by MCAP?

Hypotheses

H₀1: There is no statistically significant relationship between rural middle school teachers' working with families self-efficacy scores, as measured by WFSES, and overall students achievement in their classes, as reported by MCAP.

H₀2: There is no statistically significant relationship between rural middle school math teachers' working with families self-efficacy scores, as measured by WFSES, and overall students achievement in their classes, as reported by MCAP.

H₀3: There is no statistically significant relationship between rural middle school English teachers' working with families self-efficacy scores, as measured by WFSES, and overall students achievement in their classes, as reported by MCAP.

Descriptive Statistics

Descriptive statistics were obtained on each of the variables for all three research questions. The total sample consisted of 67 participants. Scores on the MCAP range from 650-850. A high score of 850 is a perfect score on the MCAP, a low score of 650 means the student did not yet meet expectations. Scores on the WFSES range from 0 to 100. A perfect score of 100 means the teacher has the highest self-efficacy when working with families, whereas a score of 0 indicates the teacher has no self-efficacy when working with families. Descriptive statistics for RQ1 are found in Table 4, RQ2 in Table 5, and RQ3 in Table 6 below.

Table 4

RQ1 Descriptive Statistics (Overall)

	N	Minimum	Maximum	Mean	Std. Deviation
MCAP	65	698.30	766.25	726.58	15.71
WFSES	65	60.10	91.50	75.32	8.42
Valid N (listwise)	65				

Table 5

RQ2 Descriptive Statistics (Math)

	N	Minimum	Maximum	Mean	Std. Deviation
MCAP	31	701.03	766.25	727.04	17.94
WFSES	31	60.20	91.50	74.82	9.44
Valid N (listwise)	31				

Table 6

RQ3 Descriptive Statistics (English)

	N	Minimum	Maximum	Mean	Std. Deviation
MCAP	34	698.30	755.77	727.87	14.50
WFSES	34	60.10	89.70	75.78	7.48
Valid N (listwise)	34				

Results

Data Screening

The researcher sorted the data and scanned for inconsistencies. No data errors or inconsistencies were identified. A scatterplot with line of best fit was used to detect bivariate outliers between the predictor variables and criterion variables. See Figures 1, 2, and 3 below for RQ1 Scatterplot, RQ2 Scatterplot, and RQ3 Scatterplot, respectively. Two bivariate outliers

were identified and removed from the data sets. The two data points removed were one English (89.5, 795.49) and one math (89.6, 705.17).

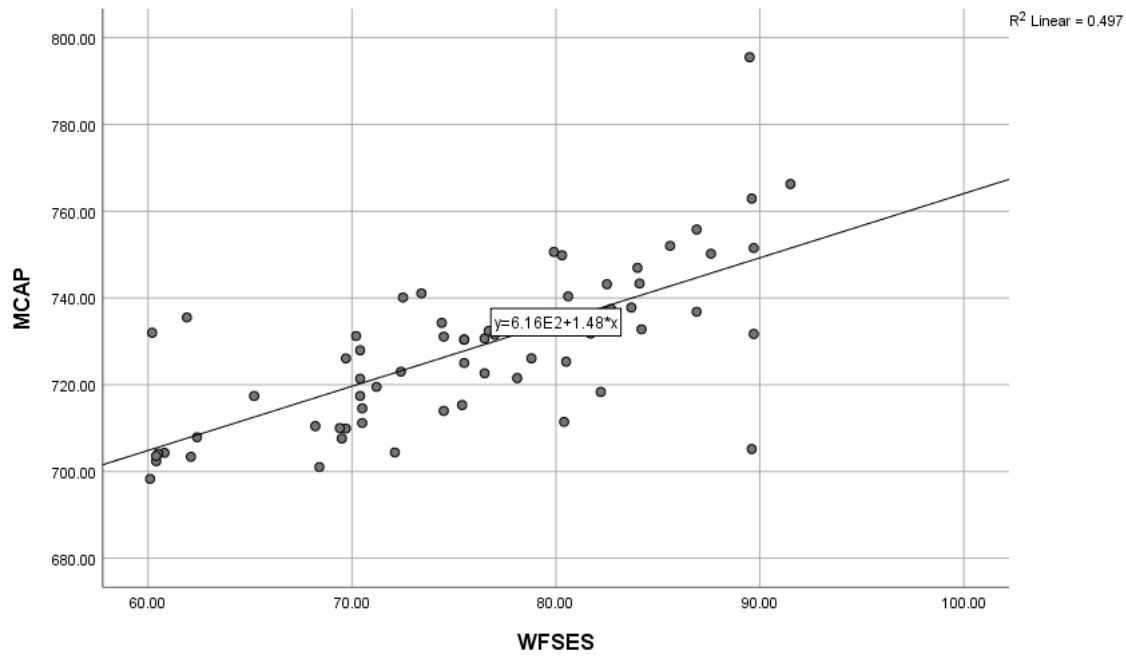


Figure 1. RQ1 Scatterplot with line of best fit.

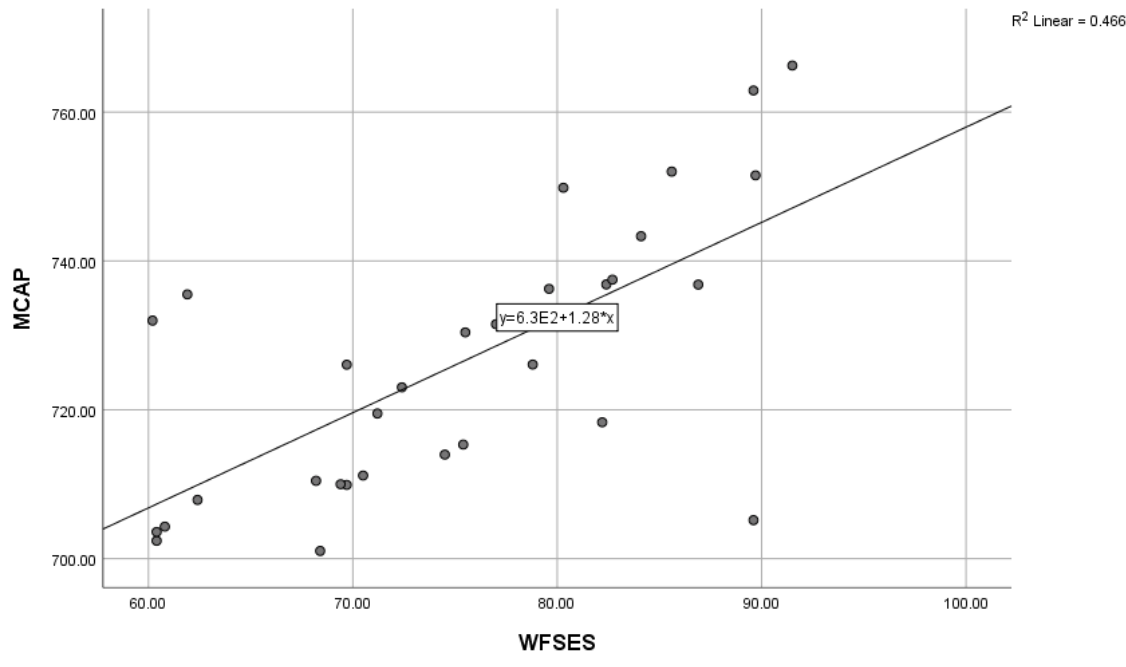


Figure 2. RQ2 Scatterplot with line of best fit.

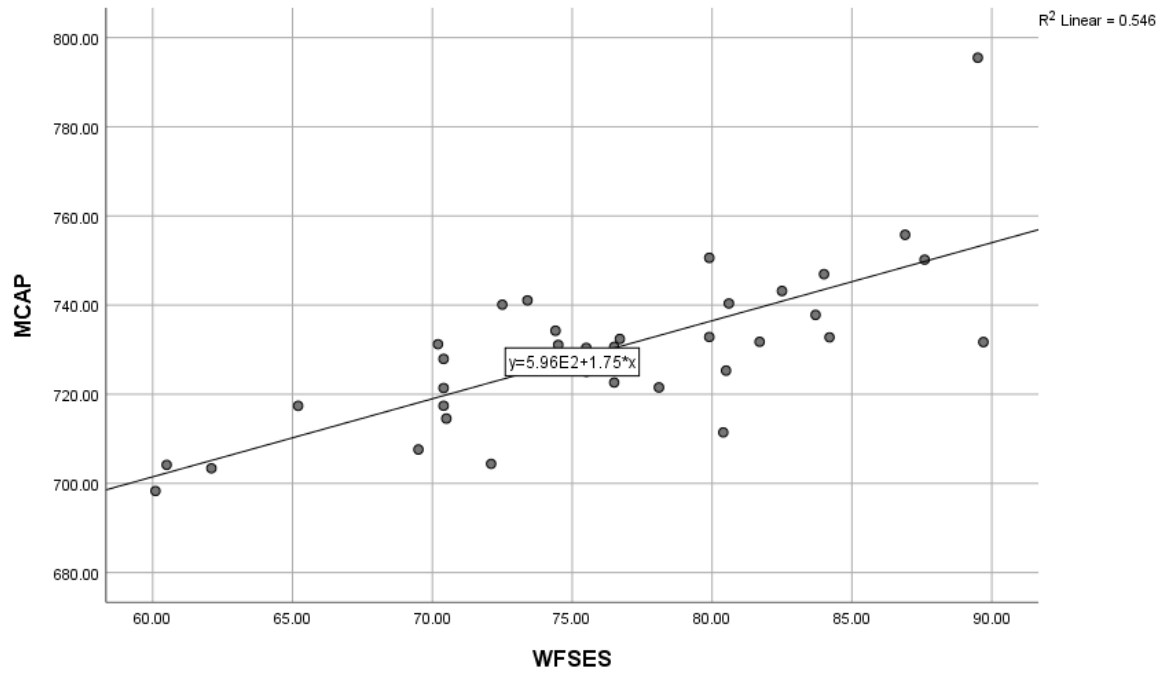


Figure 3. RQ3 Scatterplot with line of best fit.

Assumption Testing

Assumption of Linearity

The Pearson Product Moment Correlation requires that the assumption of linearity be met. Once the two bivariate outliers were removed, linearity was examined using a scatterplot with line of best fit. The assumption of linearity was met for all three research questions and the assumption is tenable. See Figures 4, 5, and 6 for the scatterplots showing linearity.

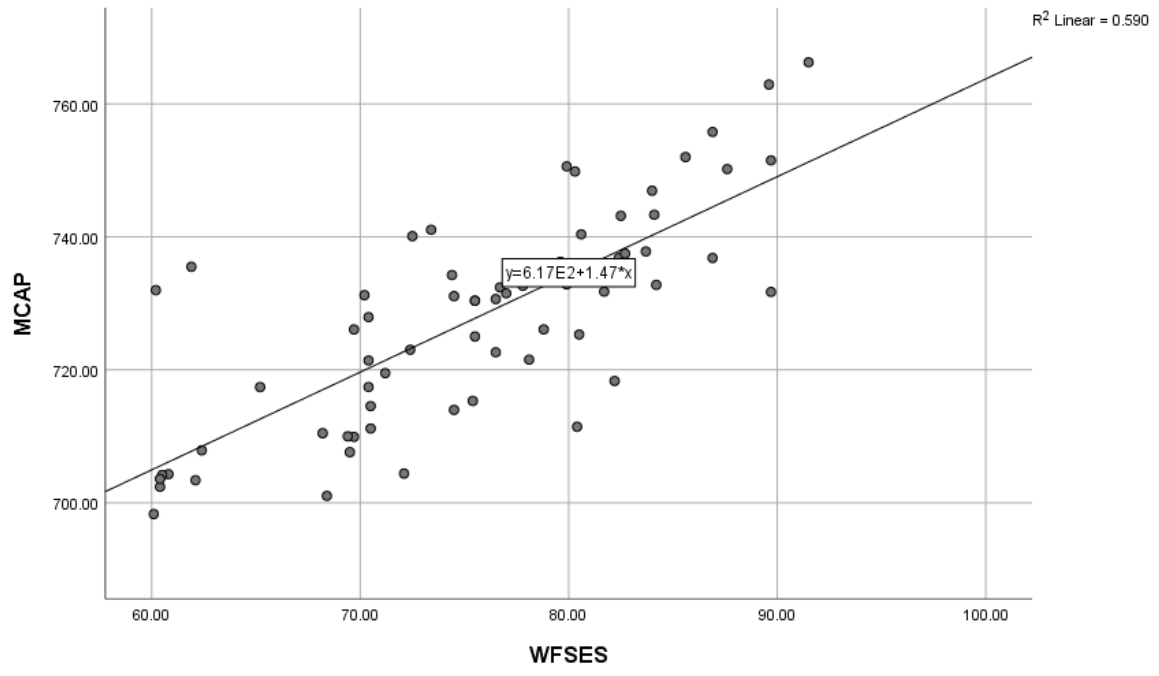


Figure 4. RQ1 Scatterplot with outliers removed and line of best fit.

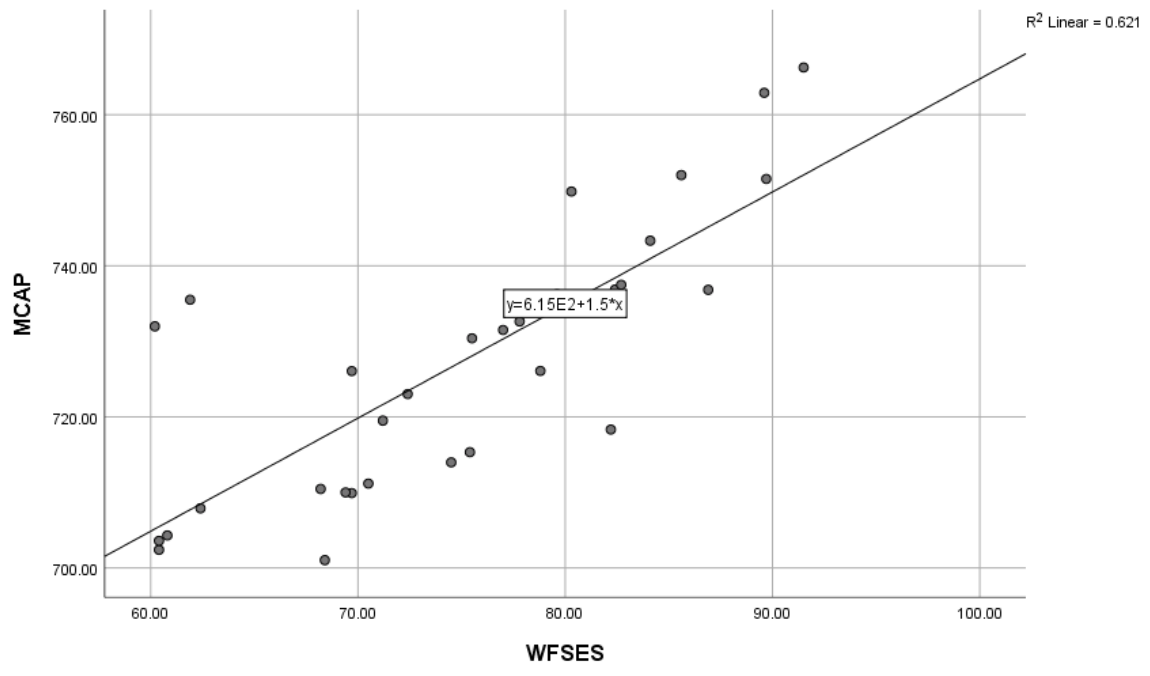


Figure 5. RQ2 Scatterplot with outliers removed and line of best fit.

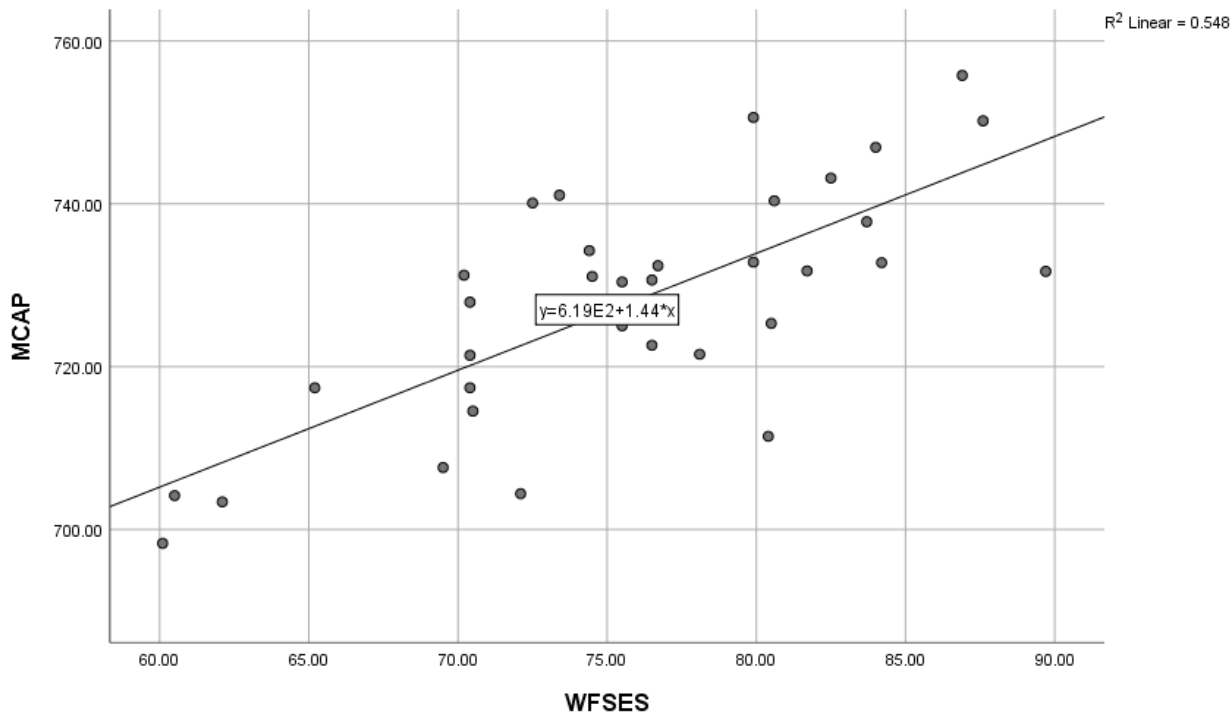


Figure 6. RQ3 Scatterplot with outliers removed and line of best fit.

Assumption of Bivariate Normal Distribution

The Pearson Product Moment Correlation requires that the assumption of bivariate normal distribution to be met. The assumption of bivariate normal distribution was examined using the scatterplot to ensure a cigar shape was present. The assumption of bivariate normal distribution was met. See Figures 4, 5, and 6 for the scatterplots. Descriptive statistics for RQ1 are found in Table 4, RQ2 in Table 5, and RQ3 in Table 6 above.

Hypotheses

RQ1 Results

A Pearson Product Moment Correlation was conducted to see if there was a relationship between rural middle school teachers' working with families self-efficacy scores, as measured by WFSES, and overall students achievement in their classes, as reported by MCAP. The predictor variable was math and English rural middle school teachers' working with families self-efficacy

scores and the criterion variable was overall classroom student achievement scores. The researcher rejected the null hypothesis at the 95% ($\alpha = .05$) confidence level where $r(63) = .69$, $p < .001$, a very large effect size, and positive relationship. There was a statistically significant relationship between the predictor variable (WFSES scores) and the criterion variable (MCAP scores). See Table 7 for the Pearson Product Moment Correlation test results for RQ1.

Table 7

RQ1 Pearson Product Moment Correlation Test

		MCAP	WFSES
MCAP	Pearson Correlation	1	.690**
	Sig. (2-tailed)		< .001
	N	65	65
WFSES	Pearson Correlation	.690**	1
	Sig. (2-tailed)	< .001	
	N	65	65

** . Correlation is significant at the 0.01 level (2-tailed).

RQ2 Results

A Pearson Product Moment Correlation was conducted to see if there was a relationship between rural middle school math teachers' working with families self-efficacy scores, as measured by WFSES, and overall students achievement in their classes, as reported by MCAP. The predictor variable was math rural middle school teachers' working with families self-efficacy scores and the criterion variable was overall classroom student achievement scores. The researcher rejected the null hypothesis at the 95% ($\alpha = .05$) confidence level where $r(29) = .788$, $p < .001$, an extremely large effect size, and positive relationship. There was a statistical

relationship between the predictor variable (WFSES scores) and the criterion variable (MCAP scores). See Table 8 for the Pearson Product Moment Correlation test results for RQ2.

Table 8

RQ2 Pearson Product Moment Correlation Test

		MCAP	WFSES
MCAP	Pearson Correlation	1	.788**
	Sig. (2-tailed)		< .001
	N	31	31
WFSES	Pearson Correlation	.788**	1
	Sig. (2-tailed)	< .001	
	N	31	31

** . Correlation is significant at the 0.01 level (2-tailed).

RQ3 Results

A Pearson Product Moment Correlation was conducted to see if there was a relationship between rural middle school English teachers' working with families self-efficacy scores, as measured by WFSES, and overall students achievement in their classes, as reported by MCAP. The predictor variable was English rural middle school teachers' working with families self-efficacy scores and the criterion variable was overall classroom student achievement scores. The researcher rejected the null hypothesis at the 95% ($\alpha = .05$) confidence level where $r(32) = .74$, $p < .001$, an extremely large effect size, and positive relationship. There was a statistical relationship between the predictor variable (WFSES scores) and the criterion variable (MCAP scores). See Table 9 for the Pearson Product Moment Correlation test results for RQ3.

Table 9

RQ3 Pearson Product Moment Correlation Test

		MCAP	WFSES
MCAP	Pearson Correlation	1	.740**
	Sig. (2-tailed)		< .001
	N	34	34
WFSES	Pearson Correlation	.740**	1
	Sig. (2-tailed)	< .001	
	N	34	34

** . Correlation is significant at the 0.01 level (2-tailed).

CHAPTER FIVE: CONCLUSIONS

Overview

The current literature regarding family involvement in the education process and teacher self-efficacy reveals significant positive results in student achievement. Previous studies were conducted on teacher self-efficacy and student achievement, but a lack of research focused on self-efficacy of teachers working with families and the relationship with student achievement. When assessing student achievement, it is important that all stakeholders are incorporated into the learning process. Teachers need to understand the importance of their self-efficacy when working with families and the implications it can have on student achievement. This study seeks to provide data and aids in the importance of preparing teachers to work with and develop relationship with families. This chapter presents a discussion of each research question, implications of the study, limitations, and recommendations for future research.

Discussion

The purpose of this study is to determine if a relationship exists between the self-efficacy of rural middle school teachers working with families and student achievement in their classrooms. The study also determined if relationships exist between the self-efficacy of rural math and English middle school teachers working with families and student achievement in their math and English classrooms. A sample of teachers ($N = 65$) from a rural Maryland school district complete the Working with Families Self-Efficacy Scales survey (WFSES). From their responses, the researcher obtained each teachers' classroom mean on the Maryland Comprehensive Assessment Program (MCAP) from the district. From this data, the researcher compared the teachers' WFSES scores and MCAP scores to determine if a relationship existed. The data was analyzed using three Pearson Product Moment Correlations and produced three

significant findings. The study consisted of three research questions: RQ1: Is there a statistically significant relationship between rural middle school teachers' working with families self-efficacy scores, as measured by WFSES, and overall students achievement in their classes, as reported by MCAP? RQ2: Is there a statistically significant relationship between rural middle school Math teachers' working with families self-efficacy scores, as measured by WFSES, and overall students achievement in their classes, as reported by MCAP? RQ3: Is there a statistically significant relationship between rural middle school English teachers' working with families self-efficacy scores, as measured by WFSES, and overall students achievement in their classes, as reported by MCAP? The results are presented for all three of the null hypotheses.

Null Hypothesis 1

The first null hypothesis states there is not a statistically significant relationship between rural middle school teachers' working with families self-efficacy scores and overall students achievement in their classes. The results of this study reject this null hypothesis, revealing that there is a statistically significant relationship between rural middle school teachers' working with families' self-efficacy scores ($M = 75.75$) and overall students' achievement in their classes ($M = 728.16$). This result is consistent with current literature that revealed significant relationships between teacher self-efficacy and student achievement (Alacam & Olgan, 2018; Zee & Kooman, 2016). Limited researchers have explored teacher self-efficacy when working with families (Hollander, 2010; Isikci, 2018). Other researchers studied the importance of family involvement programs and the positive results on student achievement grades (O'Donnell & Kirkner, 2014).

The significant relationship identified in this study is supported by ecological systems theory (Bronfenbrenner, 1979) and Bandura's (1977) self-efficacy theory. Ecological systems theory explains the importance of the environment's influence on students' achievements

(Bronfenbrenner, 1979). Bandura's self-efficacy theory explains the importance of self-efficacy on its effects on encouragement, change, perseverance, and motivation (1979). Higher student achievement is a result of perseverance, motivation, and positive environments. It is important for school districts to understand the importance of providing teachers with opportunities to increase their self-efficacy to improve student achievement.

Null Hypothesis 2

The second null hypothesis states there is not a statistically significant relationship between rural middle school math teachers' working with families self-efficacy scores and overall students achievement in their classes. The results of this study reject this null hypothesis, revealing that there is a statistically significant relationship between rural middle school math teachers' working with families' self-efficacy scores ($M = 75.28$) and overall students' achievement in their classes ($M = 726.36$). This result is consistent with current research that states increased teacher self-efficacy produces more successful students (Schiefele & Schaffner, 2015). Zee and Koomen (2016) found teacher self-efficacy maximized students' literacy and mathematics development and concluded that high self-efficacy in teachers resulted in a willingness to implement new strategies and instructional methods to ensure all students understand. Teachers with high self-efficacy can likely assist students in developing their mathematical competence (Zee & Koomen, 2016). Also, Wang et al. (2014) determined parents' expectations and involvement in mathematics greatly affected student achievement.

The significant relationship identified in this study is supported by the achievement goal theory (Wolter, 2004) and Bandura's self-efficacy theory (1977). Achievement goal theory is defined as reasons for student achievement in relation to their personal motivation and goals that are affected by their surroundings (Dweck, 1992; Wolter, 2004). Robih (2017) explains that

teacher self-efficacy is developed throughout their education from experiences, pre-service education, and professional development. It is important for pre-service institutions to understand the importance of education on teachers' self-efficacy.

Null Hypothesis 3

The third null hypothesis states there is not a statistically significant relationship between rural middle school English teachers' working with families self-efficacy scores and overall students achievement in their classes. The results of this study reject this null hypothesis, revealing that there is a statistically significant relationship between rural middle school English teachers' working with families' self-efficacy scores ($M = 76.17$) and overall students' achievement in their classes ($M = 729.80$). Zee and Koomen (2016) determined teacher self-efficacy maximized students' literacy and mathematics development, concluding that high self-efficacy in teachers resulted in a willingness to implement new strategies and instructional methods to ensure all students understand.

The significant relationship identified in this study is also provided by the achievement goal theory (Wolter, 2004) and Bandura's self-efficacy theory (1977). Wolters (2004) and Dweck (1992) discuss the influence people and environments have on goals. Relationships between families and schools create external motivation factors that can determine if students meet their academic achievement goals. In addition, Bandura's (1977) self-efficacy theory states high teacher self-efficacy also increases student achievement (Schiefele & Schaffner, 2015).

Implications

The results of this study provide information for school districts and pre-service teacher education programs to encourage an increase in teacher self-efficacy when working with families to improve student achievement. Learning how to incorporate familial involvement in

classrooms and actively communicating with families is extremely important in teacher education (de Bruine et al., 2014; Unal & Unal, 2014).

When school leaders encourage teachers or pre-service teachers to learn to work with families, creating a higher teacher self-efficacy when working with families, student achievement increases. These relationships are imperative to ensuring teachers are persistent in the education process and can provide students with higher opportunities for achievement.

Limitations

Internal and external threats to validity in this study do exist. The researcher ensured the participants remained confidential and the data remained secure. However, other internal and external factors created limitations for this study. Internal limitations that were evident in this study were low response rate, the COVID-19 pandemic, and timing of the study. External limitations for this study were generalizability and the limited use of the Working with Families Self-Efficacy Scales (WFSES) survey.

Participants did not encounter any risks greater than their normal daily life. To ensure no violations of confidentiality or legal risks, the researcher eliminated all unnecessary procedures and collected only the minimum data needed to complete the study. The researcher saw the participants' names but maintained confidentiality throughout the study. A code to connect teachers to their classroom average MCAP scores was created by the district and kept separate from the teachers' WFSES scores. To further protect participants' privacy, the records were kept private and data was stored on a password locked computer. Only the researcher and dissertation chair have access to the data. Surveys were administered through Microsoft Forms and all results remained confidential. The Supervisor of School Improvement in the rural school

district in Maryland contacted the participants directly. The data analyst for the district provided the mean classroom results for each participant.

The researcher identifies limitations do exist with this study regardless of the precautions taken. The minimum participants required for this study was $N = 66$. The survey only produced 67 responses to the WFSES instrument, two of those were outliers and had to be removed from the data set resulting in a sample size of 65. The low response rate was because the survey was distributed when teachers were not working in their classrooms due to the COVID-19 pandemic. The low response rate was due to the timing and other external concerns by teachers. The surveys were distributed to teachers the day after they were required to transition their students to online learning. The COVID-19 pandemic required teachers to move out of their classrooms and transition to online learning. During this time, their stress levels were increased, and additional work was placed on them to quickly get their classrooms online. This could negatively impact their self-efficacy scores and altered the results of this study in addition to creating a lack of participation.

A third limitation of this study is timing. The MCAP scores were provided from the district from the 2018-2019 school year. The participants completed the WFSES during March 2020. The data was connected to each teacher from their results from the previous year, but another method would be to connect the survey data to student achievement from the same school year.

Another limitation of this study is generalizability. The researcher only used a rural population in the state of Maryland. The findings of this study can only be applied to the specific population surveyed. It is reasonable to expect the findings of this study to be congruent in other populations (urban or suburban), but the results are limited to only rural Maryland.

Lastly, the researcher recognizes the WFSES survey has only been used in two other previous studies. Each study conducted resulted in valid and reliable results. However, the researcher acknowledges the limited use of the survey in previous studies. Both the WFSES and MCAP instruments were valid and reliable as previously discussed.

Recommendations for Future Research

1. This study should be repeated using a different population to increase its generalizability. The researcher recommends that this study is repeated in another rural school district in the state of Maryland. Another method to generalize the study is to use another rural area from a different state in conjunction with their state's standardized test scores.
2. This study should be repeated during another school year that is not interrupted by a worldwide pandemic to increase participation. The would also limit the amount of stress teachers were under while completing the survey. In addition to limiting stress it would also allow for the WFSES and the MCAP achievement data to be collected during the same school year.
3. This study should be repeated under additional theoretical constructs to provide more understanding of the family perspective. The families' perspective regarding their child's teacher's self-efficacy when working with families was not considered during this study. Additional research could add an additional theoretical construct and instrument to incorporate families' perspective.

REFERENCES

- Alacam, N., & Olgan, R. (2017). Pre-service early childhood teachers' self-efficacy beliefs towards parent involvement. *Teaching Education, 28*(4), 421-434.
<http://doi.org/10.1080/10476210.2017.1324843>
- Alacam, N., & Olgan, R. (2018). Pre-service early childhood teachers' beliefs concerning parent involvement: The predictive impact of their general self-efficacy beliefs and perceived barriers. *International Journal of Primary, Elementary and Early Years Education, 47*(5), 555-569. <http://doi.org/10.1080/03004279.2018.1508244>
- Alvi, F. S., Usman, A., & Amjad, A. (2018). The ecological systems theory: A dimension of understanding the changing youth in Pakistan. *Journal of the Research Society of Pakistan, 55*(1), 95-105. Retrieved from http://pu.edu.pk/images/journal/history/PDF-FILES/7_55_1_18.pdf
- Ashim, B. & Sahin, A. (2018). Effects of parental involvement on secondary school students' mathematics achievement in Assam, India. *Research Review International Journal of Multidisciplinary, 3*(7), 275-281. Retrieved from <https://eric.ed.gov/?id=ED588191>
- Association for Middle Level Education. (2017). Retrieved from <http://www.amle.org/Home/tabid/401/Default.aspx>
- Bandura, A. (1977). Toward a unifying theory of behavioral change. *Psychological Review, 84*(2), 191-215.
- Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational Psychologist, 28*(2), 117-148. http://doi.org/10.1207/s15326985ep2802_3
- Bronfenbrenner, U. (1979). *The ecology of human development: experiments by nature and design*. Cambridge, Massachusetts: Harvard University Press. Retrieved from

https://khoerulanwarbk.files.wordpress.com/2015/08/urie_bronfenbrenner_the_ecology_of_human_developbokos-z1.pdf

Bui, K. & Rush, R. A. (2016). Parent involvement in middle school predicting college attendance for first-generation students. *Education, 136*(4), 473-489. Retrieved from <https://eric.ed.gov/?id=EJ1104215>

Caskey, M.M., Cripps, K., & Zyromski, B. (2009). Adolescents' psychological well-being and perceived parental involvement: Implications for parental involvement in middle schools. *Research in Middle Level Education Online, 33*(4), 1-13.

Castro, M., Exposito-Casas, E., Lopez-Martin, E., Lizasoain, L., Navarro-Asencio, E., & Gaviria, J. L. (2015). Parental involvement on student academic achievement: A meta-analysis. *Educational Research Review, 14*, 33-46.
<http://doi.org/10.1016/j.edurev.2015.01.002>

Chiu, M., & Xihua, Z. (2008). Family and motivation effects on mathematics achievement: Analyses of students in 41 countries. *Learning and Instruction, 18*(4), 321-336. Retrieved from https://www.researchgate.net/publication/222758504_Family_and_motivation_effects_on_mathematics_achievement_Analyses_of_students_in_41_countries

Cobanoglu, R., Capa-Aydin, Y., & Yildirim, A. (2019). Sources of teacher beliefs about development appropriate practice: A structural equation model of the role of teacher efficacy beliefs. *European Early Childhood Education Research Journal, 27*(2), 195-207.
<http://doi.org/10.1080/1350293X.2019.1579547>

- Creswell, J. W., & Guetterman, T. C. (2019). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research*. (6th ed.). New York, NY: Pearson Education, Inc.
- de Apodaca, R. F., Gentling, D. G., Steinhaus, J. K., & Rosenberg, E. A. (2015). Parental involvement as a mediator of academic performance among special education middle school students. *School Community Journal*, 25(2), 35-54. Retrieved from <https://eric.ed.gov/?id=EJ1085649>
- de Bruine, E. J., Willemse, T. M., D'Haem, J., Griswold, P., Vloeberghs, L., & van Eynde, S. (2014). Preparing teacher candidates for family-school partnerships. *European Journal of Teacher Education*, 37(4), 409-425. <http://doi.org/10.1080/02619768.2014.912628>
- Dotterer, A. M. & Wehrspann, E. (2015). Parent involvement and academic outcomes among urban adolescents: Examining the role of school engagement. *Educational Psychology*, 36(4), 812-930. <http://doi.org/10.1080/01443410.2015.1099617>
- Dweck, C. S. (1992). The study of goals in psychology. *American Psychological Society*, 3(3), 165-167. <http://doi.org/10.1111/j.1467-9280.1992.tb00019.x>
- Erol, Y. C. & Turhan, M. (2018). The relationship between parental involvement to education of students and student's engagement to school. *International Online Journal of Educational Sciences*, 10(5), 260-281. <http://doi.org/10.15345/iojes.2018.05.017>
- Evans, C. B., Cotter, K. L., Rose, R. A., & Smokowski, P. R. (2016). Substance use in rural adolescents: The impact of social capital, anti-social capital, and social capital deprivation. *Journal of Addictive Diseases*, 35, 244-257. <http://doi.org/10.1080/10550887.2016.1171671>

- Gall, M. D., Gall, J. P., & Borg, W. R. (2006). *Educational research: An introduction* (8th ed.). New York, NY: Pearson.
- Garcia, J. N. (2014). *Teacher and parent beliefs and expectations of parental involvement and how it relates to student academic achievement* (Unpublished dissertation). Texas State University, TX. Retrieved from <https://digital.library.txstate.edu/bitstream/handle/10877/5356/GARCIA-DISSERTATION-2014.pdf?sequence=1>
- Gonida, E. N. & Cortina, K. S. (2014). Parent involvement in homework: Relations with parent and student achievement-related motivational beliefs and achievement. *British Journal of Educational Psychology*, 84, 376-396. <http://doi.org/10.1111/bjep.12039>
- Green, S. B., & Salkind, N. J. (2017). *Using SPSS for Windows and Macintosh: Analyzing and understanding data* (8th ed.). NY, NY: Pearson.
- Griffin, D., & Galassi, J. P. (2010). Parent perceptions of barriers to academic success in a rural middle school. *Professional School Counseling*, 14(1), 87-100. Retrieved from <https://eric.ed.gov/?id=EJ952175>
- Halsey, P.A. (2004). Nurturing parent involvement: Two middle level teachers share their secrets. *The Clearing House*, (77) 4, 135-137. Retrieved from <https://eric.ed.gov/?id=EJ703227>
- Hampden-Thompson, G. & Galindo, C. (2017). School-family relationships, school satisfaction and the academic achievement of young people. *Educational Review*, 69(2), 248-265. <http://doi.org/10.1080/00131911.2016.1207613>

- Herges, R.M., Duffield, S., Martin, W., & Wageman, J. (2017). Motivation and achievement of middle school mathematics students. *The Mathematics Educator*, 26(1), 83-106.
Retrieved from <https://files.eric.ed.gov/fulltext/EJ1153299.pdf>
- Hill, N. E., Withrespoon, D. P., & Bartz, D. (2016). Parent involvement in education during middle school: Perspectives of ethnically diverse parents, teachers, and students. *The Journal of Educational Research*, 111(1), 12-27.
<http://doi.org/10.1080/00220671.2016.1190910>
- Hoffman, J. A., Anderson-Butcher, D., Fuller, M., & Bates, S. (2017). The school experiences of rural youths: A study in Appalachian Ohio. *Children & Schools*, 39(3), 147-155.
<http://doi.org/10.1093/cs/cdx010>
- Hollander, E. (2010). *Assessing teacher self-efficacy in implementing family-centered practices: Development of the working with families self-efficacy scales*. Florida: University of Florida. Retrieved from <https://ufdc.ufl.edu/UFE0042499/00001>
- Hughes, J.N., Im, M.H., & Allee, P.J. (2015). Effect of school belonging trajectories in grades 6-8 on achievement: Gender and ethnic differences. *Journal of School Psychology*, 53(6), 493-507. <http://doi.org/> <https://doi.org/10.1016/j.jsp.2015.08.001>
- Isikci, G. (2018). *Pre-service early childhood educators' working with families self-efficacy in relation to taking a parent education course*. Middle East Technical University, Turkey. Retrieved from <http://etd.lib.metu.edu.tr/upload/12618884/index.pdf>
- Jeynes, W. (2012). A meta-analysis of the efficacy of different types of parental involvement programs for urban students. *Urban Education*, 47(4), 706-742.
<http://doi.org/10.1177/0042085912445643>

- Kreider, H., Caspe, M., Kennedy, S., & Weiss, H. (2007). *Family involvement in middle and high school students' education. Involvement makes a difference: Evidence that family involvement promotes school success for every child of every age* (2). Cambridge, MA: Harvard University.
- Landon, K. (2014). A brief summary of Urie Bronfenbrenner's theory on child development and the impact of parent involvement. Retrieved from <https://hubbli.com/impact-of-parent-involvement/>
- Leonard, E., & Maulding Green, W. (2018). Are leader behavior and emotional intelligence related to teacher efficacy? *Journal of Values-Based Leadership*, 11(2), 1-15.
<http://doi.org/10.22543/0733.62.1225>
- MSDE. (2010). Maryland State Department of Education: Operational Tests Results. Retrieved from http://archives.marylandpublicschools.org/NR/rdonlyres/E865B914-1C2D-4B39-A276-FBC02765E950/28803/2010_MOD_Math_TechReport_041411.pdf
- MSDE. (2011). Maryland State Department of Education: Operational Tests Results. Retrieved from http://archives.marylandpublicschools.org/NR/rdonlyres/C646E418-DDFA-4DA4-8D4D-13E18ADF8B72/34400/2011_MOD_Reading_TechReport_9_SUMMARY.pdf
- MSDE. (2016). Maryland State Department of Education: Preparing World Class Students. Retrieved from <http://marylandpublicschools.org/parents/Documents/MDPreK12FamilyEngagementFramework2016.pdf>
- MSDE. (2018). Maryland State Department of Education Website – Performance. Retrieved from <https://msp2018.msde.maryland.gov/>

- MSDE. (2019). Maryland State Department of Education Website. Retrieved from <http://marylandpublicschools.org/Pages/default.aspx>
- MSDE. (2019a). Maryland State Department of Education. Retrieved from <https://md.mypearsonsupport.com/resources/reporting/MCAP2019ScoreInterpretationGuide.pdf>
- Murray, K. W., Finigan-Carr, N., Jones, V., Copeland-Linder, N., Haynie, D. L., & Cheng, T. L. (2014). Barriers and facilitators to school-based parent involvement for parents of urban public middle school students. *SAGE Open*, 4(4), 1-12. <http://doi.org/10.1177/2158244014558030>
- National Association for the Education of Young Children. (2009). Retrieved from <https://www.naeyc.org/sites/default/files/globally-shared/downloads/PDFs/resources/position-statements/PSDAP.pdf>
- National Center for Education Statistics. (2019). Retrieved from <https://nces.ed.gov/blogs/nces/post/back-to-school-by-the-numbers-2019-20-school-year>
- Nunez, J. C., Suarez, N., Vallejo, G., Valle, A., & Epstein, J. L. (2015). Relationships between perceived parental involvement in homework, student homework behaviors, and academic achievement: Differences among elementary, junior high, and high school students. *Metacognition and Learning*, 10(3), 375-406. <http://doi.org/10.1007/s11409-015-9135-5>
- O'Donnell, J. & Kirkner, S. L. (2014). The impact of a collaborative family involvement program on Latino families and children's educational performance. *School Community Journal*, 24(1), 211-234. Retrieved from <https://eric.ed.gov/?id=EJ1032271>

- O'Sullivan, R. H., Chen, Y. C., & Fish, M. C. (2014). Parental mathematics homework involvement of low-income families with middle school students. *School Community Journal, 24*(2), 165-187. Retrieved from <https://files.eric.ed.gov/fulltext/EJ1048611.pdf>
- Perkins, D.F., Syvertsen, A.K., Mincemoyer, C., Chilenski, S.M., Olson, J.R., Berrena, E., Greenberg, M., & Spoth, R. (2016). Thriving in school: The role of sixth-grade adolescent-parent-school relationships in predicting eight-grade academic outcomes. *SAGE Journal: Youth & Society, 48*(6) 739-762.
<http://doi.org/10.1177/0044118X13512858>
- Poulou, M. (2007). Personal teaching efficacy and its sources: Student teachers' perceptions. *Educational Psychology, 27*(2), 191-218. <http://doi.org/10.1080/01443410601066693>
- Read, S. I., & Miller, L. C. (1989). Inter-personalism: Toward a goal-based theory of persons in relationships. *Goal concepts in personality and social psychology, 413-472*. Retrieved from <https://psycnet.apa.org/record/1989-97460-011>
- Reynolds, A. D., Crea, T. M., Medina, J., Degnan, E., & McRoy, R. (2015). A mixed-methods case study of parent involvement in an urban high school serving minority students. *Urban Education, 50*(6), 750-775. <http://doi.org/10.1177/0042085914534272>
- Rivkin, S. G., Hanushek, E. A., & Kain, J. F. (2005). Teachers, schools, and academic achievement. *Econometrica, 73*(2), 417-458. Retrieved from <http://jstor.org/stable/3598793>
- Robih, W., Suratman, B., & Soesatyo, Y. (2017). The effects of self-efficacy, the role of teacher, parents participation to student's learning motivation at vocational high school North Surabaya. *Journal of Economics and Economic Education Research, 18*(2). Retrieved from <https://link-gale->

com.ezproxy.liberty.edu/apps/doc/A541776262/AONE?u=vic_liberty&sid=AONE&xid=5a704fd6

- Schiefele, U., & Schaffner, E. (2015). Teacher interests, mastery goals, and self-efficacy as predictors of instructional practices and student motivation. *Contemporary Educational Psychology, 42*, 159-171. <http://doi.org/10.1016/j.cedpsych.2015.06.005>
- Sehgal, P., Nambudiri, R., & Mishra, S. K. (2017). Teacher effectiveness through self-efficacy, collaboration and principal leadership. *International Journal of Educational Management, 31*(4), 505-517. <http://doi.org/10.1108>
- Seitsinger, A. M., Felner, R. D., Brand, S., & Burns, A. (2008). A large-scale examination of the nature and efficacy of teachers' practices to engage parents: Assessment, parental contact, and student-level impact. *Journal of School Psychology, 46*, 477-505.
- Thompson, A. M., Herman, K. C., Stormont, M. A., Reinke, W. M., & Webster-Stratton, C. (2017). Impact of incredible years on teacher perceptions of parental involvement: A latent transition analysis. *Journal of School Psychology, 62*, 51-65. <http://doi.org/10.1016/j.jsp.2017.03.003>
- Thoonen, E. E. J., Slegers, P. J. C., Peetsma, T. T. D., & Oort, F. J. (2011). Can teachers motivate students to learn? *Educational Studies, 37*, 345-360. <http://doi.org/10.1080/03055698.2010.507008>
- Toytari, A., Tynjala, P., Piirainen, A., & Ilves, V. (2017). Higher education teachers' descriptions of their own learning: A quantitative perspective. *Higher Education Research & Development, 36*(6), 1295-1304. <http://doi.org/10.1080/07294360.2017.1303455>

- Unal, Z. & Unal, A. (2014). Perspectives of preservice and in-service teachers on their preparation to work with parents in elementary classrooms. *The Educational Forum*, 78(2), 112-126. <http://doi.org/10.1080/00131725.2013.878425>
- Varghese, C., Garwood, J. D., Bratsch-Hines, M., & Vernon-Feagans, L. (2016). Exploring magnitude of change in teacher efficacy and implications for students' literacy growth. *Teaching and Teacher Education*, 55, 228-239. <http://doi.org/10.1016/j.tate.2016.01.011>
- Wang, M.T., Hill, N.E., & Hofkens, T. (2014). Parental involvement and African American and European American adolescents' academic, behavioral, and emotional development in secondary school. *Child Development*, 85(6), 2151-2168. <http://doi.org/10.1111/cdev.12284>
- Warner, R. M. (2013). *Applied statistics: From bivariate through multivariate techniques* (2nd ed.). Thousand Oaks, CA: SAGE Publications, Inc.
- Wassell, B. A., Hawrylak, M. F., & Scantlebury, K. (2017). Barriers, resources, frustrations, and empathy: Teachers' expectations for family involvement for Latino/a ELL students in urban STEM classrooms. *Urban Education*, 52(10), 1233-1254. <http://doi.org/10.1177/004208591560239>
- Wehrspann, E., Dotterer, A.M., & Lowe, K. (2016). The nature of parental involvement in middle school: Examining nonlinear associations. *Contemporary School Psychology*, 20(3), 193-204. <http://doi.org/10.1007/s40677-015-0071-9>
- Winterbottom, C., & Mazzocco, P. J. (2016). Reconstructing teacher education: A praxeological approach to pre-service teacher education. *European Early Childhood Education Research Journal*, 24(4), 495-507. <http://doi.org/10.1080/1350293X.2014.975940>
- Wolters, C. A. (2004). Advancing achievement goal theory: Using goal structures and goal

orientations to predict students' motivation, cognition, and achievement. *Journal of Educational Psychology*, 96(2), 236-250. <http://doi.org/10.1037/0022-0663.96.2.236>

Zee, M., & Koomen, H. M. Y. (2016). Teacher self-efficacy and its effects on classroom processes, student academic adjustment, and teacher well-being: A synthesis of 40 years of research. *Review of Educational Research*, 86(4), 981-1015. <http://doi.org/10.3102/0034654315626801>

APPENDICES

Appendix A

Working with Families Self-Efficacy Scales

This questionnaire is designed to help gain a better understanding of professionals' confidence and capabilities with skill sets in complex situations working with families. Please indicate how certain you are that you can do each of the things described below by choosing the appropriate number. Some skills are classified under more than one category; rating the same number across the whole row. For an overall proficiency in a category add column numbers and divide by the number of questions.

Rate your degree of confidence by recording a number from 0 to 100 using the scale below:

0	10	20	30	40	50	60	70	80	90	100
Cannot do at all					Moderately Can do				Highly certain can do	

Working with Families Self-Efficacy Scales

Working with Family Skills	Family-School Communication Efficacy	Family Diversity Efficacy	Teacher Role with Families Efficacy
Discuss with parents your ideas and observations with their child.	1.		
Assist a parent to feel comfortable in talking with you about their concerns.	2.		
Balance your opinions about what a child needs with a parent who has a different opinion than you.	3. ____		
Work out a compromise with a parent when you strongly disagree with them.	4. ____		
Respond effectively to a parent who seems upset with you.	5. ____		
Assist a parent who seems frustrated with their child.	6.		
Show a parent that you care about their child when they react like you do not like their child.	7. ____		
Effectively resolve a conflict you have with a parent.	8.		
Give parents specific information about what they can do to influence their children's learning and development.	9.		1.
Communicate with parents of differing social classes about how they can support their children's development.		1. ____	2. ____
Understand the difficult situations in which families may find themselves.		2.	
Feel comfortable in working with families of different cultures and socioeconomic circumstances.		3. ____	

Working with Families Self-Efficacy Scales
page 2

Understand the particular constraints that may limit a family's involvement in their child's learning and daily activities.		4. ____	
Feel comfortable in working with nontraditional families such as: Gay/Lesbian families, Multigenerational families, Single Parent families, Adoptive/Foster families.		5.	
Provide a warm, inviting interaction with caregivers from different types of families.		6.	
Understand how your view of children may differ from the parents' view of their children.		7. ____	
Involve parents who have limited resources and/or time in their child's learning and development.		8. ____	3. ____
Understand the unique knowledge and strengths a child's family possess.		9.	4.
Create opportunities to develop positive, trusting relationships with each child's parents/caregivers.			5. ____
Motivate parents to make the changes they would like to in functioning better as a family.			6.
Assist parents in improving how they parent.			7.
Offer parents opportunities to participate in their child's development and learning.			8. ____
Design school events in which parents can actively participate with their child to develop the child's learning.			9.
Schedule school events so parents are active participants.			10. ____
Invite parents to express their perspective as key decision makers in their child's development.			11. ____
Intervene to help when a family is in crisis.			12.
Assist a family in accessing needed services in the community.			13.
	Family-School Communication Efficacy	Family Diversity Efficacy	Teacher Role with Families Efficacy

The Working with Families Self-Efficacy Scales rating contains five categories: Low Self-Efficacy, Fair Self-Efficacy, Moderate Self-Efficacy, High Self-Efficacy and Proficiency Self-Efficacy working with families. See chart below:

0	10	20	30	40	50	60	70	80	90	100	
0 - 31% Low Self-Efficacy			32 - 52% Fair Self-Efficacy		53 - 73% Moderate Self-Efficacy		74 - 94% High Self-Efficacy		95-100% Proficient Self- Efficacy		
Cannot do at all			Moderately Can do				Highly certain can do				

Appendix B

Demographic Information

Please choose an answer below for each question that best describes you.

1. Please identify the age range that most accurately describes you:
 - a. 18-20
 - b. 21 – 25
 - c. 26 – 30
 - d. 31 – 35
 - e. 36 – 40
 - f. 41 – 45
 - g. 46 – 50
 - h. 51 – 60
 - i. Over 60

2. Please identify your gender:
 - a. Male
 - b. Female

3. Please identify your ethnicity
 - a. Asian
 - b. African American
 - c. Hispanic
 - d. Caucasian
 - e. Native American
 - f. More than one race
 - g. Other

4. Please select the number of years you have been teaching:
 - a. 0 – 1 years
 - b. 2 – 4 years
 - c. 5 – 7 years
 - d. 8 – 10 years
 - e. More than 10 years

Appendix C

Permission to use WFSES Instrument

D

Mon 7/1/2019 12:26 PM

Evans, Sarah



Hello Sarah,

I received your email to my LinkedIn email account. This is my professional account. Please use this for any further communications.

Yes I remember our conversations a few weeks back. Yes, I give you permission to use the WFSES instrument for your dissertation, future research and future journal articles. The University of Florida asks that you make proper reference back to the original instrument and dissertation. UF provides the dissertation as a free source to increase knowledge and access to education to all. WFSES instrument is valid and reliable based on the previous research, any modification will make the instrument invalid. Since you are surveying English speaking respondents, I expect no modification requests.

As per our last conversation, this dissertation research and WFSES was built on 15 years of personal and professional experience working with school teachers as a counselor. Most of my foundation was built on inner city parental involvement sometimes looking "different" than suburban parental involvement but that should not be graded as better. In all cases, parental/family/community involvement in a child's development leads to success.

I look forward to your research and how it continues to support the need for research, training and inclusion of all types of caregivers.

Sincerely,
Erika

Dr Hollander,

Good afternoon. I hope you are having a great week. We talked on linked in a couple of weeks ago and you said it would be ok if I used your valid and reliable instrument (working with families self efficacy scales) that you created during your dissertation for research purposes in my dissertation. Would you please provide me with a response to this email stating that you do allow me to use it?

Thank you in advance,

Sarah Evans
Liberty University
EdD student
M: 804-920-3784

Appendix D

Recruitment Letter for Teachers

Dear Middle School Educators,

As a graduate student in the School of Education at Liberty University, I am conducting research as part of the requirements for a doctoral degree. The purpose of my research is to determine if a predictive relationship exists between the self-efficacy of teachers' working with families and student achievement, and I am writing to invite you to participate in my study.

If you are 18 years of age or older, a middle school math or English teacher in [REDACTED] County, and are willing to participate, you will be asked to complete a survey consisting of demographic questions and the Working with Families Self-Efficacy Scale. It should take approximately 15-20 minutes for you to complete the procedures listed. A classroom average of your students' MCAP score will be provided to me by the district, stripped of identifying information. Your name and other identifying information will be requested as part of your participation, but the information will remain confidential.

To participate, go to the survey link or use the QR code below.



A consent document is provided as the first page you will see after you click on the survey link above. The consent document contains additional information about my research. Please electronically sign the consent form by typing your name before participating in the survey.

If you choose to participate, you can also be entered into a raffle for a \$100 Amazon gift card. After consenting to the study, you will have the opportunity to type your email address to be entered into the raffle.

Sincerely,

Sarah Evans
Doctoral Candidate
Liberty University

Appendix E

Recruitment Follow-up Letter for Teachers

Dear Middle School Educators,

As a graduate student in the School of Education at Liberty University, I am conducting research as part of the requirements for a doctoral degree. Last week an email was sent to you inviting you to participate in a research study. This follow-up email is being sent to remind you to complete the survey if you would like to participate and have not already done so. The deadline for participation is March 3, 2020.

If you choose to participate, you will be asked to complete a survey consisting of demographic questions and the Working with Families Self-Efficacy Scale. It should take approximately 15-20 minutes for you to complete the procedures. A classroom average of your students' MCAP scores will be provided by the district, stripped of identifying information. Your name and other identifying information will be requested as part of your participation, but the information will remain confidential.

To participate, go to the [survey link](#) or use the QR code below.



A consent document is provided as the first page you will see after you click on the survey link above. The informed consent document contains additional information about my research. Please electronically sign the consent form by typing your name before participating in the survey. If you choose to participate, you can also choose to be entered into a raffle for a \$100 Amazon gift card. After consenting to the study, you will have the opportunity to type your email address to be entered into the raffle.

Sincerely,

Sarah Evans
Doctoral Candidate
Liberty University

Appendix F

Consent Form

The Self-Efficacy of Rural Middle School Teachers Working with Families in Relation to Student Achievement

Sarah Evans
Liberty University
School of Education

You are invited to participate in a research study of the self-efficacy of teachers working with families and its relationship to student achievement. You were selected as a possible participant because you are 18 years of age or older and a middle school math or English teacher in [REDACTED]. Please read this form and contact the researcher if you have any questions before agreeing to be a participant in the study.

Sarah Evans, a student in the School of Education at Liberty University, is conducting this study.

Background Information: The purpose of this study is to examine the possible relationship between the self-efficacy of math and English middle school teachers' working with families and student achievement in a rural school district. Teachers' beliefs in their ability to incorporate families into the learning environment can affect students' ability to succeed. This study will determine if a statistically significant relationship exists between the self-efficacy of teachers' working with families and student achievement.

Procedures: If you agree to be a participant in this study, I would ask you to do the following:

1. Complete a confidential survey that consists of demographic questions and the Working with Families Self-Efficacy Scale. The survey should take approximately 15 minutes to complete.
2. A classroom average of your students' MCAP scores will be provided by the district, stripped of identifying information.

Risks: The risks involved in this study are minimal, which means they are equal to the risks you would encounter in everyday life.

Benefits: Participants should not expect to receive a direct benefit from taking part in this study.

Benefits to society and education include learning more about the impact of the self-efficacy of teachers' working with families on student achievement. In addition, schools, school districts, and universities may be able to use this information for professional development opportunities and pre-service teacher education.

Compensation: Participants will not be directly compensated for participating in the study. Participants will be entered into a drawing for a \$100 Amazon gift card if they choose to enter their email address below.

Confidentiality: The records of the study will be kept private. In any sort of report I might publish, I will not include any information that will make it possible to identify a subject. Research records will be stored securely, and only the researcher and the research specialist will have access to the records. I may share the data I collect from you for use in future research studies or with other researchers; if I share the data that I collect about you, I will remove any information that could identify you, if applicable, before I share the data.

- Participants and their schools will be assigned pseudonyms to conceal their identities.
- Data will be stored on a password-protected computer and may be used in future presentations. After three years, the researcher will delete all electronic data.

Voluntary Nature of the Study: Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with Liberty University. If you decide to participate, you are free to withdraw at any time without affecting those relationships.

How to Withdraw from the Study: If you choose to withdraw from the study, please contact the researcher at the email address/phone number included in the next paragraph. Should you choose to withdraw, data collected from you will be destroyed immediately and will not be included in this study.

Contacts and Questions: The researcher conducting this study is Sarah Evans. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact her at sevans70@liberty.edu or 804-920-3784. You can also contact the researcher's faculty chair, Dr. Katie Thompson, at kathompson5@liberty.edu.

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the Institutional Review Board, 1971 University Blvd., Green Hall Ste. 2845, Lynchburg, VA 24515 or by email at irb@liberty.edu.

Please notify the researcher if you would like a copy of this information for your records.

Statement of Consent: I have read and understood the above information. I have asked questions and have received answers. I consent to participate in the study.

Signature of Participant

Date

Appendix G

LIBERTY UNIVERSITY
INSTITUTIONAL REVIEW BOARD

March 9, 2020

Sarah Evans

IRB Exemption 4204.030920: The Self-Efficacy of Rural Middle School Teachers Working with Families in Relation to Student Achievement

Dear Sarah Evans,

The Liberty University Institutional Review Board has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds your study to be exempt from further IRB review. This means you may begin your research with the data safeguarding methods mentioned in your approved application, and no further IRB oversight is required.

Your study falls under exemption category 46.101(b)(2), which identifies specific situations in which human participants research is exempt from the policy set forth in 45 CFR 46:101(b):

(2) Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) if at least one of the following criteria is met:

(iii) The information obtained is recorded by the investigator in such a manner that the identity of the human subjects can readily be ascertained, directly or through identifiers linked to the subjects, and an IRB conducts a limited IRB review to make the determination required by §46.111(a)(7).

Please note that this exemption only applies to your current research application, and any changes to your protocol must be reported to the Liberty IRB for verification of continued exemption status. You may report these changes by submitting a change in protocol form or a new application to the IRB and referencing the above IRB Exemption number.

If you have any questions about this exemption or need assistance in determining whether possible changes to your protocol would change your exemption status, please email us at irb@liberty.edu.

Sincerely,



Administrative Chair of Institutional Research
Research Ethics Office

LIBERTY
UNIVERSITY

Liberty University | Training Champions for Christ since 1971