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Parental Support and Online Sixth-Grade Students' Academic Performance: A Survey Research

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Doctor of Education in Organizational Leadership

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Dedication

This dissertation is dedicated to my family and all schools with online K-12 programs.

Acknowledgements

Dr. Libi Shen was a vital part of this dissertation. Her expertise pushed me to do better and be better as I reached each milestone in the doctoral process. Dr. Shen was an invaluable asset in supporting my goal of earning a doctorate. Dr. Joe Rumenapp was instrumental in supporting my research and ensuring sound methodology was used to complete this study. His commitment to answer questions and clearly explain statistical analysis was impressive and appreciated. Dr. McMichael modeled real leadership in guiding me through each university requirement, and Dr. Maxwell provided valued feedback to make my research stronger. Thanks to my committee for helping me reach my goal.

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I also would like to acknowledge the parents who took the time to participate in my research. Without your willingness to help, this project would not have been realized. The information you provided will help K-12 online schools grow and develop as they continue to learn how best to support students in academia.

Abstract

Despite the growing popularity of full-time virtual schools, too many students have not found success. The purpose of this quantitative correlational study was to explore the relationship between parental involvement and online middle school students' academic performance at one public online school in the southern United States. The research question asked if there was a relationship between parental involvement in the form of encouragement, modeling, reinforcement, and instruction and sixth-grade students' academic performance assessed through GPA in an online K-12 public school. The null hypothesis stated there was no statistically significant relationship between parental involvement and students' academic performance. Data were collected from 143 participants through a survey questionnaire online. SPSS V26 was used for data analysis. The researcher performed Spearman's correlation to determine if there was a relationship between parental involvement and students' academic performance. Each of the four parental involvement factors were analyzed to determine if there was a relationship to students' academic success. The results showed no significant relationship between students' academic performance and the constructs of reinforcement, instruction, and modeling. Parental encouragement was the only mechanism statistically significant in revealing a negative relationship with online sixth-grade student academic performance. The null hypothesis was rejected. Recommendations for further research are provided.

Keywords: online education, parental involvement, middle school, K-12, student achievement, virtual learning

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Chapter 1: Introduction

Full-time K-12 online schools in the United States have surged in popularity as families looked for an alternative to a traditional scholastic setting. Stakeholders such as educational organizations, business leaders, and foundations seeking to revolutionize learning and teaching have helped over 500 virtual schools enroll nearly 300,000 students whose parents found value in the flexible, less-restricted learning environment (Barbour et al., 2018; Molnar et al., 2019). In the southern state where I conducted this research, curriculum standards for public schools, whether online or traditional, are the same. Virtual students are required to master the same skills as their public-school counterparts, demonstrating mastery by passing yearly high-stakes testing provided by the state. Parents living anywhere in the state could enroll their children in the online school. Unfortunately, students' academic performance in online education lags behind learners from a brick-and-mortar setting (Barbour, 2017; Friedhoff, 2017).

While the content of traditional public schools is duplicated in virtual schools, the role of parents in K-12 online education is radically different (Liu et al., 2010). Although virtual schools provide students with an educational platform with state-required content, teachers in virtual schools are not able to monitor students in the same way as teachers in a traditional setting. The job of encouraging, modeling, reinforcing, and instructing students in their educational journey falls heavily on parents (Borup, 2016; Borup et al., 2015; Curtis & Werth, 2015; Kumi-Yeboah et al., 2018). Parents often find they are not prepared for the level of support online K-12 education requires (Borup et al., 2019), resulting in lower student academic achievement.

This chapter outlines the background, context, and history of online education as well as provides the conceptual framework guiding this research. The problem statement is explained,

and the significance of the study is discussed. The chapter also presents the research question, hypotheses, and the limitations and delimitations of the study. Finally, the key terms are defined, and a summary is provided.

Background

The possibilities and capabilities offered by technology have propelled the popularity of virtual learning since the beginning of the late twentieth century. Farmer and West (2019) found over two million students in 2013-2014 were enrolled in some form of distance education provided in all fifty states and the District of Columbia. By 2016, five million full-time virtual students were recorded (Henderson, 2018). The popularity of online education continued through the years reaching an unprecedented level in the spring of 2020. A pandemic caused by COVID-19 forced schools to close due the highly contagious nature of the virus (Kaden, 2020). Teachers quickly converted their classrooms into virtual learning to meet the needs of students.

Families have been enticed by online education for a variety of reasons, including needing flexible hours to accommodate various practice schedules or medical appointments. Online education has provided a viable solution for families who struggled with the challenges of traditional schools, such as meeting schedule requirements or avoiding unrelenting social dynamics. Without having to change residency to enroll in another public school or take on the financial burden of a private education, families could apply to a public online school and maintain the state-mandated curriculum and standards expected of all public schools in the state.

In K-12 online schools, a parent is often labeled a “learning coach,” identifying the impact a parent has on a child’s education (Hasler-Waters & Leong, 2014). Different than dropping a child off at a brick-and-mortar school, online education allows all students to work from a remote setting, which is often their home. Since the classroom is replaced by a space in

the family's residence, parents have to provide a structured, organized environment where academics are monitored. Parents have to assume the role of managing the learning environment because teachers, unable to see students, are not able to supervise or motivate students to achieve success. Only learning coaches are able to monitor student work and hold students accountable in real time in a full-time online environment. Although students in middle school are often old enough to stay home by themselves, they could struggle with completing assignments and remaining focused on academic tasks. Unfortunately, parents are often not educated in the responsibility or expectations of being a learning coach or do not have the time required to take advantage of the education offered by the virtual school.

Hoover-Dempsey and Sandler's (2005) model of parental involvement and Epstein's (2011) overlapping spheres of influence provided the conceptual framework for this study. The model of parental involvement views parents as influenced by intrinsic beliefs and extrinsic social interactions through four engagement practices: encouraging, modeling, reinforcing, and instructing. Parental academic interaction with their children creates the foundation upon which student achievement is based (Hoover-Dempsey & Sandler, 2005). The model also includes the attributes students are required to develop and maintain in order to attain success in the classroom, such as academic and social self-efficacy, self-regulation, and intrinsic motivation. Although student demonstration of these traits is necessary, the practice is not automatically inherent for most students; thus, parental encouragement, modeling, reinforcing, and instructing are vital in promoting and facilitating student achievement. Although the Hoover-Dempsey and Sandler model was developed for the traditional setting, it stands to reason that parental involvement in the virtual setting is equally, if not more, influential in a virtual school.

Epstein's (2011) overlapping spheres of community, family, and school have influenced student performance in traditional schools. In a Venn-diagram style, when a student benefits from the intersection of the three spheres, success is realized. With respect to the family sphere of influence, brick-and-mortar staff want and need parents to "assist, guide, and influence" (Epstein, 2011, p. 3) their children at home, and the expectation is no different for virtual education. This is not to say the school or community sphere is less vital in developing successful students in an online setting; however, the nature of the online home environment lends itself toward the crucial role parents of online students have in shaping their children's academic achievement. Studying the relationship between parent involvement and student online academic achievement might help parents understand both the role they occupy in virtual school and how to support their middle-school online student successfully.

Statement of the Problem

Although K-12 online public education has gained popularity, not all students have found success (Borup et al., 2019; Borup & Stevens, 2016; Hasler-Waters et al., 2014). The general problem is that student attrition is higher in the virtual setting than in traditional schools (Borup & Stevens, 2016; de la Varre et al., 2014; Freidhoff, 2017). Molnar et al. (2019) found that graduation rates for full-time online schools averaged around 50% versus the national average of 84% for face-to-face schools during the same time period. Additionally, traditional high school courses had a 20% higher passing rate than virtual courses (Friedhoff, 2017). Although parental involvement exhibited benefits in the brick-and-mortar setting, virtual schools needed even more parental participation in order to expand student engagement and decrease student attrition (Borup et al., 2019). Since online learning allows students to engage with state-mandated curricula independent from the physical presence of teachers, parents (i.e., learning coaches) are

shifted into the leadership role of student accountability (Hasler-Waters & Leong, 2014). The increased requirement of parental support in online learning influences the achievement of learners (Hasler-Waters et al., 2018; Sorensen, 2012). The specific problem is that previous research has not addressed the relationship between parental involvement and the success of a learner in a full-time public online middle school. Over the past decade, research on the relationship between parental involvement and student success has been conducted solely at the high-school level (Borup, 2016; Borup et al., 2011; Borup et al., 2013; Borup et al., 2015; Borup et al., 2019; Curtis, 2013). This study sought to understand the role of parental involvement in online education.

Purpose of the Study

Student academic achievement in the classroom has been a priority, and schools constantly look for ways to develop better results. Since teachers are not physically present in a virtual school, examining parental involvement is necessary as parents must fulfill a larger role in their children's education. The purpose of this quantitative study was to explore the relationship between parental support and online sixth-grade students' academic performance at a public school. Using Hoover-Dempsey and Sandler's (2005) four mechanisms, I divided parental involvement into encouragement, modeling, reinforcement, and instruction. Parent participants of sixth-grade students self-evaluated their involvement on each of the four parental involvement constructs. Student achievement grades in four, core-content courses that are used to calculate grade point average (GPA) provided the achievement measure for each student. The four content courses are math, science, English, and social studies. Out of a population of 250, 143 parents with children in sixth grade participated in the study. The data determined the

relationship, if any, between parental involvement and students' academic success. This study focused on one public, virtual middle school that only offered classes online.

Research Question

The focus of this study was to determine whether a relationship existed between parental involvement and students' academic performance in a public, online middle school. Parental involvement was broken down into four categories: encouragement, modeling, reinforcement, and instruction. Parental encouragement entailed supporting student educational achievement, parental modeling provided opportunities for students to observe academic behaviors, parental reinforcement promoted praising positive behaviors conducive to learning, and parental instruction required direct teaching between a parent and child (Hoover-Dempsey & Sandler, 2005).

RQ1. What is the relationship between parental involvement and the academic performance of sixth-grade students attending online K-12 public school full-time?

H_0. There is no statistically significant relationship between parental involvement and the academic performance of sixth-grade students attending an online, K-12 public school full-time

H_1. There is a significant relationship between parental involvement and the academic performance of sixth-grade students attending an online, K-12 public school full-time.

Rationale, Relevance, and Significance of the Study

The rationale for conducting this research was to determine if there was a relationship between parental involvement and students' academic performance of sixth-grade students who attended online school full-time. Parents have historically been a vital component of K-12 education. Since online students are learning not only the curriculum but how to organize their work and their schedule, parental guidance is often necessary. It is important for teachers in

online education to understand how parental factors relate to student academic success in middle school as thoroughly as in a brick-and-mortar setting.

Over the past two decades, online schools have been the fastest growing sector of education (Borup & Stevens, 2015) making research relevant and timely. Research demonstrating the positive effect of parental involvement in traditional middle schools (Deslandes & Bertrand, 2005; Fan & Chen, 2001; Sui-Chu & Willms, 1996) should not be automatically transferred to virtual education. In an online school, students learn remotely from home without the physical presence of a teacher, so the role of the parents becomes even more prominent. For middle-school students, especially sixth-grade students who are newly classified in the middle-school division of K-12 education, the desire to be independent is often offset by students not yet being able to master the task.

The significance of this study was to provide insights into how parental involvement related to their children's success in online education. By dividing parental involvement into four components: encouragement, modeling, reinforcement, and instruction, and determining how each correlated to students' academic performance, the study may provide administrators and teachers with information on how to best equip and empower parents. Parents of online middle-school students might gain an awareness on how to effectively manage the role of being a learning coach to a full-time online K-12 student. Since online middle schools have not yet benefitted from research identifying a correlation between parental involvement and student academic success, this study should contribute to the field.

Definition of Key Terms

Academic performance. The achievement level a student has attained (Ravitch, 2010) through the curriculum provided, in this study, by the online platform of the K-12 virtual school. It is measured by the GPA.

Learning coach. An adult, usually a parent or guardian, who serves as the primary contact for the school and the manager of their child's online education (Hasler-Waters & Leong, 2014).

Model of parental involvement. Hoover-Dempsey and Sandler's (2005) explanation of parents' capability to encourage, model, reinforce, and instruct their children and the influence these categories have on children's academic success.

Online school. A public, accredited school offering courses through the internet (Barbour & Mulcahy, 2009). This term is used interchangeably with *virtual school* and *distance education* to describe education delivered primarily on the computer.

Overlapping spheres of influence. Epstein's (2011) theory that student learning is impacted by interwoven factors from the community, family, and school.

Parent. An adult with a legal or ethical responsibility to care for a student and who is not a staff member of the online school (Hasler-Water et al., 2018).

Parental encouragement. The clear and positive support by parents to engage their children in learning activities in an online setting (Liu et al., 2010). Encouragement can take the form of reassurance and praise.

Parental instruction. Direct interaction between a parent and student where information on strategies, processes, and outcomes are discussed in working through educational content and skills in an online school (Liu et al., 2010).

Parental modeling. The ability for students to learn positive academic behaviors based on observing their parents conduct, interest, and attitudes related to education (Liu et al., 2010).

Parental reinforcement. Parents encouraging positive academic behaviors the student has demonstrated that results in a repetition of the same behaviors (Liu et al., 2010).

Assumptions, Delimitations, and Limitations

This quantitative study used a Qualtrics survey for parents to fill out anonymously. The assumption was that all parents had the faculty to accurately interpret their experiences about how they interacted with their child's online education and correctly reported their child's academic performance. Altercasting, the practice of projecting an identity in line with one's goals (Weinstein & Deutschberger, 1963) instead of accurately self-evaluating, was possible. The accomplishments of children provided continual markers of how parents were doing their job, and it might be human nature for parents to report a higher level of involvement in their children's education. Since responses were both confidential and anonymous, there should have been no need for parents to inflate either their children's academic performance or their self-assessment of their parental involvement. Additionally, it was assumed that the parent who served as the child's learning coach was the one who filled out the survey.

A delimitation of this research was limiting the data to one full-time online school in the southern part of the United States. That I was able to only recruit families from one public online school, despite having representation from the entire state, could have affected the results. Additionally, the study surveyed only parents of middle-school students in sixth grade. Although the middle school included the sixth through the eighth grades, focusing on the youngest grade level allowed me to specifically identify steps parents could take to best support their children's online education upon entering a new division.

A corresponding limitation of only surveying parents from one online school was having a limited point of view of learning coaches. Schools vary in daily expectations, communications, and procedures, and online education is no exception. The data collected from one online school might prove more constrained since the participants were only exposed to one type of school setting. A second limiting factor stemmed from parents not being centrally located, making researcher observations impossible. The data for the survey relied on how parents interpreted the terms *encouragement*, *modeling*, *reinforcement*, and *instruction* as well as their honesty in divulging how they interacted with their online student. Generalizing the results from this study to all virtual schools was a third limiting factor. The sixth graders from one online school in the South consisted of a small sample compared to the entire population of virtual sixth-grade students. Yet, this study can be used to provide insight into similar online schools. Finally, since this study was correlational, it cannot be used to predict a cause-and-effect relationship between parental involvement and students' academic performance.

Summary

Online education is growing in status despite lower-performing statistics. Understanding how to create an educational alternative where students thrive and find success is necessary as the popularity of virtual learning increases. Chapter 1 outlined the background and conceptual framework used in this quantitative research. The problem statement, significance of the study, research question, limitations, delimitations, and definitions of key terms used in this study were also provided. Chapter 2 provides a review of the literature concerning online education and the role of parents in online education as well as a description of the conceptual framework providing the basis of this research. Chapter 3 contains the methodology of this quantitative study explaining the research design and specific procedures used in collecting data. Chapter 4

presents the data and provides a summary of the results. Chapter 5 discusses the research findings, provides a conclusion of the study, and makes recommendations for further research.

Chapter 2: Literature Review

Today's parents have options in how their children receive an education. No longer must students attend a brick-and-mortar school to complete a grade or earn a high school diploma. For families who need or want an alternative to traditional school but are not comfortable with homeschooling, virtual education is a viable choice. Online K-12 education has continued to gain popularity in the 21st-century despite an attrition rate higher than in a traditional setting and weaker student academic growth overall (Freidhoff, 2017). Most states have shown online public-school students perform worse in reading and math than students who attend brick-and-mortar schools (National Alliance for Public Charter, 2016). Despite these findings, Queen and Lewis (2011) discovered that 74% of school districts with established distance education programs in the country plan to extend virtual learning within the next three years. These statistics have brought up concerns about the effectiveness of K-12 education online and the necessity in determining the factors upon which improvement is attained.

Although the content of a traditional class has been replicated online, the job of parents dramatically changes in online education (Liu et al., 2010). The role teachers execute in monitoring, tutoring, and encouraging students in a traditional classroom becomes the responsibility of parents in the virtual world (Borup, 2016; Borup et al., 2015; Curtis & Werth, 2015; Kumi-Yeboah et al., 2018). With different, new, and expanded expectations in the online culture, parents often find themselves unprepared to provide the level of support required (Borup et al., 2019). To date, research of parental involvement has either been focused on the traditional setting or at the high-school level in virtual schools (Borup, 2016; Borup et al., 2015; Borup et al., 2019; Curtis & Werth, 2015; de la Varre et al., 2014; Hasler-Waters et al., 2014).

Unfortunately, there has been very little research on parental involvement for middle school online students.

Study Topic

The topic of this study was parental support for online middle school students. The role of parents in online learning significantly increases since teachers are not in the same physical location as students (Borup et al., 2015). As a result, parents must confirm their children complete assignments, attend synchronous classes or watch available recordings, and provide instructional assistance as needed. In short, classroom management tasks are shifted from teachers to students' parents, making active parental involvement in virtual education a necessity. In this study, I examined how parents engage in the learning of online middle-school students and the effect it had on student performance.

Context

Public online education provides flexibility for students to learn remotely without having to attend a brick-and-mortar school. The academic state standards are the same in a virtual school as they are in a traditional building, and parents have an opportunity to create a schedule that fits the needs of their family. Yet, with the loss of a physical building for students to attend, classroom management becomes the job of the parents. The purpose of classroom management is to verify students are focused, engaged, and learning the curriculum. Little or poor classroom management influences student achievement regardless of academic setting, because students are not being held to the expectations of completing academic work. Gill et al. (2015) found low student engagement to be a significant challenge in online education due to teachers' inability to confirm whether students were on-task or not. Teachers, still the content experts, provided the curriculum and guided students through the skills necessary to master, but had limited ability to

ensure participation. As a result, the bulk of teaching and modeling classroom management techniques fell to the parents.

Significance

The significance of this study was to contribute to the online education field, and the role parental support played in the success of middle-school students. Borup et al. (2013) found in online learning that students reported spending 300% more time with their parents in a learning environment than with their teachers. This is vastly different from a traditional school setting where teachers provide the bulk of a student's academic environment. The increased interaction between parents and children provides parents with many opportunities to influence student achievement. Since parents are required to take over the classroom management role in virtual learning, it is logical that parent involvement is vital in helping students achieve success. Unfortunately, parents are often not prepared to take over all the roles necessary in online education upon enrolling (Hasler-Waters et al., 2014). Additionally, administrators should recognize the importance of parental involvement in student success to help promote and encourage beneficial practices. For the health and longevity of K-12 virtual education, schools need to understand how online students achieve success to help reduce attrition and increase yearly academic growth.

Since online K-12 education is continuing to gain momentum, helping parents understand how to create an environment that effectively promotes student success is essential. Since the physical presence of certified teachers is absent in the online setting, parents must take over the classroom management tasks in their home to support student learning. Adult online learners can manage their schedules and organize their environment to meet the requirements in attaining academic achievement. For younger students, especially those in middle school, these skills are

not inherent. The study skills and academic habits students are taught in middle school are likely repeated through high school. Since parents are the most prevalent educational role model for their children in online education, identifying specific parental involvement practices which benefit student performance in middle school is vital and the reason I chose to conduct this study.

Research on the positive effect parents have on student performance in brick-and-mortar schools has been substantiated, but the online educational environment has not benefitted from similar studies (Borup et al., 2013). Although research has provided information on parental involvement of virtual high-school students, the conclusions should not be automatically transferred to lower grades. This study could contribute to understanding how parents effectively manage the role of being a learning coach to online middle school students. Based on the research finding of this study, recommendations are offered.

Problem Statement

Although K-12 online public education is gaining popularity, not all students are finding success (Borup et al., 2019; Borup & Stevens, 2016; Hasler-Waters et al., 2014). Specifically, student attrition is higher in the virtual setting than in traditional schools (Borup & Stevens, 2016; de la Varre et al., 2014; Freidhoff, 2017). Since online learning allows students to engage with state-mandated curriculum independent from the physical presence of teachers, parents (i.e., learning coaches) are shifted into the primary role of holding students accountable (Hasler-Waters & Leong, 2014). The increased responsibility of parental support in online learning influences the achievement of learners (Hasler-Waters et al., 2018; Sorensen, 2012). Research on the relationship between parental involvement and students' academic performance in online

middle schools is limited. The focus of this study was on the relationship between parental involvement and student academic performance in an online middle school.

Organization

Databases used to search the research included ProQuest Education Journals, Google Scholar, SAGE Journals, Directory of Open Access Journals, LearnTechLib, ProQuest Dissertations & Theses, ERIC ProQuest, and EBSCO host. Keywords and phrases used for this literature review included: *online education*, *virtual education*, *parental support*, *online learning*, *cyber schools*, and *learning coaches*. General online internet searches using the same keywords and phrases were also done. Any article or research found in a general search was vetted through the scholarly databases previously mentioned to verify the source's integrity. I categorized three types of articles, including peer-reviewed, popular, and online, into six different categories: factors of virtual school, virtual school history and data, virtual school benefits, virtual school concerns, school perspective, and family perspective. The same six categories were used to identify topics of relevant dissertations and books. Table 1 presents a list of search categories and number of sources referenced. I created six topics of examination, including factors of virtual school, virtual school history and data, benefits and concerns of virtual schools, and school and family perspectives of virtual schools. Peer-reviewed articles were found in each category for a total of 56 references. Additionally, 27 popular articles, 7 online references, and 14 published dissertations provided information for this study. In total, I reviewed and used 104 sources in the study.

Table 1

Summary of Studies by Topics

Topic of examination	Peer-reviewed articles	Popular articles	Online articles	Books/Dissertations
Factors of virtual school	15	4	0	3
Virtual school history and data	8	10	3	3
Virtual school benefits	11	4	1	2
Virtual school concerns	3	3	0	2
School perspective	7	2	3	0
Family perspective	12	4	0	4
Total	56	27	7	14

Chapter 2 begins by introducing parental involvement in online K-12 education. Included in the introduction are sections explaining the research topic, context, significance, problem statement, documentation, and organization. Following the introduction, subsequent topics on parental involvement in online education are included: conceptual framework, review of research literature, review of methodological issues, synthesis of research finding, and a critique of previous research. The conceptual framework consisted of two theoretical models on parental support in education and I discuss how they drive this research. The review of literature and methodological issues provide a historical summary of previous research and the methods used to determine strengths and challenge areas in understanding parental involvement in online

education. The synthesis of research findings offers generalizations of the research and analyzes the perceptions of how parents are involved in virtual schools from the perspective of students, teachers, and parents. The critique of previous research exposes a gap in the literature that needs further study. Finally, Chapter 2 concludes with a summary of the literature review.

Conceptual Framework

Parents are considered an essential component in educating students. With the rising popularity of online schools combined with the increasing responsibility of parents to accept the job of classroom management, understanding the intricacies of parental involvement is vital. The conceptual framework for this study centers around the Hoover-Dempsey and Sandler model of parental involvement and Epstein's overlapping spheres of influence. Based on Bandura's (1977, 1986) theory of social learning in which children tend to emulate parent behaviors and beliefs, the Hoover-Dempsey and Sandler model views parental involvement as influenced by intrinsic beliefs and extrinsic social interactions (Hoover-Dempsey & Sandler, 1997). Parents' ability to encourage, model, reinforce, and instruct students are important in a traditional school and could prove vital in an online setting. Similarly, the importance of Epstein's (2011) overlapping spheres of influence of community, family, and school have proven to be essential for student success in traditional schools and might prove instrumental in online education. Studying the relationship between parental support and online students' academic performance can provide insight into the influence parents have had on students' success in sixth grade. This research could help parents understand not only the different role parents play in online education, but how to successfully support middle-school students in a virtual setting.

Hoover-Dempsey and Sandler Model

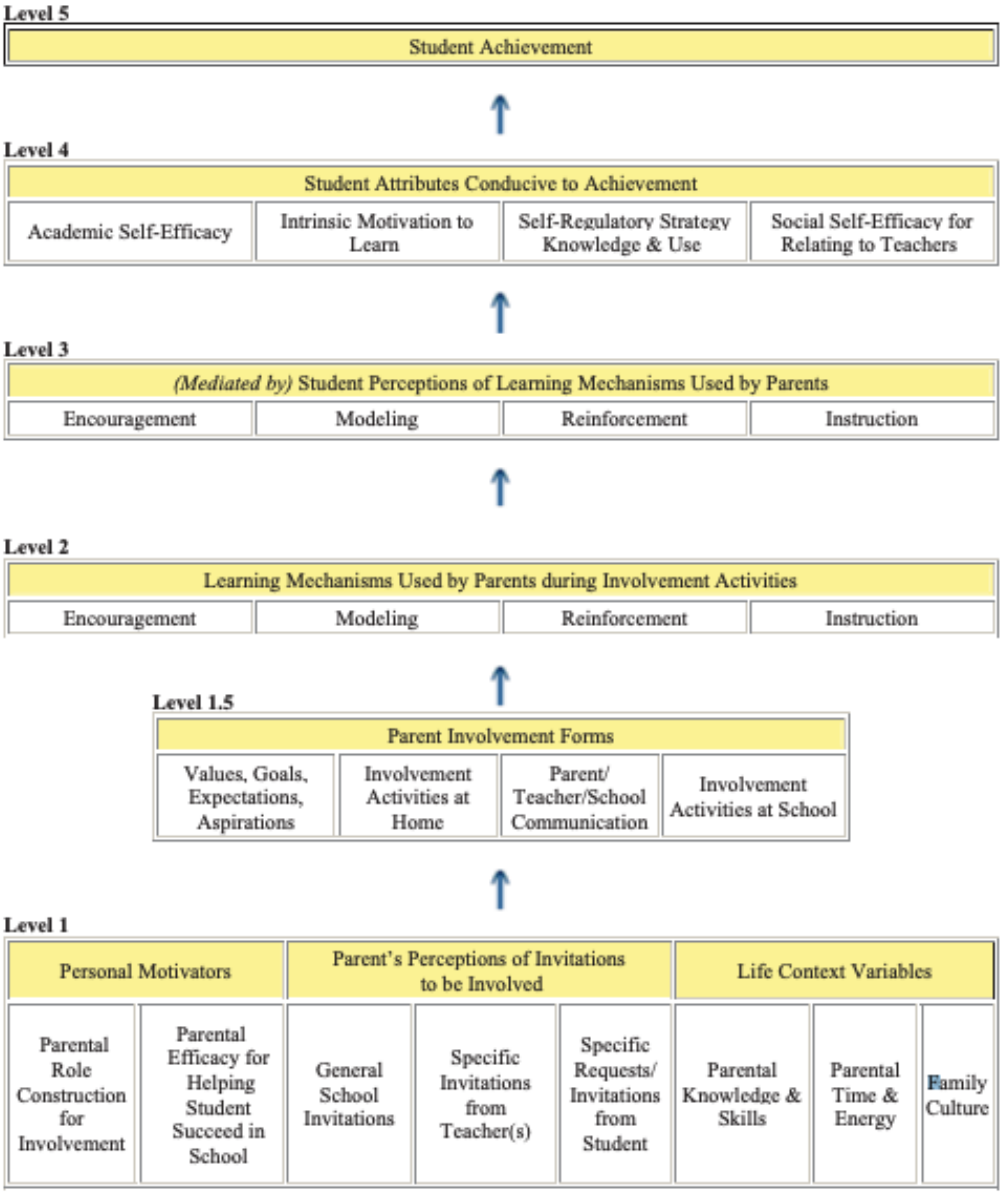
Understanding that student academic performance is influenced by parent factors, Hoover-Dempsey and Sandler (1995) developed a model which looks at why parents get involved in their student's education and how their student's education is positively affected by parental involvement. The original model, named causal and specific model of parental involvement, included three ways parents influence their child academically: modeling, reinforcement, and instruction. As the model evolved into the latest 2005 version, Hoover-Dempsey and Sandler added encouragement as a fourth mechanism of how and why parents become active in student learning, and the effect involvement has on student success.

Hoover-Dempsey and Sandler (2005) focused on elementary and middle-school parents to create a construct with five and a half levels (see Figure 1). The model, as shown in Figure 1, begins with a focus on parental motivation but gradually shifts to students' achievement. Level 1 reasons that parents become involved in their child's education because parents are intrinsically motivated, receive invitations, or have the life skills, knowledge, or time to participate. Level 1.5 expands on Level 1 by explaining the four ways parents become involved in school. Family values, home activities, school communication, and participation in school events are included in Level 1.5. Level 2 focuses on four ways parents can engage with students, including encouragement, modeling, reinforcement, and instruction. Each of these four mechanisms of involvement are influenced by the competency of parents and active contribution in Level 1.5. Level 3 uses the same four categories as Level 2 but considers how the learner perceives parental support in the form of encouragement, modeling, reinforcement, and instruction. The transition of focus from the parent to the student begins at this level, as the model recognizes learners as active participants in their own education (Walker et al., 2010). Level 4 includes the attributes

students must possess to achieve academic success. These attributes are academic and social self-efficacy, self-regulation, and intrinsic motivation. Level 5 signifies student achievement as influenced by parental support and involvement.

Figure 1

Hoover-Dempsey and Sandler Model of the Parental Involvement Process



Note. Adapted from *Handbook of School-Family Partnerships* by S. Christenson and A. Reschly, 2010, p. 38. Copyright 2010 by Routledge. Reprinted with permission.

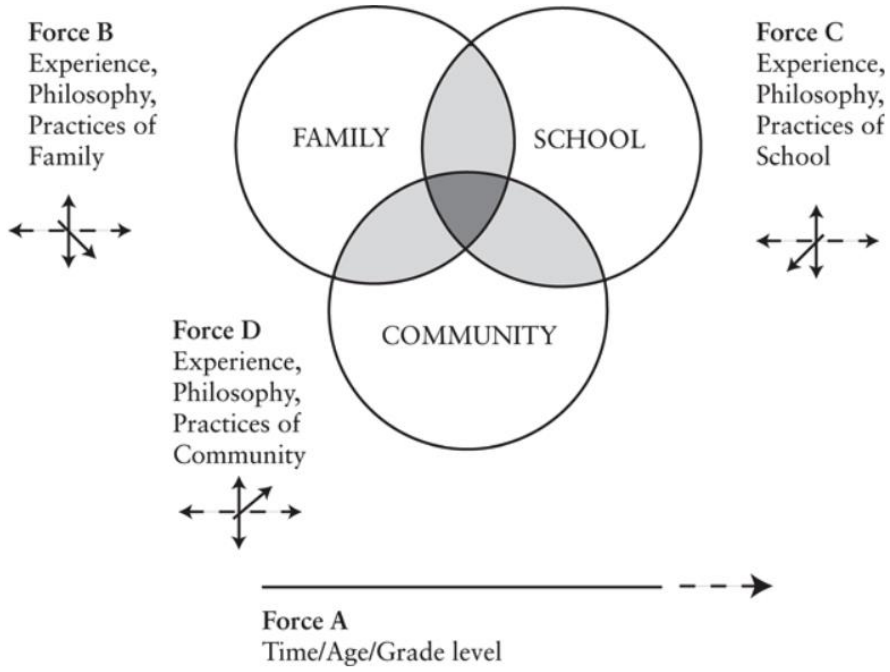
The Hoover-Dempsey and Sandler model illustrates parental involvement as a process instead of a static performance. With the flexible and dynamic atmosphere of online education, this model allows for variations of parental participation. Additionally, the model of parental involvement suggests that there is a group of stakeholders who helped each student find academic success, including the community, learner, school, and parent. It is not the sole responsibility of any single entity, but a collective endeavor all working together. Although the Hoover-Dempsey and Sandler model was designed for a traditional classroom, the ability for research to be done at any of the levels specifically addressing variables could provide applicable insights in the virtual environment as well.

Epstein's Spheres of Influence Model

Working decades in the field of family engagement in traditional schools, Joyce L. Epstein is an advocate for developing a three-way partnership between the school, home, and community to benefit student academic growth. Coining the overlapping spheres of influence theory, Epstein (2011) emphasized the need to understand how students' academic performance is affected. Identifying school, community, and family as essential components of education, Epstein explained that the intersection of these three factors, in a Venn-diagram manner, is where the student is located (see Figure 2). A student's education is not the sole responsibility of any single influence, but the confluence of all three working together to create an overall environment supportive and conducive to learning (Epstein, 1995, 2011; Epstein et al., 2018). A complete overlap is unrealistic as schools and families have vital differences (Dreeben, 1968). However, as the overlay increases, the support a student has in achieving academic success increases in a corresponding manner (Epstein, 2011). Figure 2 illustrates the three parts to Epstein's model and their overlapping interaction.

Figure 2

Epstein's Overlapping Spheres of Influence of Family, School, and Community



Note. Adapted from *School, Family, and Community Partnerships: Preparing Educators and Improving Schools* by J. Epstein, 2011. Copyright 2011 by Westview Press. Reprinted with permission.

Helping to cultivate community, parent, and school overlap, Epstein (2011) developed six categories to help guide the partnerships. The first category was parenting, where resources and help were offered to parents by the school to provide a home environment conducive to student success. Schools were encouraged to build trust by learning and respecting family cultures and backgrounds before offering help (Epstein et al., 2018). Communication was the second category, which focused on developing effective ways for information to be given and received about school events, student progress, and ways to support student progress. The third category, volunteering, focused on parents not only contributing their time and talents to the school but also supporting the school's various programs and community partnerships designed to provide

students help (Epstein et al., 2018). Fourth, learning at home taught parents how to support student learning. This included providing strategies to help students with homework and expecting behaviors consistent with a culture of making education a priority (Epstein et al., 2018). The fifth category, decision making, advocated for parents to take an active role in school committees in order to ensure all backgrounds and cultures enrolled in the school were represented in the decision-making process. Finally, Epstein (2011) identified collaborating with the community as the sixth category to connect with community services and resources to support student learning opportunities.

Epstein's (2011) explanation of "school-like families" and "family-like schools" demonstrates how family and school factors intersect (p. 35). School-like families create a home environment where age-appropriate tasks are designed for active learning, and successes are actively rewarded. Family-like schools consist of school environments where individual student interests override rigid uniformity, and building relationships is essential in improving student motivation to succeed. In a virtual school, where a student's school is based from home, the realization of both a school-like family and family-like school is ideal in setting a student up for success.

Both the Hoover-Dempsey and Sandler (2005) model of parental involvement and Epstein's (2011) spheres of influence model provided a foundation for this study. Epstein's efforts in clarifying how family, school, and community all influence a student's academic performance in a traditional setting provided a starting point to address the complex role parents possess in virtual education. By focusing primarily on the family sphere, this research will provide information on how parents can best support students' learning in an online environment. Level 2 of the Hoover-Dempsey and Sandler model explained parental

involvement in four parts, including modeling, reinforcement, encouragement, and instruction. This study will look at how each of these components influenced student achievement for online middle-school students.

Review of Research Literature and Methodological Literature

Parental Support

Parents are choosing to enroll students in virtual schools for a variety of reasons, all of which stem from wanting to provide students with enhanced opportunities for achievement (Barbour & Reeves, 2009). From taking one online class in a traditional school to being a full-time virtual student, families have options in how children are getting educated (Watson et al., 2015). Distance education provides more opportunities for students to gain access to institutionally based information. As the constraints of being physically present with a teacher are alleviated, students from varying situations and locations can engage in learning experiences (Schlosser & Simonson, 2010). For students in rural parts of the country, online education provides many benefits by increasing course availability and access to qualified teachers (Cavanaugh, 2001; de la Varre et al., 2014). Learners with medical issues, including behavior concerns, can concentrate on course material without interrupting medical care, missing school, or being concerned about a variety of other factors that are uncontrollable in the traditional setting (Watson et al., 2015). Talented students in sports or the arts, who need a flexible schedule to meet the demands of rehearsals, performances, or practices, find online learning beneficial. Students who struggle socially in a brick-and-mortar school and who seek a different opportunity to master content skills also make up the pool of students who enroll in distance learning opportunities (Watson et al., 2015). Additionally, parents seek alternative opportunities for students who struggle academically in traditional classes due to low performance on behalf of the

student, school, or both (Hasler-Waters & Leong, 2014). Having an online option has provided families with a realistic solution to challenges stemming from a brick-and-mortar setting.

Since the early 1990s, virtual schools have been opening in states across the country and the role of parents in education has shifted. Beginning in 1991 with Laurel Springs, the first private K-12 online school, followed by Florida Virtual School, the first public, K-12, online school, which opened in 1996, parental involvement in education started to evolve as traditional brick-and-mortar education started to have a counterpart (Watson et al., 2015). With the help of companies such as K-12 Inc. and Connections Academy, which designed online platforms to organize instruction and to guide teachers and students through curriculum uniformly (Watson et al., 2015), the structure for a flexible learning environment developed on a large scale. In the late 1990s, other companies, such as Fuel Education, Edgenuity, and APEX Learning, wrote and provided curriculum and courses to schools to use in an online setting (Watson et al., 2015). The turn of the century has seen K-12 virtual education grow exponentially (Barbour & Reeves, 2009; Borup et al., 2015) as the appeal to learn independently and away from the confines of traditional school rises. Virtual learning opportunities are available in all 50 states and the District of Columbia with just over two million students in public, charter, or private online schools, taking advantage of some form of distance education (Farmer & West, 2019). Helping fuel the popularity of online schools is the possibilities of reaching more students than ever before.

Parental Support and Students' Academic Performance

Students who were not successful in online education at the high-school level gave several reasons why they withdrew, including time constraints, academic rigor, technological issues, parental influences, and insufficient teacher feedback (de la Varre et al., 2014). Compared

to the 3% dropout rate of high school seniors in a brick-and-mortar setting, virtual high schools experience a rate of 25% (Hasler-Waters et al., 2014). To help decrease student attrition in online schools, engagement needs to increase, students must demonstrate self-efficacy, and parents need to be involved (Borup et al., 2014; Hoover-Dempsey & Sandler, 1995; Zimmerman & Kulikowich, 2016).

Engagement is a key feature to help students succeed in online education (Louwrens & Hartnett, 2015) and parents are integral to making engagement happen. Louwrens and Hartnett (2015) broke engagement into three categories. They defined behavioral engagement as completing assigned tasks and meeting expectations. Emotional engagement is a positive reaction to the academic environment. Cognitive engagement is an interest in understanding complex ideas. Louwrens and Hartnett (2015) found students' behavioral engagement in online classes increased when they had ownership over portions of their education. Just using graphic organizers, conceptual maps, guiding questions, or increasing the use of media had little effect on students' engagement if the virtual learner was not allowed control in making choices (Means et al., 2009). Since parents are physically present with students in the virtual environment, helping students understand the importance of investing in their own education is necessary.

As discussed, online school requires parents to be more involved in many aspects of students' academics, yet parental support must further increase for students with challenges, such as anger, procrastination, lack of confidence, or low self-regulation (Borup et al., 2019). The low parent-student ratio of virtual learning at home allows parental involvement to be tailored based on the strengths and weaknesses of the student. Teaching parents how to provide individual academic support based on specific needs is difficult for schools with large enrollments (Borup et al., 2019). An easier task for schools is enlisting parents to help make sure students attend

class sessions. Attendance and student-student interaction in online education have a positive correlation on final grades for those students whose parents ensure participation (Lowes et al., 2015).

When comparing online charter high-school students from different socioeconomic backgrounds to the same type of students in traditional schools, there is a distinction between which school offers the best education (Rauh, 2011). Rauh (2011) revealed that students from low to medium poverty schools will almost always do better in physical schools than online. Yet, these students make up most of the online population, indicating parents are not choosing online education for the value it adds to academic achievement but other factors, such as convenience, flexibility, and reputation (Rauh, 2011). For students from high poverty schools, online education offers value, yet this demographic is not being served. Limited access to technology, few technological skills, and inadequate time parents can monitor students during the day all contribute to difficulties families face in online education and impedes families from enrolling in the first place (Rauh, 2011).

Advantages and Disadvantages of Parental Support

With the complex role parents play in online education, there is a need to engage and inform parents of the learning process to increase student achievement (Borup et al., 2013; Liu et al., 2010). Programs aimed to engage parents in traditional elementary and secondary school programs, however, have been ineffective in increasing student performance or in changing behaviors of families primarily due to ignoring the needs of parents (Mattingley et al., 2002). Addressing specific parental needs is a requirement if schools want to increase involvement (Levitt et al., 2016). Online schools should not make the same mistakes.

Epstein (1987) and Hoover-Dempsey et al. (2005) both found administrators were essential in spearheading parental involvement by setting clear expectations for teachers to engage parents in traditional schools. Identifying three behaviors parents can demonstrate to be involved, schools can capitalize on increasing positive parental support (Hoover-Dempsey et al., 2005). Personal behaviors are actions parents make that influence student success. Contextual behaviors involve parental activities, which directly help a student, and family-like behaviors demonstrate the willingness for parents to be involved. Schools, therefore, have an impact on whether parents become involved in education or not by inviting participation and giving parents specific roles to fulfill. By exercising leadership in helping teachers coordinate, support, and recognize parents for being actively involved, administrators send a clear message that parents are an essential part of student success to the entire school (Epstein, 1987). The same leadership goals should apply to online K-12 schools where parents take on a more substantial role.

Despite the significance of parental involvement in K-12 learning, as students age, parents become less engaged (Desforges & Abouchaar, 2003). Data collected from the charters of online elementary, middle, and high schools showed parents are expected to ensure students complete assignments, participate in instruction, attend parent training sessions, and verify seat time (Gill et al., 2015). In all but one of these categories, the school's expectation of parental participation is the highest at the elementary level and decreases as learners pass into middle and high school (Gill et al., 2015). Ensuring students turn in assignments was the only consistent expectation for parents among all the levels of K-12 education.

Even with diminishing expectations from the school, parental practices are still positively associated with students' education through the last year of high school, but the focus may change to college admissions and postsecondary goals (Catsambis, 2001). In Henderson's study

(2018), parents in a public online high school felt opportunities for involvement stronger in high school than in elementary school, contrasting other online data and research in traditional schools. Online high-school students, needing less daily care than elementary learners and relying on teachers to help master high-level course work, free parents up to take advantage of opportunities for parental involvement and for developing teacher-parent relationships (Henderson, 2018). Yet, there is a large section of parents who struggle with involvement in online schools.

Many possible factors contribute to parents' struggle with the role of being a learning coach. Black (2009) found parents do not receive specific guidance on the expectations of being a learning coach, while Smith et al. (2016) cited that parents struggle to commit to the time requirements necessary to be involved. A noteworthy factor in parental involvement is parents not feeling competent in instructional practices to mentor students when necessary (Black, 2009; Hasler-Waters & Leong, 2014). Advising and supporting students in demonstrate self-efficacy characteristics becomes a challenge as parents are not confident or available in fulfilling the expectations.

Parental Support and Special Needs

Online education has piqued the interest of families with special-needs students. Since the platform lends itself to a more self-paced environment with a flexible schedule, virtual schools open the possibilities for innovative learning experiences (Basham et al., 2015; Beck et al., 2013). Researching the subjective well-being of students, Beck et al. (2013) discovered students with special needs were more satisfied with online school than general education students. Parents of the same students did not have a satisfaction preference between online

education and traditional school due to weighing the child's happiness against the increased workload and expectations of virtual education.

It is not surprising that parents of special-needs students take on even a more significant role in online education. Not only do parents monitor and motivate, but they also take on the role of the teacher. Modifying curriculum, suggesting interventions, and structuring lessons for student success despite having little expertise in providing special-education services are additional tasks for a parent of a special-needs student (Basham et al., 2015; Smith et al., 2016). Parents of students who require high levels of support can find the tasks of online education daunting and are often unprepared for the increased role (Borup et al., 2019; Smith et al., 2016). Improving communication between parents and teachers is vital not only to building a relationship but also to helping set expectations for both parties. Teachers are the education specialists, and parents are the experts of the dynamics of the students' learning environment (Borup et al., 2014; Smith et al., 2016). Working together, teachers and parents can support student success in an online setting.

Addressing the issue further, Basham et al. (2016) evaluated public information to determine policies of online schools regarding special-needs students. Posing as a parent, Basham et al. (2016) found registering for online education relatively easy for a student with special needs. The problem surfaced when schools were asked to clarify vague policies and services when students were placed in classes (Basham et al., 2016). Merely having access to online education is not enough as the Individuals with Disabilities Education Act (IDEA) is also designed to guarantee that special education and related services are provided after students are enrolled (IDEA, 2019). To assist parents in locating accredited schools that offer services for special-needs students, Basham et al. (2016) recommended establishing a federal database for K-

12 online schools as the information currently available from each school is limited, confusing, or inaccessible.

Parental Support and Online Learning

In the absence of a teaching presence, one of the most valuable characteristics of online learning is self-efficacy (Dabbagh, 2007). A successful online student incorporates traits consistent with internal control and self-motivation (Curtis & Werth, 2015; Dabbagh, 2007). Learners who spend more time on assignments in an online environment due to the flexible schedule found higher success than students whose time was limited by teachers in a face-to-face setting (Means et al., 2009). Fan and Williams (2010), studying traditional 10th-grade classes, found parental advising and academic expectations had a positive effect on student self-efficacy and intrinsic motivation. This finding was later supported by Hasler-Waters and Leong (2014) in an online school where kindergarten through 10th-grade students were enrolled. Curtis (2013) found parental support, although necessary, could be weaned significantly for high school students who demonstrated self-efficacy. Clearly stated, learners who are motivated, self-disciplined, and self-directed will succeed in online learning (Haughey & Muirhead, 1999). Younger students, who often have not yet learned these traits, require guidance from parents since teachers are physically absent (Barbour & Reeves, 2009; Hasler-Waters & Leong, 2014).

Understanding today's socioeconomic condition and family structure, which often conflicts with the necessity of parental supervision, Staker (2011) stressed only 10% of families should consider K-12 online education. This sentiment was echoed by Barbour (2015) who questioned claims stating that online learning is an effective educational alternative for all student growth. Evaluation of research by Smith et al. (2005) and Patrick and Powell (2009) conclude there is little variance in the achievement between online and traditional students. The

concern with this conclusion, however, was that the selective data sampling of high-performing students swayed the results and was not representative of the average K-12 learner (Barbour, 2015).

Review of Methodological Issues

Qualitative Method

Online K-12 education is a growing phenomenon and research on the impact parents have on student achievement is relatively unexplored (Chen & Chang, 2011; Hasler-Waters et al., 2018), especially for middle-school students. By looking at the summary of methodological research over the past few decades, there has been a split of qualitative and quantitative studies that has helped bring insight to online education. Appendix A presents a summary of previous research studies on the topic of parental involvement in online education. Within the last five years, however, qualitative studies have dominated the field as researchers are interested in the individual perceptions influencing parental support and student success in online education.

Qualitative studies have provided an in-depth look into the complexities of parental involvement in online education from a variety of perspectives. Borup (2016) and Farmer and West (2019) explored online education from the view of teachers exposing concerns in virtual high schools, while Borup et al. (2019), Hasler-Waters (2012), and Borup and Stevens (2016) examined parental experiences. Understanding that students are a vital stakeholder, Louwrens and Hartnett (2015), Curtis and Werth (2015), and Borup et al. (2015) investigated students' perceptions of what influenced learners to be successful in online education. These recent qualitative studies have exposed necessary information, allowing virtual schools the chance to continue building on strengths and addressing challenge areas.

In general, the recent qualitative findings, despite the perspective of the research, agree that parental involvement is essential and valuable (Borup et al., 2015; Borup, 2016; Borup et al., 2019; Borup & Stevens, 2016; de la Varre et al., 2014; Hasler-Waters, 2012; Hasler-Waters et al., 2014). Researchers concede, however, that parental involvement is a complex issue with several variables affecting student performance. Natural tensions between teenagers and parents can exacerbate academic performance issues leading to an ineffective home environment (Borup et al., 2015). This is especially true for students requiring a high level of support due to concerns with anger, procrastination, confidence, or little self-efficacy (Borup et al., 2019). Borup (2016) further complicated the topic by discovering that parents who were too involved in online education could be just as much an obstacle for student learning as those who were not involved or not involved enough.

Quantitative Method

The findings from previous quantitative research have shown mixed results. Using a survey with a Likert scale for parents to self-evaluate their involvement in their children's online education, Black (2009) found parental involvement positive when encouraging, modeling, and reinforcing students' education, but found it negative when parents had to instruct learners. Replicating this study on a larger scale of over 900 parents, Liu et al. (2010) validated Black's findings. Chen and Chang (2011) used a questionnaire survey to collect data on parental involvement in elementary schools and concluded there is a significant relationship between parental support and student academic learning. Likewise, Robinson (2013) showed African American parents of elementary students in a traditional school had a positive relationship with involvement in their child's education when parental role construction and school invitations were initiated. In a broad survey of K-12 online parents, Sorensen (2012) discovered that

parents' primary concern was the lack of socialization, but they were positive about online learning and their role in it. Other quantitative studies that followed did not uncover the same results.

Survey data collected from both parents and their high-school students by Borup et al. (2013) showed a negative correlation with course outcomes. The Wilcoxon signed-ranks test was used to make statistical comparisons between students and their parents regarding parental support. Students who showed high self-efficacy did not find benefit in a high level of parental involvement, and students who performed poorly before their parents became highly involved demonstrated a negative correlation to parental support. Williams (2013), using a nonexperimental study in a traditional high school, revealed parents had a minimal to negative parental effect on student performance. He found parental involvement appeared to decline as students reached high school, and there was a significant negative relationship between parental involvement with student extracurricular activities. Curtis (2013), through a mixed-methods study of an online high school, found parent interactions were negatively correlated with course outcomes but acknowledged self-motivated students did not require a high level of parental participation. Among students with special needs, there is a higher satisfaction in online schooling. as Beck et al. (2013) found in a 66-question survey. In the same study, parents of students with special needs had no significant preference between online versus traditional school, likely because, although their involvement in virtual education drastically increased, their children were happier.

Important to note, most K-12 online research, both qualitative and quantitative, has been focused at the high-school level. To continue to gain an understanding of the effect online education has on adolescents, further research is necessary. The relationships between the

involvement of parents and student achievement must be further investigated to understand the factors that promote success (Hasler-Waters et al., 2018). Since qualitative studies have led recent research, it is necessary to have a quantitative balance to understand the relationship between parental support and student learning, especially at the middle-school level.

Discovering the gap in research at the middle-school level, a quantitative study was chosen to aid in the research of virtual education. Basing the research design on Black (2009) and Liu et al.'s (2010) previous work, a survey questionnaire was used to identify if there was a correlation between parental involvement and student achievement. The strong reliability and validity of the instrument used by Black and Liu et al. with high school parents provided reliable and valid results at the middle-school level as well. Having parents self-evaluate their involvement and support of their children in online education offers important insight on how to possibly strengthen a valuable component in educating children online.

Synthesis of Research Findings

There are multiple ways parents are involved in supporting online student learning (Borup, 2016; Borup et al., 2015; Curtis, 2013). Curtis (2013) placed parental involvement into three categories—monitoring, mentoring, and motivating. Borup et al. (2015) added nurturing, organizing, and instructing as other areas in which parental support is demonstrated. Later, Borup (2016) reworked the categories, keeping nurturing, monitoring, motivating, and instructing but consolidated organizing, advising, and mentoring into organizing and managing. Although the categories address similar facets to parental involvement, the difficulty in developing a consensus speaks to the sophisticated role parents face when enrolling students in K-12 online education. Looking at parental involvement from the perspective of the three main

stakeholders—students, parents, and teachers—more insight into the complexities can be discovered.

Students' Perceptions of Parental Involvement in Online Education

Students realize the role of parents increases in K-12 online schools (Kumi-Yeboah et al., 2018). Secondary students who wanted their parents involved at home had the most success in accessing parental support (Deslandes & Bertrand, 2005), indicating parents should let students take at least part of the lead in regulating the amount of parental support. This is not to say students always know what they need to be successful in a virtual environment. Students can insist on being treated with more independence by parents, which is consistent with the developmental stages of teenagers, but is not always deserved (Borup et al., 2015). In trying to establish independence, students can oppose parental involvement, even when the help would be beneficial, causing stress and conflict and straining the student-parent relationship (Borup, 2016). When it comes to motivation, however, students find the student-parent relationship significantly more influential than parents did (Borup et al., 2013), demonstrating the students' desire for positive parental attention. Although parents might not realize the heightened value of their student interactions, students want and need the support.

Parents' Perceptions of Parental Involvement in Online Education

Parents have a substantial responsibility in K-12 online education compared to a traditional setting since students are learning from home (Hasler-Waters, 2012). Parenting children during school hours and seamlessly continuing into the evening hours is demanding. Parents are often not prepared for the level of involvement of online education and are confused about the job division between teachers and parents (Hasler-Waters, 2012). Since sharing teaching space is inherent, receiving communication from the school to help delineate the

parent's role is critical (Borup et al., 2015; Hasler-Waters & Leong, 2014; Kumi-Yeboah et al., 2018). Parents need to be honest in their challenges as a learning coach, and teachers need to explain how parents can be effective extensions of the school. Communication is essential as parent and teacher roles overlap (Borup et al., 2014; Hasler-Waters & Leong, 2014). Correspondence should be an ongoing component to coordinate responsibilities. Cavanaugh et al. (2009) found several virtual schools did have policies about the frequency of teacher-parent interaction, but the rate varied significantly between schools, ranging from weekly to quarterly. Too many schools do not have a communication policy for parents or a way to track parental involvement (Black et al., 2008). Parents welcomed online tools to help monitor student achievement and to communicate with instructors to clarify instructions and assignments (Borup & Stevens, 2016; Kumi-Yeboah et al., 2018). Parents want to be involved but need help understanding and navigating their role. When parents were given online access to grades and could easily monitor student progress, they were more involved, which positively affected student academic performance (Borup & Stevens, 2016; Chen & Chang, 2011; Davidovitch & Yavich, 2015).

As included in Hoover-Dempsey and Sandler's (2005) model, parental involvement is influenced by how schools include families. Parents who come into a school with a solid role construction and positive efficacy about being useful will be involved, while other parents need systematic and specific encouragement, support, and education to build both factors before involvement takes place (Hoover-Dempsey & Sandler, 1997). Looking at factors which influence student motivation, Fan and Williams (2010) determined that student achievement was positively affected by parental involvement when the school's communication was informative and positive. When the school's contact was focused on concerns or issues, student motivation

was negatively affected (Fan & Williams, 2010). Schools embody a vital role in initiating and inviting positive parental involvement to increase student achievement. Parents want to be involved despite communication challenges (White-Clark & Decker, 1996), making the intersection of student influences by teachers and parents evident. Although there is no single method proven to guarantee parents success in supporting their children in online education, the value in enabling parents with well-defined guidance through clear communication is unmistakable.

Teachers' Perceptions of Parental Involvement in Online Education

Parental involvement often builds a trusting relationship between teachers and parents, creating a beneficial environment for students (Karakus & Savas, 2012). Although online teachers find parental involvement necessary, obstacles in providing support are noticed (Borup, 2016). Acknowledging that students need help with organization, engagement, and instruction from parents, teachers find overly engaged parents can interfere with student learning and achievement (Borup, 2016). With less synchronous instructional time each week compared to brick-and-mortar schools, teachers value the help but find parents unprepared for the level of involvement necessary (Borup, 2016; Borup et al., 2013; Hasler-Waters et al., 2014). Instructing students in different methods than used by the teacher, completing work for students, and promoting cheating are given as examples of detrimental practices for student learning (Borup, 2016). If parents lack skills and knowledge, student learning can suffer, especially when content becomes harder in higher grades (Borup, 2016; Gill et al., 2015). In contrast, parents who are not involved have proven to be equally harmful to student achievement (Hasler-Walters et al., 2014). Consequently, there is a spectrum of parental involvement, and finding an ideal level or "sweet spot" is difficult and likely depends on the unique needs of each student (Borup, 2016). Teachers

find modest parental involvement to be best in promoting student learning and developing study and organizational skills (Borup et al., 2019; Litke, 1998; Hasler-Waters & Leong, 2014).

Important to note, there are few programs preparing teachers to teach online, and professional development opportunities are inadequate (Hathaway & Norton, 2012). Teachers can be pulled in many directions to fill necessary roles that emerge in the virtual environment, such as technology instruction and support (Barbour & Mulcahy, 2009). Although there is a crossover between traditional schools and online education, virtual teachers are often working on instinct or previous experience on how to do their job and how to involve parents. Coining "teacher engagement," Borup et al. (2014) outlined effective ways teachers can improve student outcomes in a virtual environment, including facilitating discourse with parents and students. Teachers find parental involvement essential as student motivation and engagement strategies are more effective when supported by the physical presence of parents at home (Borup et al., 2014). Ultimately, students benefit when parents and teachers work together to ensure the best environment for academic success.

Critique of Previous Research

Although public K-12 online schools provide the same curriculum as traditional public schools, the job of providing classroom management changes significantly. K-12 students in full-time online schools lack the physical presence of a certified instructor (Russell, 2004; Weiner, 2003). The innate tasks of a classroom teacher, however, do not disappear in a virtual setting, requiring a parent, referred to as a learning coach, to fill in (Hasler-Waters & Leong, 2014; Hasler-Waters et al., 2014). Classroom management is vital in making sure students are monitored in their educational activities, mentored to improve academic skills, and motivated to achieve academic success. The increased role parents fulfill in a virtual school is more

significant than in a traditional setting, and the essential tasks involved in managing learning become the responsibility of parents who are often ill-prepared for the job. With nearly five million full-time online K-12 students, identifying the parents' role in student achievement is vital (Henderson, 2018).

Research from traditional schools has been transferred to online education even though the role of parents between the two types of schools is not consistent. Studying traditional K-12 schools, Fan and Chen (2001) and Wilder (2014) discovered a positive effect between student success and parental involvement regardless of the measurement of performance. Parental expectations for student achievement had the highest correlation for student success. In a separate study, Fan (2001) concluded that parental involvement showed few adverse effects on student academic success. The negative correlation between student achievement and parental support is often explained and dismissed by the reactive hypothesis (McNeal, 2012). The reactive hypothesis claims parents react to a student's poor academic and behavioral issues by becoming more involved in a too-little, too-late manner. Despite McNeal's (2012) research finding little to no significant support for the reactive hypothesis, the theory continues to be used to explain negatively correlated studies even in online education.

The general research consensus found parental involvement necessary for K-12 online students but concedes a variety of factors influence whether students are successful or not. For high-achieving online students who demonstrate self-efficacy, parental involvement is not as necessary for student success in submitting assignments and passing coursework (Curtis, 2013; Hasler-Waters et al., 2018). When students take responsibility for their education, parental involvement can shift into a monitoring mode instead of full engagement. Parental support is important in virtual education due to students needing encouragement, role modeling, and

positive reinforcement, yet, researchers admit there are no clear, specific strategies supporting student achievement (Liu et al., 2010). This is especially true for students who require a higher level of support due to little self-efficacy, behavior-management issues, low motivation, or lack of confidence (Borup et al., 2019). Communication continues to be rated as a priority in online education as proactive, efficient exchanges of information in multiple ways is essential in identifying expectations to be achieved by all stakeholders (Cavanaugh et al., 2009). Woodworth et al. (2015) cited parental participation in online charter schools had a negative relationship with academic growth in all but high-school math. The study explained the results as parents not meeting the schools' expectations of support (Woodworth et al., 2015), emphasizing clear teacher-parent communication is necessary. Clearly, the job parents have in education is complex and dynamic, which is even further accentuated in virtual learning.

Research Gap

Brick-and-mortar schools have benefitted from research, agreeing that parental involvement helps student academic performance (Wilder, 2014). Even the U.S. Department of Education (2019) identified the positive effect parental involvement has on a child's learning when parents are assimilated into the educational climate. Online schools, despite being the fastest growing sector in education over the past twenty years (Borup & Stevens, 2015), have fallen behind in researching the effects of parental involvement (Barbour et al., 2013). The limited K-12 research on parental support completed to date for students who are full-time online learners has focused primarily at the high-school level (Borup et al., 2013; Borup et al., 2015; Borup et al., 2019; Curtis, 2013; Curtis & Werth, 2015; Hasler-Waters, 2012). The effect of parental support at the middle-school level has been studied in a traditional brick-and-mortar setting (Deslandes & Bertrand, 2005; Fan & Chen, 2001; Sui-Chu & Willms, 1996) and should

not be generalized to virtual education. Studies looking at parental support of full-time online students in younger grades have focused on students with disabilities (Smith et al., 2016) and parental involvement in assignment submissions (Bird, 2015), providing a foundation of research. Litke (1998) and Louwrens and Hartnett (2015) each offered case studies looking at factors that influence engagement and academic success, contributing insight into virtual education in middle school. None of these population segments, however, address the correlation between parental involvement and academic achievement of middle-school students in a full-time, public, K-12 online school.

Summary

The relationship between parental support and students' academic performance in virtual learning has been examined in previous research. K-12 online education allows students to obtain an education in any location as long as a computer and Internet connection are reliably accessible. With the advancement of technology and the desire for families to find alternate ways to access education, K-12 online schools must pursue the best methods to provide academic excellence. Since teachers in a virtual school are physically absent, the responsibility of a parent transforms into a learning coach, who provides the necessary support for students to achieve academic success (Borup, 2016; Hasler-Waters, 2014; Litke, 1998). With the increased responsibility of monitoring, tutoring, and encouraging students, parents have a significant influence on how their full-time, online, K-12 child performs (Borup, 2016; Borup et al., 2015; Curtis & Werth, 2015; Kumi-Yeboah et al., 2018). Therefore, it is important to determine how parents can positively influence their child's education in an online setting and how schools can support the parents' efforts.

Examining the evolution of online learning, there is an understanding of how virtual schools developed and the impact online education has on family choice in the United States. By servicing students with special needs, independent learners, elite performers, athletes, and students with medical concerns, there is a demand for the flexibility and differentiated learning, which K-12 online education provides (Watson et al., 2015). The ability of virtual schools to deliver education flexibly has helped fuel its popularity in all 50 states (Barbour et al., 2013). As families appreciate the benefits of online school, parents often feel unprepared to take on the classroom management tasks required to ensure student success.

The fact research has failed to keep up with the growth of online education to determine the factors consistent with academic success is a cause for concern. With higher attrition in online education than in traditional schools, there is a real need to understand the factors that contribute to student achievement. Unfortunately, the research on the relationship between parental involvement and student achievement in secondary education has produced conflicting results and is heavily focused on a traditional school setting at the high-school level (McNeal, 2012). To add to the mix, other factors, such as a student's self-efficacy and specific educational needs, are contributing factors influencing parental involvement. Since K-12 online education requires parents to take on a more significant role to fill the void of teachers not being physically present, understanding how parental involvement influences student success is vital. Although research has studied the effects of parental support in K-12 online high schools, the middle-school level needs further attention. Through a correlational, quantitative study and using Hoover-Dempsey and Sandler's (2005) model of parental involvement and Epstein's (2011) overlapping spheres of influence of family, school, and community to provide the theoretical framework, I investigated the relationship between parental involvement and student success in

middle school. Chapter 3 describes the research design, participants, instrumentation, data collection and analysis procedures, as well as the validity and ethical issues of the study.

Chapter 3: Research Method

Families are enrolling in virtual schools at a record pace, yet, many students are not successful in a virtual environment. This is evidenced by K-12 online schools demonstrating a higher attrition rate than traditional brick-and-mortar schools by a ratio of five to one (Hasler-Waters et al., 2014; Friedhoff, 2017). Although the state curriculum is the same in virtual and traditional public schools, the presence of teachers is drastically different. Since contact with teachers is significantly less in an online school compared to face-to-face learning, a parent, referred to as a learning coach, is required to supervise their child's education. Unfortunately, parents are not prepared or trained to take on the task, and students have not yet developed skills to organize or manage an educational setting on their own (Borup et al., 2019). This can be especially true for younger students, such as sixth graders, who are beginning a new division of their educational career—middle school.

To understand how students' academic performance is influenced by parental involvement, Hoover-Dempsey and Sandler (2005) developed a model that looked at why parents got involved in their student's education, and how their student's education was positively affected. The model included four specific ways parents influence their child academically: modeling, reinforcement, instruction, and encouragement. Modeling suggests parents performed behaviors their child could observe; reinforcement refers to a parent praising a child's positive behavior; instruction indicates the direct interaction between a parent and child working on specific skills; and encouragement focuses on a parent's support for their child's academic success (Hoover-Dempsey & Sandler, 2005). While research in online education has investigated parental involvement at the high-school level, the middle school has been largely

ignored. I investigated the correlations between parental involvement of online middle school students and student success.

Purpose of the Study

The purpose of this correlational study was to explore the relationship between parental involvement and the academic performance of sixth-grade students at a K-12 online school. Using an online survey adapted from Black's (2009) research of online students, I collected data from 250 parents with sixth-grade students in a full-time, online, public school. Parents were asked questions on four parts of their involvement in online education, including encouragement, modeling, reinforcement, and instruction. These four constructs provided the independent variables for this study. Students' grade point average (GPA) was calculated from the current grades that parents provided in the second part of the survey and served as the dependent variable. I analyzed the responses and evaluated the academic GPA to discover if a relationship existed between parental involvement and student achievement at the middle-school level. I used quantitative statistical measures to examine the data.

Research Question

What is the relationship between parental involvement and the academic performance of sixth-grade students attending an online, K-12 public school full-time? Hoover-Dempsey and Sandler (2005) provided the basis of this study with their research on parental involvement and the influence it has on student academic performance in a traditional school. With the rise of K-12 online education and the new role parents find themselves facing, it is necessary to understand how parental involvement affects the academic performance of middle school students at an online school. The research question supported the purpose of this study, which was to identify if a correlation existed between parental involvement and academic success of sixth-grade students.

Hypotheses

Determining whether a relationship existed between parental involvement and student achievement in a public online middle school was the focus of this study. Parental involvement has been broken down into four categories: encouragement, modeling, reinforcement, and instruction. Parental encouragement entailed supporting student educational achievement, parental modeling provided opportunities for students to observe academic behaviors, parental reinforcement promoted praising positive behaviors conducive to learning, and parental instruction required direct teaching between a parent and child (Hoover-Dempsey & Sandler, 2005).

RQ1. What is the relationship between parental involvement and the academic performance of sixth-grade students attending an online, K-12, public school full-time?

H_0. There is no statistically significant relationship between parental involvement and the academic performance of sixth-grade students attending an online, K-12, public school full-time

H_1. There is a significant relationship between parental involvement and the academic performance of sixth-grade students attending an online, K-12, public school full-time.

Research Design

This study adopted a quantitative method with a correlational design. Since middle-school students require the guidance of an adult, parental involvement in education is essential. As a result, there is a need to investigate the role parents assume in the education of virtual students. By researching the relationship between parental involvement and academic achievement, parents can be informed of better strategies needed to help their children. The Hoover-Dempsey and Sandler's (2005) model of parental involvement explored four ways parents influence student learning in a traditional school setting, including encouragement,

modeling, reinforcement, and instruction. These four mechanisms include both psychological and behavioral activities parents demonstrate to influence student academic outcomes.

In looking for a correlation between parental involvement and student academic achievement in middle-school online education, I chose a quantitative, correlational design to test the nature of parental involvement toward student achievement. Through the adoption of a quantitative study, a higher number of individuals could be sampled, and the results projected to a larger population with similar characteristics (Privitera, 2019). Since the variables were not manipulated to observe what happened, I did not choose single subject, randomized, and quasi-experimental designs for this study. This research was also not set up to have comparison groups; therefore, an ex post facto design was not appropriate. Because a descriptive research design does not manipulate variables or have comparison groups, I also did not seek to find relationships between variables (Creswell & Creswell, 2018). A correlational study allowed data to be collected in an objective, replicable, outcomes-based method with the purpose of determining if any relationship existed between the variables (Bobko, 2001). This correlational study, using Spearman's correlation, tested the relationship of parental involvement in terms of four variables—encouragement, modeling, reinforcement, and instruction, and provided insight as to whether each variable positively or negatively affected the achievement of sixth-grade students. Since the researcher had no influence over the variables and sought to simply measure them to determine if a relationship existed, a correlational study proved to be the most appropriate. Spearman was chosen over Pearson because of the Likert scale used on the parent survey to collect information for this study. The survey offered an ordinal scale and ordered categories for parents to choose from, indicating a relative order of their responses but not a

specific quantity (Knapp, 2017). While Pearson was better-suited for analyzing interval scaled data, Spearman was more appropriate for ordinal scales (Bonett & Wright, 2000).

Target Population, Sampling Method, and Related Procedures

The participants chosen for this study were parents of sixth-grade students who attended a specific public, full-time, online school. The school enrolled students from third grade through high school and had three divisions, each division having a separate principal, with one head of school overseeing the entire program. The elementary school consisted of third through fifth grade; middle school had sixth through eighth grade; and high school encompassed ninth through twelfth grade. In 2018-2019, the school enrolled approximately 3,000 students with about 300 in sixth grade. The middle-school content areas of science and social studies had two teachers, each having about 150 students, while math and English had three teachers to lower the teacher-student ratio due to being state-tested subjects. Although the online platform was always available for students to complete work, the school had stated operation hours from 8:30 am to 4:00 pm in which synchronous classes and teacher accessibility was offered. The virtual school's platform was provided by a corporation who oversaw access to the curriculum, technology, and supplies for students and teachers. Specific curriculum standards were provided by the state, implemented through the platform, and taught to a mastery level by the online teachers. Online teachers had to be certified in their content area by the state and were required to complete continuing education hours each year as well as mandatory annual compliancy trainings.

Each student had to have a learning coach designated upon enrollment to the virtual school. A learning coach was an adult, usually a parent or guardian, who served as the primary contact for the school and served as a manager of their child's online education (Hasler-Waters & Leong, 2014). Since the virtual school did not have a physical campus, parents living

anywhere in the state could enroll students. Proof of state residency had to be submitted by the learning coach prior to a student being admitted to the school. Students who were enrolled were full-time students and not able to enroll concurrently in another public school.

The sampling method began with an introductory email sent to the target population of 250 parents of sixth-grade students from a public online school in the state. The sample size was 143 parents based on G*Power. The study used random sampling because I did not know which parents completed the survey questionnaire. Most students had one parent identified as a learning coach. In a few cases, a student had two parents listed as the student's learning coaches. Since the consent form and survey were emailed with permission through the school's internal system, both learning coaches listed received an email. Both parents could consent to complete the questionnaire separately since each parent likely had a unique perspective of their involvement in supporting the academic success of their child. In the case of a parent having two sixth graders in the school, the parent could fill out the survey based on their parental involvement in online education for both students on one form. Even though there are two students, the involvement in terms of encouragement, modeling, reinforcement, and instruction should be similar for each student even if the degree of necessity might be different.

After obtaining IRB approval on February 26, 2020, and permission from the institution, I emailed an introductory letter to the parents of 250 sixth graders. A secure link to an informed consent form was included in the email for parents to access, read, and digitally sign. The selection of learning coaches was random and anonymous. Once parents signed the informed consent, they were able to access a separate, secure link, which directed them to a Qualtrics survey of approximately 40 questions. In the survey link, parents were asked to provide their student's current grade in math, English, science, and social studies. Basic demographic

information, including gender, ethnicity, employment, household income, average hours per week worked, and parent's education level, were collected from parent participants providing additional data of the sample population.

Instrumentation

Adapted from the Martinez-Pon's study (1996), which investigated parental modeling, encouragement, facilitation, and rewarding, Hoover-Dempsey and Sandler (2005) created an instrument that measured the influence parents had on student performance in traditional schools. Black (2009) modified the survey to apply to online students, and Liu et al. (2010) verified the instrument to be reliable and valid for the virtual environment with reliability coefficients between .88 and .93 for each of the four parental mechanisms. The model of parental involvement (Liu et al., 2010) instrument provided the basis of collecting data from middle-school parents; however, I performed a pilot study on an updated version (see Appendix D).

In its original form, Lui et al.'s (2010) survey was comprised of 51 questions split into four sections. Each section focused on one of the four mechanisms of parental involvement, and the results of each part are reported separately. Every question allowed parents to evaluate their participation through a Likert scale from 1 to 6. An answer of 1 = *not at all true*, 2 = *a little bit true*, 3 = *somewhat true*, 4 = *often true*, 5 = *mostly true*, and 6 = *completely true*. Parental encouragement was measured in questions 1–13, which all begin with the phrase *We encourage this child*. Parental modeling was addressed in questions 14–23 with the prompt *We show this child that we*. Questions 24–36 measured parental reinforcement, each starting with *We show this child we like it when he or she*. Finally, parental instruction was measured in questions 37–51 and each began *We teach this child*. High scores in each section indicated that parental involvement was strong, and low scores demonstrated weaker participation by parents.

Although the model of parental involvement instrument (Liu et al., 2010) has proven to be reliable and valid, it had not been updated in the last 10 years. Updates to the instrument (Appendix D) were necessary to make it more relevant for today's online experience. The four major categories remained intact as it was logical to assume K-12 students continued to need guidance in the form of engagement, reinforcement, and support through modeling and instruction in pursuing an education since they often had not solidified the skills necessary for academic success. Although the main categories stayed the same, I made other adjustments, both minor and more substantial.

I made three types of minor alterations to Liu et al.'s (2010) instrument. First, I edited some questions to help parents clearly understand what was being asked. To question 5 that addresses parental encouragement of a student being aware of how he or she was doing on assignments, I added *by checking their gradebook* to clarify how a student would know their progress in class. Second, the original survey used the terms *schoolwork* and *homework*. *Schoolwork* was a general term encompassing the responsibilities students had during a school day, including classes and lessons. *Homework* was traditionally intended to mean work done at home. Since the line between school and home was blurred in online education, I replaced both *schoolwork* and *homework* with the term *assignments*, as this was a more accurate description of the assigned work and a term used regularly in an online setting. Third, I amended the Likert scale for the updated survey. Instead of assigning predetermined statements to each of the specific numerical values, the Likert scale started with 1 = *not at all true* and ended with 6 = *completely true*. Still having a finite number of options, parents determined the value they placed on the numbers between 1 and 6.

More substantial changes were made to each of the four sections where the goal was to provide the survey with more focus. In each section of the original survey, statements were carefully considered to determine if there was any overlap. For example, in the encouragement section, the statements *to believe that he/she can do well in school* and *believe he/she can learn new things* seemed repetitive. Since this was a study on the effects of parental involvement in an online school setting, the statement of generally learning new things was removed to focus on the curriculum-based environment. Similarly, in the parental reinforcement section, *sticks with a problem until he/she solves it* was very similar to *finds new ways to do schoolwork when he/she gets stuck*, and the latter was deleted. In addition to removing some questions on the survey, I added others. Questions that addressed attending online classes regularly, communication practices, positive attitude, and organization were included to determine how parental involvement in these common online practices correlated to student achievement. Each of these added questions addressed important behaviors for today's online student as well as understanding if there was a relationship to academic achievement was essential.

The instrument used in determining student academic performance was derived from each student's current grades and was relayed via the first question on the parental survey (see Appendix D). Having parents provide the grades their student earned in the four core classes kept the survey results anonymous, allowing the integrity of the research to remain intact. Parents and students could view their current gradebook through the online platform provided by the school. Through logging in with a unique username and password, parents and students could access the curriculum for all subjects as well as their live gradebook. The gradebook provided an overall grade for each subject as well as the points earned for each completed assignment. It was this current view of grades which parents accessed and entered into the survey for this study.

Although grades in elective classes were available for each student, parents were only asked to indicate grades in the four core courses to calculate the student's GPA. Values or points assigned to each grade were as follows: A = 4, B = 3, C = 2, D = 1, F = 0. The grade equivalent numbers were mathematically averaged, and the students' GPA was determined. The updated instrument continued to measure how parents viewed their involvement efforts in four distinct categories: engagement, modeling, reinforcement, and instruction. In general, online academic performance was linked to parental involvement, yet parents needed to understand how their role influenced student achievement (Hasler-Waters et al., 2018). By using an updated 40-question survey from Black (2009) and Liu et al.'s (2010) research, this study offered needed and valuable information on parental involvement of online students at the middle-school level.

Operationalization of Variables

This research included dependent and independent variables. The dependent variable was student achievement as defined by an overall GPA, using only the students' core subjects including math, science, English, and social studies. As part of the survey, each learning coach gave the current letter grade their child earned in each four core subjects, as indicated in the online gradebook. A number value was given to each letter grade reported and students' GPA was calculated. The GPA was determined by averaging the grade equivalent numbers.

This study's independent variable was parental involvement as demonstrated by four mechanisms: encouragement, modeling, reinforcement, and instruction. Parental encouragement included developing a strong working relationship, building students' ability to self-discipline, and increasing the students' self-confidence (Liu et al., 2010). Positive reinforcement and praise were contained in this construct. The first ten questions of the survey began with *I encourage this child.* Parental modeling encompassed the ability of parents to demonstrate valuable traits

that promoted academic success. Characteristics, such as organization, responsibility, and problem solving, were beneficial for students to see in action by parents (Hoover-Dempsey & Sandler, 2005). Parents self-rated themselves on questions 11–20, which all began with the phrase *I show this child that I*. Parental reinforcement referenced persistence and resilience in completing work despite finding tasks difficult or uninteresting (Liu et al., 2010). Emphasizing the value of hard work and completing tasks was essential. The next 10 questions, 21–30, asked *I show this child I like it when he/she*. Parental instruction involved assisting students in developing strategies to help them learn and promoted student interactions between peers and teachers (Hoover-Dempsey & Sandler, 2005). A students' understanding of how to collaborate in a learning environment aided in academic success. The last 10 questions of the survey began with *I teach this child*.

Each of the four components of parental involvement was measured by the parents' responses on the adapted survey instrument (Appendix D), which used a six-point Likert scale ranging from 1–6. Higher numbers indicated a parent felt their parental involvement was greater, and small numbers signified parents felt they demonstrated less involvement. In each of the four sections, the 10 answers were averaged for every parent. This gave each parent four scores, one for each of the four constructs: encouragement, modeling, reinforcement, and instruction. These numbers were then used to find a correlation between the four constructs and student achievement.

Pilot Study

Since Liu et al.'s (2010) research was 10 years old, I conducted a pilot study to determine the reliability and validity of an updated instrument. The questions on the new instrument continued to address parental encouragement, modeling, reinforcement, and instruction, which

remain relevant to involvement practices parents faced. All willing parent participants were given the same questionnaire, and the submitted data were considered uniformly when entered into the SPSS V26 software to determine if a relationship existed between parental involvement and student achievement. The testing effect was not a factor as parents filled out the questionnaire only one time as a reflection of their involvement in the four areas. The survey was sent out in the spring, past the last date of new student enrollment in February. At this point in the year, parents were more familiar with the expectations of online education of their sixth grader. All parents were sent the same initial email explaining the research and provided a link to the consent form and survey. Selection, in this respect, was not based on different teachers, class size, or content.

By using a pilot study, the parental survey instrument was tested with a population of 50 parents of sixth-grade students who enrolled in the virtual school in the second semester. As Connelly (2008) and Treece and Treece (1982) suggested, the sample should be 10% of the projected larger parent study. The parent study had a population of 250 participants, which meant the pilot study participants needed at least 25 parent participants, which is how many completed the survey. I conducted the pilot study at the same virtual school, but there was not any overlap with the two groups. Parents for the pilot study enrolled their sixth-grade student after January 2020 to finish the second semester in the online school. The official parent study surveyed parents who enrolled a sixth-grade student in the fall of 2019. Using parents from the same school and grade helped provide consistency between the pilot study and the formal research.

The parents in the pilot study were emailed a secure link to an informed consent form explaining the study and asking their permission to take part in the survey. Willing participants had access to a separate secure link to the Qualtrics survey (see Appendix D), and the data

collected were confidential and anonymous. Current grades were required for parents to enter. Parents had access to their children's gradebook through the online platform the school provided. Parents accessed the current grades for their children in math, English, science, and social studies for a GPA to be calculated.

Cronbach's α was used to determine the reliability coefficient, which yielded results between .85 and .92 for three of the four constructs. I could not reliably calculate survey component *encouragement*, the first construct of the survey, because there was no variance for the first question (see Table 2).

Table 2

Summary of Scale Reliability for Pilot Study

Survey Component	Items	Cronbach's α
Engagement	10	--
Modeling	10	.85
Reinforcement	10	.89
Instruction	10	.92

Every participant in the pilot study indicated a 6 = *completely true*, for the question *I encourage this child to believe that he/she can do well in school*. Although this question could have been deleted from the official study since it had no variance in the pilot study and a reliability coefficient could not be determined, I chose to keep the question. Even though the pilot study had the recommended 10% of the population, it only included 25 participants, a relatively small sample size. The pilot study participants were new to online education the semester the study was initiated and the question showing no variance was the first one parents

had rate between 1 and 6 on a Likert scale. I thought that with a larger group of parents and participants with more experience in an online K-12 setting, this question would prove valuable and I left it in the official study.

Data Collection

Data collection started after obtaining IRB approval from the university in March 2020. Parents of sixth-grade students were emailed an introductory letter (Appendix B), which included a secure link to an informed consent form (Appendix C). Parents volunteered to take part in the study by digitally signing the informed consent. Once the signed informed consent form was received, willing parent participants accessed the secure link to the Parental Involvement Mechanisms Measurement survey (Appendix D) and the demographic survey (Appendix E). As part of the parental survey, parents provided their children's current grades in math, English, science, and social studies. This information was necessary to determine each student's GPA. Since the middle school does not calculate student GPA in the online gradebook, I calculated each student's GPA from the grades parents provided. All data were collected confidentially and anonymously. No one else had access to the data produced from the survey. The survey data were entered into the SPSS V26 Statistics software and correlated to the GPA of each student.

Data Analysis Procedures

The data obtained through a Qualtrics survey started with a population of 250 sixth graders' parents from a public online school in state. The sample size was 143 parents, which was 57% of the population. Ninety-four percent of the parents who responded to the survey were female, and 57% indicated they were White. The majority of parents, 76%, spent most of their time at home either as a full-time caregiver, unemployed, retired, a student, or were disabled. Of

the parents who worked outside of the home, 54% stated they worked five or less hours a week. This implied the majority of parents were able to attend to their children's academic needs as necessary. Despite being an overrepresentation of one gender, race, and at home availability, the demographics for this study were in line with the general depiction of the entire school.

The populations' responses to the six-point Likert-scale on 40 questions were analyzed using SPSS V26 software. Answer selections ranged from 1 = *not at all true* to 6 = *completely true*. Likert scales were both ordinal and monotonic as the value intervals increase and decrease at a consistent rate. The survey was set up to require participants to answer all questions before it could be submitted. If a parent tried to submit the survey without answering a question, the Qualtrics website highlighted the missed item in red and provided a statement at the top informing the parent which question was left blank. Since only one school was chosen for data analysis, the Likert scale's ability to support a smaller sample size was ideal (Bonett & Wright, 2000).

Once data were collected, SPSS V26 was used to run several statistical tests. The answers provided within each construct were averaged for every anonymous participant. This provided participants one numerical representation for the four factors of parental involvement. I then used these averages for analysis in SPSS V26. First, the scale of reliability was determined for each of the four constructs independently to ensure the survey met the minimum requirements of acceptability. Second, I determined the standard deviation and the mean of the data through the test of descriptive statistics. Third, I analyzed normality statistics. Fourth, to determine if a relationship between parental involvement and students' academic performance existed, I evaluated data using Spearman's correlation. The decision to run Spearman's correlation was made because the data collected from the Likert scale used were ordinal, not interval. Ordered

categories on the parent survey ranged from *not at all true* to *completely true* providing ordinal data more appropriately analyzed with Spearman rather than Pearson (Knapp, 2017). Additionally, since the parent participants were anonymous throughout the process, there was a potential for a few outliers to occur. Using Spearman, the outliers were treated with less sensitivity than with other tests (Hair et al., 2017). Statically, the assumptions for using Spearman's correlation were met. This includes having ordinal variables, variables from paired observations, and a monotonic relationship between two variables (Hair et al., 2017). As a result, I chose Spearman's correlational analysis.

Assumptions, Limitations, and Delimitations of the Research Design

My assumption was that all parents had the ability to accurately interpret how they interacted with their child's online education and to correctly report their student's academic performance. The accomplishments of children provide continual markers of how parents do their job, and it might be human nature for parents to report a higher level of involvement in their children's education. Since responses to the survey were both confidential and anonymous, there should be no need for parents to have inflated either their children's academic performance or their self-assessment of their parental involvement.

A few limitations impacted this quantitative study. First, this was a quantitative study using a survey. There was no ability to understand the feelings of the parents in their involvement in online education. Parents were not given the opportunity to discuss their level of support in online education or provide examples of successes or challenges they experienced. Second, since parents were not able to be observed due to the considerable distance the virtual school covers, the information parents gave on the survey relied on their interpretation of encouragement, modeling, reinforcement, and instruction. As a result, the information parents

provided was an opinion. The answers provided by parents might not accurately reveal their current involvement with their children's online education as parents might have inflated their responses to a more socially acceptable standard. Third, although the survey was translated into Spanish, I am not bilingual. I used Google Translate to perform the majority of the translation, and, in addition, a bilingual colleague was consulted. Since I am not bilingual, I could not be certain the Spanish version conveyed the exact same information as the English version. Finally, this study only used parents from one school sample. The results of this research cannot be automatically translated to all online schools because virtual learning has a lot of variance.

The main delimitation was only surveying parents from one grade level in one online school used for this study. The sample size of the sixth graders' parents from one virtual public school was small compared to the number of virtual middle school parents in the state. Starting at the sixth-grade level provided opportunities for improvements to be made as online students advance through their required K-12 education. Using only parents of sixth-grade students for this study offered insight into setting parents up for success throughout their remaining middle-school and high-school experiences of their children. Understanding the involvement practices of sixth graders' parents that benefit student academic performance the most provided a base of knowledge upon which parents and schools could use to focus future learning coach education and expectations.

Internal and External Validity

Through Liu et al.'s (2010) study, the instrument to measure parental involvement in the online environment proved to be reliable and valid. The 51-question survey covering four mechanisms of parental involvement used confirmatory factor analysis to evaluate the involvement of 938 parents in an online setting. The large reliability coefficient was expressed as

Cronbach's α for the scale of parental encouragement, modeling, reinforcement, and instruction resulting in .91, .88, .90, and .93, respectively, demonstrating the instrument to be a reasonable tool to provide the foundation in a study of virtual parental involvement in their middle-school children's education. The amended 40-question survey adopted from Liu et al.'s (2010) study that I used in this study had a reliability coefficient for all four constraints ranging between .88 and .92.

Internal validity, or the ability to determine whether the independent variable only affected the dependent variable, had factors that could not be controlled (Creswell & Creswell, 2018). Two internal validity factors that influenced the results but were beyond the control of the study include the history of events during the time of data collection and the mortality of subjects. This study was conducted in the spring of 2020 during the exponential growth of the COVID-19 virus in the United States. As all colleges and traditional K-12 schools transitioned to online and many businesses were forced to close in the country, parent participants for this study experienced a variety of unexpected stressors. Across the country, parents found themselves faced with new problems. Issues such as job loss or transitioning jobs to online, more family members at home for extended periods of time, larger draws on WiFi services at home causing slower services or interruptions, and more time spent buying food and necessities due to high demand and low supply were all potentially present. Up until the corona virus, full-time online education did not have unanimous support of members of the state education agency and advocates had to continually work to promote and safeguard the option of online education (National Coalition for Public School Options, 2019). With the spread of the corona virus, and the rapid transition of traditional schools to online platforms to ensure health and safety, established online education as a more viable option than previously regarded.

Full-time K-12 online schools could operate in the state. Mortality was a higher factor in online education than in a brick-and-mortar setting due to a higher level of attrition (Friedhoff, 2017). Since there was limited face-to-face contact with parents and students, it could be challenging for an online school to maintain connections since families could avoid contact attempts and disappear or withdraw from an online school with little notice. Although mortality was an original concern of this study and was part of the climate of online education, the impact the corona virus has secured online education, at least, for the foreseeable future.

External validity presented an issue in this study since parents from only one online school in the state participated. Just as brick-and-mortar schools had variations among those in the same district, virtual schools also have significant differences. There were limitations in generalizing the results of the data collected from one school to all parental involvement practices of online sixth-grade students in every online school. Online, public K-12 schools with similar characteristics could find the results of this study useful in working to improve student achievement of sixth graders.

Expected Findings

In basing this research on the study done by Black (2009) and verified by Liu et al. (2010), it was reasonable to expect similar findings as discovered by these two studies. When parental involvement was broken into the four components of encouraging, modeling, reinforcing, and instructing, Black (2009) and Liu et al. (2010) were able to distinguish where parents influenced student academic performance in virtual high schools. Using an adapted version of the survey and having middle-school parents self-evaluate their involvement in their children's online school, similar strengths and challenge areas were determined. As a result, I expected the null hypothesis—that there is no statistically significant relationship between

parental involvement in the form of encouragement, modeling, reinforcement, and instruction and students' academic performance—would be rejected

The expected major difference was in the degree to which the strengths and challenges were presented. Since middle-school students were younger and often less self-sufficient than their high-school student counterparts, it was logical to expect parental involvement to be more significant in student learning and achievement. As a result, parental involvement in the form of encouraging, modeling, and reinforcing should have had a more positive correlation to student success for online middle-school students than high-school students in virtual education. Instruction, the fourth form of parental involvement, should have had a more negative correlation to student achievement with middle-school students than with high-school students. Middle-school students, notorious for grappling with becoming independent, struggle to balance the need for parental supervision with the desire to do everything on their own. There was more strain on the parent-child relationship when parents were needed to teach children academic skills but were not confident in their abilities with the curriculum, and students showed little patience in getting help from their parents. The results of this research added an understanding of how the parental involvement of sixth-grade students benefitted student academic performance online and identified areas for improvement.

Ethical Issues in the Study

This research met all IRB requirements and standards for using adult participants. A signed consent form (Appendix C) outlining the study's purpose and procedures was collected from all participants. The learning coach population volunteered information based on understanding the confidentiality procedures and knowing they could withdraw from the study at any time with no consequence. The survey took approximately 15 minutes for parents to fill out

completely. No participants were paid to be part of the study, and participants did not incur any charges at any point in the process. Although there were no direct benefits for the participants to take part in the survey, in the long run, the participants contributed to the body of research to help understand how parental support influenced middle-school students' academic performance. This research could improve the involvement practices of parents in their children's online education and help online educators understand how to better prepare parents for the responsibilities of being a learning coach. There was no anticipated conflict of interests since I never met any of the participants. Data collection began March 2020 and concluded in April 2020.

Information collected from each participant was confidential as only I had access to the results. Since the survey did not ask parents to identify themselves, the results were anonymous, even to me. The results of the survey were analyzed in SPSS V26 and valid entries only identified as P1, P2, P3, and so on. Since the population sample was random and survey results anonymous, there was no foreseeable risk for parents to participate in the study. The data collected from the survey will be kept on my computer and locked in a password-protected file for five years. At the end of five years, the data files will be destroyed. The results from the Qualtrics survey and results found from the SPSS V26 software will be saved on my computer for five years and then deleted. No participants' names were used in the data files.

Summary

This chapter described the methodology of how I conducted the research to determine if a relationship existed between parental involvement and student academic performance. A description of the study's purpose was presented alongside the research question and hypotheses. The design of the research, including the target population and sampling method, were explained. In addition, I provided details concerning the instrument and pilot study used for

collecting data for this quantitative study, followed by a description of the data collection process. The dependent variable, student achievement, was operationalized, as were the four independent variables of parental support—encouragement, modeling, reinforcement, and instruction. A random sample of parents was used, and survey data were analyzed by Spearman's correlation. Limitations and delimitations of the research design were presented in addition to the internal and external validity issues of the study. In Chapter 4, I analyze the results of the data. The analysis could assist similar public, online middle schools to understand the role parents have in student success.

Chapter 4: Results

The purpose of this quantitative study was to determine if a relationship existed between parental involvement and student achievement at the middle-school level in an online educational setting. Parental involvement was broken into four categories—encouragement, modeling, reinforcement, and instruction. Using a 40-question Likert survey, parents of sixth-grade students self-evaluated their participation in their children's online education. Through an adapted instrument for this study, which was updated from Black's (2009) study, the reliability coefficient expressed as Cronbach α resulted in .89, .88, .92, and .86 for encouragement, modeling, reinforcement, and instruction, respectively. Spearman's correlation was performed to determine the relationship between each of the four categories of parental involvement and academic achievement demonstrated by the student's resulting GPA.

This chapter offers the data gathered from parent participants of sixth-grade students at an online middle school. Beginning with a description of the population sample used for the study, I discuss my understanding of the participant demographics. Then, statistical assumptions, which had to be satisfied for using Spearman's correlation, will be discussed. Finally, I present a summary of the results, followed by a detailed analysis of what the results showed concerning the posed hypothesis.

Description of the Sample

I utilized a Qualtrics online survey to answer this research question: "What is the relationship between parental involvement and the academic performance of sixth-grade students attending online K-12 public school full-time?" The Qualtrics software was provided by the university. The survey link was emailed to 250 parents, with administrative permission, through the school's online platform. The completion rate of the survey was above saturation at 57% or

143 participants. No participants dropped out of the study after signing the consent form and completing the survey. The second part of the survey (Appendix E) collected demographic information of the parent participants and their sixth-grade children. Although there were 143 parents who completed the survey, only 142 participants completed the demographic information.

Table 3 presents the demographics of the parent participants who completed the online survey. The majority of participants were females representing 94% of the population surveyed. Ninety-one percent of the female participants indicated they were the children's mother. Twenty-eight percent of the parents answered they were a stay-at-home caregiver, with a close percentage, 25%, indicating they were unemployed, retired, a student, or disabled. Fifty-seven percent of the participants labeled themselves as White, while Hispanic families represented 23%, African-American were 11% of the respondents, and only 3% indicated Asian ethnicity. The population represented a range of household incomes with 28% earning less than $30,000, 32% making between $30,000 and $60,000, and 40% earning more than $60,000 annually. For parents who indicated they had a job in addition to being a learning coach, 55% worked less than 20 hours a week. The remaining participants revealed working more than 20 hours a week, with 24% of parents working overtime, exceeding more than 40 hours weekly. Forty-two percent of the parents had some college education or a vocational degree, while 33% had a least a bachelor's degree, including 11 parents with a masters and six with a doctorate. Of the parents in this study, 34% started their sixth grader in online education at the beginning of the 2019-2020 school year. Twenty-three percent of the parents enrolled their sixth grader after the August start date of the 2019-2020 school year. These two groups account for over half of the participants indicating most families in this study were relatively new to online education.

Table 3

Parent Demographic Information Reported by Parents

Baseline characteristic	*n*	%
Gender		
Male	8	6
Female	134	94
Ethnicity of learning coach		
White	81	57
Hispanic	33	23
African-American	16	11
Other	7	5
Asian	3	2
Indian/South Asian	2	1
American Indian	0	0
Employment of learning coach		
Full-time stay at home caregiver	40	28
Unemployed, retired, student, disabled	36	25
Other	31	19
Professional, executive	10	7
Teacher	6	4
Retail sales, customer service	5	3.5
Accounting, bookkeeping	5	3.5
Food service, restaurant	3	2
Labor, custodial, maintenance	2	1
Sales (real estate, commodity, goods, etc.)	2	1
Factory worker, construction or service technician (cares, appliances, etc.)	2	1
Household income		
Lower (< $30,000)	40	28
Middle ($30,000 - $60,000)	46	32
Upper (> $60,000)	56	40
Average hours per week learning coach works at a job		
0-5	54	38
6-20	24	17
21-40	31	22
41-50	18	13
50 or more	15	11

Baseline characteristic	*n*	%
Learning coach's education attainment		
Less than high school	5	4
High school diploma or GED	26	18
Some college, 2-year college, vocational	60	42
Bachelor's degree	23	16
Some graduate work	7	5
Master's degree	11	8
Doctoral degree	6	4
Other	4	3
Learning coach's association with full-time online school		
< one year	33	23
One year	48	34
Second year	25	18
Third year	25	18
Fourth year	3	2
Five years +	8	5
Learning coach's relationship to student		
Mother	129	91
Father	7	5
Grandparent	4	3
Relative	2	1

Table 4 addressed the student demographic information given by the parents. The student gender representation was nearly split in half with 49% male and 51% female. The majority of the sixth graders, 61%, were twelve years old by the spring of 2020. Only 10% of the participants identified their child as being part of a special-education program at the online school.

Table 4

Student Demographic Information Reported by Parents

Baseline characteristic	*n*	%
Gender		
Male	69	49
Female	73	51
Age		
10	2	1
11	47	33
12	86	61
13	7	5
Special Education		
Yes	14	10
No	128	90

Parent participants had three weeks to sign the consent form and complete the survey. Parents who had not signed the consent form after the first week were sent a second email during week two reminding them of the study. By week three, the parents who had not signed the consent form were sent one additional email reminder to access and complete the survey. The survey took a maximum of 15 minutes to complete, which was explained in the initial email. Parents were not provided financial incentives for their participation in the study, and there were no known risks in completing the survey. The demographics of the sample where similar to the population for whom the results were meant to be generalized. Sixth-grade learning coaches at the school were overwhelmingly female, new to online education within the last year, and either did not work outside the home or worked minimal hours each week.

Summary of the Results

One hundred and fifty parents who had at least one sixth-grade child enrolled in the state's public, online, K-12 school completed the 40-question survey built in Qualtrics. After scanning the survey results, seven participants did not complete the entire survey, and their data were eliminated resulting in the final 143 participants. I averaged the data collected from each of the four sections to provide each parent with one value between 1 and 6 for the four parental involvement constructs. The scale of reliability (see Table 5) expressed as Cronbach's α for all four components was between .88 and .92, which is above the .70 mark of acceptability.

Table 5

Summary of Scale Reliability for Official Study

Survey Component	Items	Cronbach's α
Engagement	10	.89
Modeling	10	.88
Reinforcement	10	.92
Instruction	10	.86

The mean for 143 parent participants for the four categories was disclosed in the descriptive statistics of the study (see Table 6). The average was between 5.7 and 5.8. The mean GPA of all students in the survey was 3.5 out of a 4.0 scale. The standard deviation was the highest for parental involvement instruction at .476 and the lowest for reinforcement at .370. GPA resulted in a standard deviation of .690.

Table 6

Descriptive Statistics

Survey Component	*M*	*SD*	*n*
Encouragement	5.6881	.38840	143
Modeling	5.6524	.43715	143
Reinforcement	5.7958	.37017	143
Instruction	5.6867	.47579	143
GPA	3.4668	.69088	143

The Kaiser-Meyer-Olkin (KMO) test was run to measure the sample adequacy for the complete survey (see Table 7). The test resulted in .800 for the 40 questions on the survey. This outcome is nearly ideal and above the .500 minimum (Knapp, 2017).

Table 7

Kaiser-Meyer-Olkin Measure of Sampling Adequacy

Instrument	KMO Measure	.800

GPA was not found to be normally distributed as demonstrated by both the Kolmogorov-Smirnov and Shapiro-Wilk tests (see Table 8). Both normality tests had a statistically significant value of less than .05, indicating that the dependent variable, GPA, was not normally distributed (Knapp, 2017).

Table 8

Tests of Normality

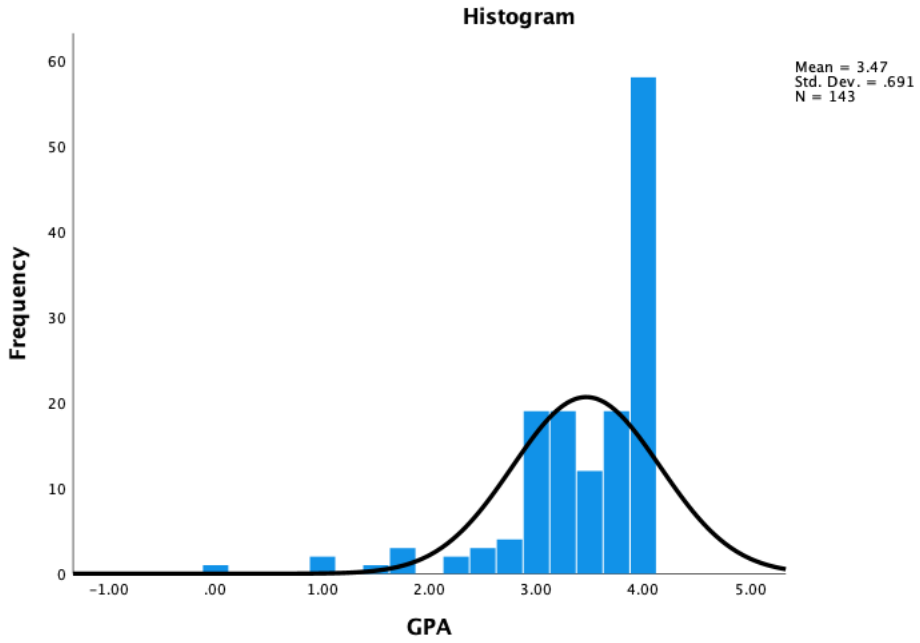
Test	Statistic	Sig.
Kolmogorov-Smirnov	.220	.000
Shapiro-Wilk	.757	.000

Note. $p < .05$

As seen from the histogram (see Figure 3) the GPA data were not normally distributed. The skewness of GPA was calculated at -2.061, falling outside of the −1 to +1 acceptable range, indicating the data were skewed. Kurtosis, a test to determine how flat or peaked the data were distributed, resulted in 5.749. A positive number greater than one implied the distribution of data were too peaked and not considered normal (Hair et al., 2017).

Figure 3

Histogram

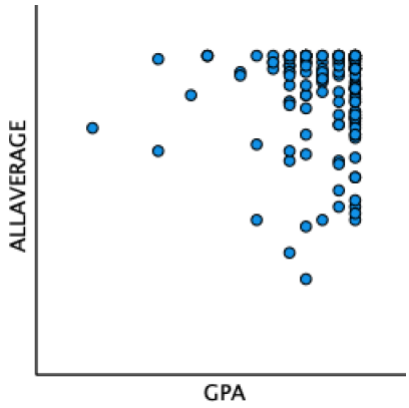


Assumptions for Spearman's Rank-Order Correlation Analysis

Since the Likert scale used was a scale from 1 to 6 in an ordinal measurement, there was not a specific distance between each of the six options. Instead, there was an understanding an answer of 6 was ranked higher than an answer of 5, and the pattern continued to the lowest ranked option of 1. To test if there was a significant relationship between GPA and parental involvement, a nonparametric was chosen. Two assumptions were checked before running the Spearman correlation analysis. First, variables were measured at the ordinal or scale level (Knapp, 2017). The four parental involvement constructs were ordinal and the dependent variable, GPA, was a scale measurement. Second, the variables need to have a monotonic relationship which is not necessarily linear. Averaging all four constructs together and running a scatterplot matrix showed a slight negative correlation between parental involvement and GPA (see Figure 4). Although much the data were grouped together at the top right of the figure, there were several points indicating that as the average of the four parental involvement factors increased, GPA decreased, representing a negative correlation.

Figure 4

Scatterplot of All Parental Involvement Constructs Averaged



Finding the four parental involvement factors collectively had a negative correlation to GPA, the averaged data of each construct were individually examined with scatterplot analysis to provide deeper analysis. All four factors demonstrated a monotonic relationship and followed in the same format as the scatterplot of all parental factors in that a negative correlation was perceived (see Figures 5–8).

Figure 5

Scatterplot of Encouragement

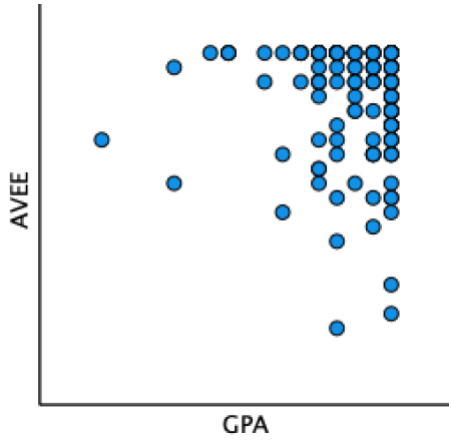


Figure 6

Scatterplot of Modeling

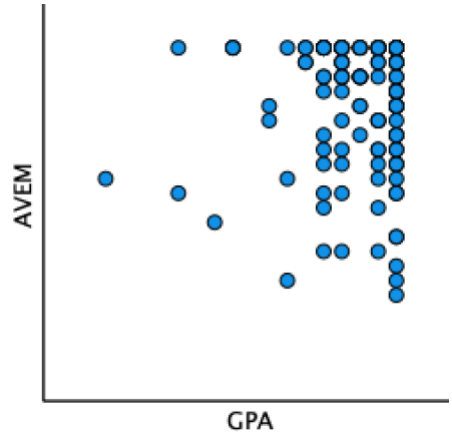


Figure 7

Scatterplot of Reinforcement

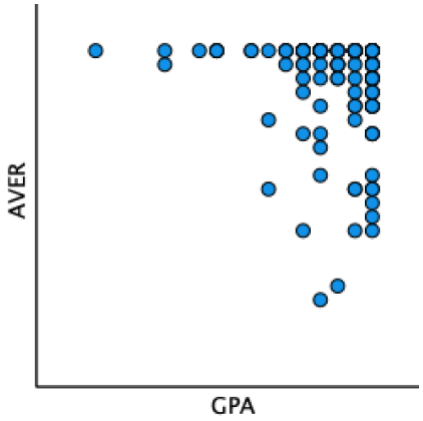
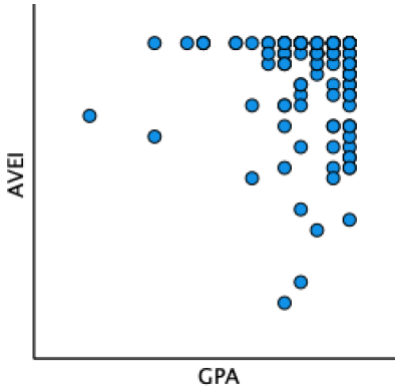


Figure 8

Scatterplot of Instruction



Detailed Analysis

After seeing a negative correlation between parental involvement and GPA in the scatterplots, Spearman's correlation was chosen to analyze each of the four parental involvement factors separately to determine which, if any, had a significant relationship with GPA (see Table 9). The data displayed one statistically significant negative correlation between GPA and parental encouragement: $r_s(141) = -.20$, $p < .05$. The negative correlation between GPA and encouragement indicated that the more encouragement parents offered, the lower a student's

GPA resulted. Despite not being statistically significant, Spearman's *rho* values for modeling, reinforcement, and instruction were also slightly negatively correlated at -.030, -.143, and -.106, respectively. The 95% confidence interval for parental encouragement was consistent with the findings of the Spearman correlation for the same construct. Since the Spearman analysis found a statically significant negative correlation for encouragement, the expectation was both the lower and upper boundaries for the 95% confidence interval should also be negative (Bonett & Wright, 2000). The boundaries for encouragement were both negative, which was not the case for any of the other three parental factors. Modeling, reinforcement, and instruction all had negative lower boundaries and positive upper boundaries (see Table 9).

Table 9

Spearman's Correlation

Dependent Variable	ENC	MOD	REIN	INST
GPA				
Spearman Correlation	-.203*	-.030	-.143	-.106
Sig. (2-tailed)	.015	.725	.088	.209
95% Confidence Interval				
Lower bound	-.396	-.236	-.299	-.262
Upper bound	-.027	.164	.028	.056

Note. $p < .05$

Since the data were not linear, running a linear regression would not work. Additionally, the correlation of the independent variable, GPA, to the dependent variables—encouragement, modeling, reinforcement, and instruction—was less than .25, and no further analysis was run

(Knapp, 2017). The Spearman correlation established there was only a significant, negative relationship between GPA and the individual factor of encouragement.

There were a few outliers that could have affected the data but were left in the overall results. It is impossible to determine if the parents who contributed to the outlying data read the instructions correctly, understood the Likert scale, or gave invalid entries since the survey was answered anonymously. Since the survey was sent through email, and it is possible the person who filled out the questionnaire was not the individual who assisted with the majority of academic support. Had I been able to identify who took each survey, the opportunity of following up to ensure the integrity of the outlying data could have been completed. Since determining the outlier validity was impossible, the data were not removed (Osborne & Overbay, 2004). The influence of these data points remained part of the study.

Summary

The purpose of this study was to determine if a relationship existed between four independent variables of parental involvement and GPA. I recruited the population of sixth-grade parents from an online public school. A total of 143 parent participants, or 57% of the population, made up the random sample, and the data were analyzed. After determining the adapted 40-question survey was reliable, I analyzed the data using Spearman's correlation. Analyzing each mechanism individually uncovered encouragement, modeling, reinforcement, and instruction were all negatively correlated to GPA. Of the four factors, the only statistically significant correlation was found between the parental factor of encouragement and GPA. In the next chapter, I discuss the implications of the results and how parental involvement can be improved to strengthen student academic success.

Chapter 5: Conclusions and Recommendations

Major Findings

The impact parents have on their children in virtual schools varies from their traditional counterparts since teachers cannot be physically present. To help determine how parents can best support their sixth-grade children who attend a full-time online school, I broke parental involvement down into four components. I ran Spearman's correlation to determine how each factor related to the students' GPA. Using a survey adapted from the research of Black (2009) and Liu et al. (2010) on parental involvement in online high school, sixth-grade parents from one K-12 online school in the southern United States were sampled. Although I found data collected from previous studies at the high-school level regarding parental support in online education, limited research in middle schools has been published.

An adjusted 40-question survey was taken by 143 parents of a current sixth-grade student in a full-time online school. The survey was proven to be a reliable measure as the four constants' reliability coefficients, expressed as Cronbach's α, were all between .86 and .92. The data showed no statistically significant correlation between parental modeling, reinforcement, and instruction. Of the four factors, encouragement was the only constant to show significance. Encouragement had a negative standardized coefficient implying the more parents encouraged behaviors they wished their children to repeat, the lower an overall GPA resulted. Although the data showed parental encouragement affected GPA, the effect was relatively small, and no further analysis was conducted.

Implications

Although parents' role increases in a virtual setting, this study could not deduce parental involvement at the middle school age gave drastically different results. I rejected the hypothesis

that there was no statistically significant relationship between parental involvement and the academic performance of sixth-grade students attending an online, public, K-12 school full-time. Encouragement showed statistical significance, but the effect was a negative correlation and only accounted for less than 7% of the population. However, this study's results do not imply parents should be less involved or exempt in their children's online education experience.

This study's results add to online schools' data, contributing to the unclear picture prior research has painted. Black (2009) revealed no statistical significance in the correlation between parental involvement and online high-school student academic success in a large group of over 900 participants. Yet, when a subset of parent results was analyzed, those whose children also responded to the survey, Black (2009) found both parental encouragement and instruction to be statically significant. He concluded the parents' role in online high school education was complex and had similar issues to traditional schools regarding how parents can best help their children. Although the data in this study also found encouragement to be statistically significant, there was a negative correlation instead of a positive one corroborating the complexity of parental involvement. Curtis and Werth (2015) similarly concluded no single parental involvement factor affected online high-school student performance. Unable to identify one factor in which online achievement could be attained, Curtis and Werth (2015) cited school transparency, student self-motivation, student accountability, parental monitoring, parental mentoring, and parental motivating as contributing factors. The results of this research with middle-school students would concur that there is not one single aspect of parental involvement to ensure students' success. Hasler-Waters (2012) found parents of high-school online students faced challenges in their role as a learning coach, such as a lack of time, intricacies of the job, and a limited amount of immediate access to teachers. This study did not find similar results as

the sixth-grade parents who participated in the survey self-evaluated their performance as a learning coach with very high marks. This is not to say online middle-school parents do not struggle with the same challenges as parents of online high-school students, but perhaps they felt like the challenges did not affect their performance to the extent it influenced their children's academic success.

The implications of this study suggest parents need support and guidance on how to involve themselves in their children's education positively. Parents cannot do it alone. In online education, the tensions between children and parents can be exacerbated when the lines between school and home life are blurred (Borup et al., 2015). Parents might strengthen the students' support system by contacting teachers and other mentors in the community to help deliver encouraging messages. Encouragement from other stakeholders could be more positively received, even though the message is identical in information and tone. Administrators could create programs, provide guidance, and build in time for all staff, including themselves, to develop better connections with families. Embracing and practicing Epstein's (2011) spheres of influence where community, school, and family all have an essential part in student success could create valuable, untapped benefits.

Limitations

Several limitations impacted this study. First, the study participants came from only one virtual middle school. The results in this research cannot to be generalized to all virtual middle schools or sixth-grade parents. As is the case with traditional schools, online education has a large variance between schools. Using parent participants from one school for a quantitative study limited the significance of the study.

Second, the lack of variance in the data made it difficult to draw substantial correlations. The Likert scale of 1 to 6 used in the instrument was not proven to be effective in producing statistical variance. The average and standard deviation of encouragement, modeling, reinforcement, and instruction was 5.7, 5.7, 5.8, 3.5 and .39, .44, .37, .48, respectively. The seemingly inflated data showing most parents rated themselves at the higher end of the scale made it difficult to have the needed variance to determine a correlation. Although logically the parents who are the most involved in their children's education were more likely to participate in this survey, this cannot be verified as a reason for the data's lack of variance. The number of participants was beneficial for increasing the power to notice a correlation if there had been a more significant one.

Third, parents might have misunderstood the survey. User error in how parents understood how to answer the survey questions and the fact the survey was conducted in an online platform instead of a paper and pencil format are both limitations that could have impacted the results. The GPA also did not show enough variance with a mean result of 3.5, indicating most students' current grades at the time of the survey were As and Bs. The Likert six-point scale and the GPA scale used in this study did not prove to be a good measure of the four parental involvement factors, because out of 143 parent participants, they all basically answered the same way. To have a good measure of the four factors of parental involvement, the data need variation. Since the data showed little variance within the 143 participants, the Likert scale used proved not to help distinguish a strong correlation with the sample surveyed.

Fourth, with virtual K-12 education continuing to expand, the role parents play in student academic achievement at the middle-school level is broken down to understand how to meet the needs in a variety of learning settings. This study indicates that parental involvement is

complicated and may be difficult to measure effectively with a quantitative study. Parents who participated in the study showed little variance in the questions, making it difficult to determine a correlation. Even taking into consideration the possibility that the majority of parents who participated in this study were highly involved parents in their children's online education and checked their email to activate the research survey, the normality curve for each of the four factors should have been skewed closer to four instead of six (Knapp, 2017). Although all parents took the survey independently, they collectively answered the questions nearly identically, indicating they are doing their job to support and guide their child at a near-perfect level.

Finally, unique to this research's timing was the outbreak of the virus COVID-19, which significantly impacted many aspects of life around the world. As far as the effect on education, the country closed the entire brick-and-mortar educational system among all grade levels, for social distancing measures, and all moved to online instruction. Although this study was conducted with parents who had children already enrolled in full-time online school prior to the outbreak of COVID-19, the participants were impacted nonetheless. Factors such as unemployment, students' siblings vying for technology access, and increased demand on limited bandwidth were challenges in the paradigm shift COVID-19 forced to become a reality in a new normal. It is unclear exactly how COVID-19 impacted parent participation in this research, but it is unreasonable to believe it was negligible.

Recommendations

Although a significant relationship was only shown between GPA and parental encouragement in this study, there is an essential need to continue researching how parents can best support student achievement in a virtual setting. Based upon the results of this study, the

following recommendations are presented. Suggestions are made to further research as well as provide guidance to the major stakeholders.

Recommendations for Educational Leaders

Despite this study's results, parents are invaluable in the virtual world of education (Henderson, 2018; Russell, 2004). In fact, parent participation and involvement are vital, since there is often limited adult supervision in the home compared to a brick-and-mortar school where various certified staff are onsite. If parents cannot provide support in an online setting, the student will often go without supervision. Although the adult-to-student ratio of a virtual school is much lower and often more desirable than in a traditional school setting, parents are asked to be immediate experts in everything to make sure their child is successful. Often without any training or expertise, parents of online students must encourage, model, reinforce, and instruct their students at a high level for student achievement to occur. Therefore, online schools' leadership should encourage parents to build relationships with their children's teachers to help bridge the gap in lacking expertise and battle naiveté (Henderson, 2018).

Just as students have orientation sessions to become familiar with the online platform, parents should also have official orientation sessions. Parents also need to know how the online platform works to ensure their student is completing assignments and attending classes. Most importantly, parents need to know how to access and monitor their children's gradebook to keep them from falling behind. Additionally, knowing how to review their children's progress on each assignment which calculates the time spent reading material, answering questions on a quiz, or completing a written assignment can be valuable information for a learning coach to have when motivating their student to excel. Equipping parents with specific tools provided in an online platform can streamline their ability to support not only their children, but the teachers as well.

As virtual education's popularity continues to increase, it is important for teaching programs in universities and colleges to continue to build classes that incorporate how to implement online classes successfully. Despite many parts of traditional K-12 classroom being replicated in virtual learning, there are significant differences. Teachers not only need to build connections with their students but with parents. Parents, who are now more of a teaching partner, need to understand how to actively complement the teacher's curriculum design, delivery, and expectations. Similar to a sous chef in a kitchen, parents in virtual learning hold much responsibility and play a vital role in their children's education. Educational leaders and teaching programs must increase the awareness of this teacher-parent partnership in online learning so teachers can be better prepared.

Recommendations for Parents

This study indicates parents feel they are doing their job, and the academic achievement measure used showed students are successful. To understand which of the parental involvement components has the most positive effect and to what degree remains unclear. Parents who participated in the study stated they encouraged, modeled, reinforced, and instructed at a high level of what is expected. Unfortunately, the results of this study found parental encouragement of sixth graders had an inverse relationship with student GPA. Despite the results, it is hard to imagine that no parental encouragement is the key component to a student's academic prowess. Parents who encourage their children routinely for their academic success might find encouragement to be a more positive interaction than parents who tend to encourage their children when the children are performing poorly in hopes to motivate them to strengthen their grade quickly (Borup et al, 2013). Encouraging words from parents should be intentional and specifically address what the student has done or can do to improve GPA goals. Simple actions

like a high-five or short pieces of information can be positively received by children. Although teachers still provide encouragement in an online setting, it is not as consistent as in a face-to-face setting. Parents are required to fill the void of physically absent teachers since they are the adults present in their children's academic setting.

With online education being a viable option for schools in situations like the COVID-19 pandemic, parents must understand the inherent shift in their role as a learning coach. Without a brick-and-mortar setting to drop off students, parents must be willing to commit to online learning's extra demands. Although online schools have a wealth of information to help learning coaches attain success, providing solutions for working parents who struggle to support their children while being a productive member at work is not possible. Parents must use the tools and resources available to them to build connections in the community. This may mean parents create local support groups where students can complete daily work while being monitored and motivated by learning coaches who take turns providing the necessary help. In the same way teachers have a network of professionals from which to learn, grow, and develop, parents need the same advantage. Developing a network of local learning coaches would provide a support structure educational leader in virtual schools cannot provide.

Recommendations for Students

Since virtual education allows students a lot more flexibility than traditional brick-and-mortar settings, a lot of a student's success hinges on their ability to do their job. The results of this study found a negative relationship between all constructs of parental involvement and students' academic performance. It is no surprise that preteens have a complex relationship with their parents. If students want their parents to limit parental involvement in their academics it is necessary for students to demonstrate self-motivation. Logging in every day to check schedules

and assignments, accessing available grade books to monitor progress in courses, attending live classes or watching recordings when necessary, and being actively engaged in the curriculum are all tasks students must eventually spearhead.

The more a student becomes self-sufficient, the more parents can focus on the positive aspects of their children's academic performance. The tenuous line parents face between allowing children independence and maintaining control becomes more stable when students prove they can engage in their own learning. Teachers provide the necessary curriculum, guidance, and instructional techniques for student success. Parents monitor daily progress and provide an environment conducive to learning. It is ultimately up to students to understand the content and complete the work. Encouragement, modeling, reinforcement, and instruction are futile if students are unwilling to accept responsibility for their learning. Education belongs to the student, and it is vital they take the responsibility seriously by demonstrating self-efficacy if they are to realize academic growth.

Recommendations for Future Researchers

Since three of the four constructs of parental involvement were not relevant to student performance based on GPA, the adopted survey might need an update. Further research might consider adjusting the Likert scale to a 0 to 10 option instead of 1 to 6 and change the wording of *not at all true* and *completely true*. Parents might have misinterpreted the *completely true* option as the effort they give when they do engage, model, reinforce, and instruct their students, but they do not do all four involvement strategies 100% of the time. Adjusting the scale into a 0 to 10 option allows for easy translation into 10% increments of self-assessing how often they perform each task. Changing the wording from *not at all true* and *completely true* to something

more applicable to the percentages, such as *never or 0% of the time* and *always or 100% of the time* might yield better variance in the survey results.

In today's U.S. education culture, it is not common for students to earn a failing grade. Therefore, utilizing GPA does not accurately depict student achievement as grades might be inflated. Using current grades during the semester avoided the end-of-year issues with extra credit and favorably rounding, yet inflated grades were likely still a factor. Further studies might rescale the GPA norm to include just A, B, and C grades since failing students result as statistical outliers and affect how the curve is read and the data collected.

This research further supports the notion that parents' role in online education is complex, since even isolating specific factors of parental involvement did not produce a significant correlation to student achievement. Implementing an alternate research method and research design might yield better results. Where a quantitative correlational study investigates whether a relationship exists between variables, an experimental study would be able to show a cause-effect relationship. Choosing a qualitative method could provide more in-depth understanding of how parents of the same school or even different online schools work with their children in helping them achieve academic success. A case study or narrative inquiry might prove beneficial as individual thoughts, feelings, and perspectives on parental involvement could be captured and analyzed to provide a more holistic view. Additionally, a case study or narrative inquiry can be done in different online schools to add another comparison component to the research. This data type could provide more specific guidance for administrators, teachers, and parents in maximizing student performance online through parental involvement.

Since this research was only conducted with one online public school in a single grade of middle school, further research could be done among more full-time online middle schools,

expanding the sample size. Instead of limiting the participants to one grade level, the entire middle-school division can be included. Additionally, the private, virtual, middle-school sector is an important section of the population and could provide valuable insight into parental involvement. The role parents play in K-12 online school is different than in a traditional educational setting. Teachers who are physically present in a face-to-face setting to oversee classroom management and curriculum mastery are replaced by parents who must supervise and structure the educational experience, now at home. The data in this study do not support the notion that increasing parental involvement affects student academic performance. Encouragement, modeling, and instruction all failed to show a statistically significant effect on improving student scores. Through Spearman's correlation, parental encouragement did show statistical significance, but the effect was negative and not huge.

Summary

Using an updated survey, this study provided information about an online middle school adding to the model of how parental involvement relates to students' academic performance. Chapter 5 provided the major findings found from this quantitative study. Implications were discussed as this research both confirmed and questioned previous research of online schools. Limitations of the study and how they might affect the significance of the research were examined. Based upon the results, I provided recommendations to educational leaders, parents, students, and future researchers.

Conclusion

The question examined in this quantitative correlational study was what the relationship between parental involvement in the form of encouragement, modeling, reinforcement, and instruction was to the academic performance of sixth-grade students attending online, K-12,

public school full-time. With virtual education increasing in popularity but falling short in keeping up with the results of brick-and-mortar schools, it was necessary to investigate how parental involvement related to the academic success of their children. Online schools have created a valued place in the academic world, and understanding how to create a constructive environment is vital. As Hoover-Dempsey and Sandler (2005) and Epstein (2011) explained, parents are an essential part of educating children.

This dissertation investigated the relationship between parental involvement and student academic success of sixth graders in a public online school in the United States. To date, no study had been done to determine if a relationship between students' academic performance and parental involvement in an online middle school existed. Basing this research on Bandura's (1977, 1986) social learning theory, which concluded children often imitate parental behaviors, I performed a quantitative study. This study used Hoover-Dempsey and Sandler's (2005) model, which broke independent variable of parental involvement into four categories, including encouragement, modeling, reinforcement, and instruction. The dependent variable of students' academic performance was defined by GPA. The results showed no significant relationship between the constructs of engagement, instruction, and modeling and students' academic performance. Parental encouragement was the only mechanism statistically significant as a predictor variable for online sixth-grade student academic performance showing a negative relationship. The null hypothesis was rejected.

Parental involvement in student education is complicated, and the online setting is no exception. As virtual schools require parents to organize, nurture, monitor, motivate, and instruct their child in the absence of the physical presence of teachers, there is an important balance of involvement that must be practiced to be beneficial (Borup, 2016; Borup et al., 2015; Borup et

al., 2019). Overly engaged parents can be as much of an obstacle as parents who are not involved at all. Especially during teenage years, when tensions between parents and children are naturally high, adding more interaction and accountability, no matter how necessary, can intensify and exaggerate the relationship (Borup et al., 2015). Sixth graders, identified as preteens, begin experimenting with the struggle between independence and dependence. The stressed dynamic could explain the negative relationship between parental involvement and encouragement found in this study between teenagers and parents. Despite the honorable intent, it is reasonable that parents' attempts at encouragement might be met with contempt.

I presented communication and support as a theme in the recommendations I provided. Educational leaders, including administrators and teachers, need to provide information and support to guide parents through their increased responsibilities as a learning coach. Parents need to create local support groups to help share the added duties online education requires and communicate successes and challenges in managing their role in a virtual school. Students must demonstrate some level of self-motivation in working to succeed academically by asking for help from both their parents and teachers when needed.

As traditional schools have been forced to implement online education, if only temporarily, due to COVID-19, it is clear that virtual education requires additional attention to ensure student achievement is maximized. Providing proven guidelines to online schools and parents of virtual students will only enhance students' academic experience. Virtual education is not weakening but growing in its demand. Parental involvement is essential if virtual schools are going to close the performance gap with their brick-and-mortar counterparts. Although this research was not able to demonstrate encouragement, modeling, reinforcement, and instruction are statistically dominant factors in students' academic performance, they are critical,

nonetheless. Kids need all of these components tailored to their individual needs. The ability for online schools to adapt and change to the diverse needs of families and the high demands of society makes it vital for research to continue to best implement our most valuable resource—education.

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Appendix A: Previous Research Studies

Date	Author	Paper/Dissertation title	Research question	Research method/ Design	Research findings
1987	Epstein, J.	Parent involvement: What research says to administration	How can administrators increase parent involvement in traditional schools?	Qualitative interviews	Administrators can involve parents by coordinating information, supporting funding, and recognizing parental involvement
1998	Litke, D.	Virtual schooling at the middle grades: A case study resume	What are the factors that influence success in a virtual middle school?	Qualitative case study	Three parent types: absentee, supporters, and participatory adds to the complexity of parental involvement in student success
2003	Weiner, C.	Key ingredients to online learning: Adolescent students' study in cyberspace-the nature of the study	What are the key ingredients for cyber high school students to be successful?	Qualitative case study	Students who are committed and motivated to learn and have a support and guidance, especially from their teacher, will be successful
2009	Black, E.	An evaluation of familial involvements' influence on student achievement in K-12 virtual schooling	What effect does familial involvement have on student achievement in virtual high school?	Quantitative survey	Familial participation has a predictive effect on student achievement
2010	Liu, F., Black, E., Algina, J., Cavanaugh, C., Dawson, K.	The validation of one parental involvement measurement in virtual schooling	Is the Hoover-Dempsey and Sandler Parental Involvement Mechanism Model valid?	Quantitative	The Hoover-Dempsey and Sandler model is valid
2011	Chen, H., Chang, C.	Parental involvement in traditional and online education	How does parental involvement affect learning in traditional and online schools?	Quantitative	A significant relationship between parental support and student learning performance is shown

2012	Hasler-Waters, L.	Exploring the experiences of learning coaches in a cyber charter school: A qualitative case study	What is the role of parents in cyber high school to promote student success?	Qualitative case study	Parents must create a supportive environment conducive for their students to learn at home
2012	Sorensen, C.	Learning online at the K-12 level	How do parents perceive the experience of student online learning?	Quantitative	Parents were generally positive about online learning, but had concerns with the lack of socialization
2013	Beck, D., Maranto, R., Lo, W.	Determinants of student and parent satisfaction at a cyber charter school	What is the subjective satisfaction of students and parents at a cyber charter high school?	Quantitative	There is significantly higher satisfaction in cyber charter school among special education students and parents
2013	Borup, J., Graham, C., Davies, R.	The nature of parental interactions in an online charter school	How does parent-instructor and learner-parent interactions effect student motivation?	Quantitative survey	Parental interactions were negatively associated with student performance
2013	Curtis, H.	A mixed methods study investigating parental involvement and student success in high school online education	How does parental involvement influence student success who attend a couple virtual classes in high school?	Mixed method: Quantitative & Qualitative semi-structured interviews	High school students in a full-time, online environment are affected by many factors in achieving success
2013	Robinson, T	Parental involvement: Motivation factors among African American parents	What factors motivate African American parents to be involved in student learning?	Quantitative survey	Parental role construction has a significant relationship in being involved in student learning
2013	Williams, V.	A quantitative study of Michigan high school students' perception of parents' role in their academic success	What effect does parental involvement have on student success in a traditional high school?	Non-experimental quantitative study	Parents have a negative to minimal effect on student academic success

2014	de la Varre, C., Irvin, M., Jordan, A., Hannum, W., Farmer, T.	Reasons for student dropout in an online course in rural K-12 setting	Why did students taking an online Advanced Placement class drop the course?	Qualitative content analysis	Students dropped the course due to various reasons including parental influences
2014	Hasler-Waters, L., Leong, P.	Who is teaching? New roles for teachers and parents in cyber charter schools	What are the roles of teachers and parents in an online K-10 school?	Qualitative exploratory interviews	Teachers are the experts and facilitators while parents are the managers of student learning
2015	Borup, J., Stevens, M., Hasler-Waters, L.	Parent and student perceptions of parent engagement at a cyber charter high school	How do students and parents perceive parental involvement influences student success?	Qualitative case study	Parents and students find parental involvement necessary, but natural tensions between teenagers and parents can be difficult and exaggerated with the consistent proximity on online education
2015	Bird, K.	Influence of parental involvement on student assignment submission punctuality in the private online learning environment	What effect do parents play in the punctuality of students submitting assignments?	Quantitative correlational study	No significant difference indicated between parent involvement and student assignment submission
2015	Curtis, H., Werth, L.	Fostering student success and engagement in a K-12 online school	What factors affect student achievement in a K-12 online high school?	Qualitative semi-structured interviews	No single factor affected student performance in a full-time online high school
2015	Louwrens, N., Hartnett, M.	Student and teacher perceptions of online student engagement in an online middle school	How do middle school students engage behaviorally, cognitively, and emotionally in an online school?	Qualitative case study	Behavioral engagement had the strongest results with all activities where cognitive and emotional engagement had more limited results
2016	Borup, J.	Teacher perceptions of parent engagement at a cyber high school	How do teachers perceive parent involvement	Qualitative case study	Parental involvement is important but being

			influences student success?		too involved can be an obstacle for student achievement
2016	Borup, J., Stevens, M.	Parents' perception of teacher support at a cyber charter high school	How do parents perceive teachers support the students and parents in an online high school?	Qualitative	Parents generally find teacher support satisfactory, yet explain too much communication is as negative as too little
2018	Kumi-Yeboah, A., Dogbey, J., Yuan, G.	Exploring factors that promote online learning experiences and academic self-concept of minority high school students	What factors promote and constrain online learning experiences of minority high school students?	Qualitative	Similar to the traditional setting factors such as collaboration with students and teachers and parent support enhance learning while lack of social presence and cultural inclusion provide barriers for student success
2018	Henderson, T.	Parent-teacher relationships in cyber charter schools: Investigating the quality of the parent-teacher relationship and its impact on student achievement	How does the quality of parent-teacher relationships impact student achievement in grades 1-12?	Quantitative	Parent-teacher relationships have a predictive effect on student achievement
2019	Borup, J., Walters, S., Call-Cummings, M.	Examining the complexities of parental engagement at an online charter high school: A narrative analysis approach	How does parental involvement differ with students requiring a high level of support?	Qualitative narrative analysis	Parent support is valuable, but not easy especially for students requiring high levels of support
2019	Farmer, T., West, R.	Exploring the concerns of online K-12 teachers	What concerns do teachers have in educating students virtually in high school?	Qualitative interpretive phenomenological analysis	Online teachers have a variety of concerns which prove to be irregular and unpredictable based on teaching experience

Appendix B: Initial Recruitment Email

Hello,

My name is Tiffany Nayar. I am currently working on dissertation research to explore the relationship between parental support and online students' academic achievement. With permission from the school I am contacting you because you are a parent of at least one child enrolled in sixth-grade and I need your help to complete my study.

Participating in this study requires you to complete a survey online, taking no more than fifteen minutes. The survey is confidential and completely anonymous. If you are willing to participate in this study, please click on the link below to sign the informed consent.

Link to Informed Consent Form_Nayar Research

After you complete the consent form, please click on the link below to complete the survey.

Link to Survey_Nayar Research

Thank you for your willingness to participate in this study and help me reach my goal of completing my dissertation and moving one step closer to earning a doctorate. If you have any questions or need further information, please contact me.

Sincerely,

Tiffany Nayar

Appendix C: Informed Consent Form

Introduction:
My name is Tiffany Nayar, and I am a doctoral student. I am conducting a research study on how parents influence their child's education in online school. With the increasing enrollment and interest in online education, I hope to draw attention to the role parents play in assisting students in achieving success. This research is part of the requirements for completing my degree.

Activities:
If you agree to participate in this study, you are asked to:
1. Sign a consent form indicating your willingness to participate in the study by signing this form electronically.
2. Complete a survey online with approximately forty questions on your involvement in your child's online education. As part of the survey, you will be asked to provide your child's grade in math, English, science, and social studies so grade point average can be calculated. At the end of the survey you will be asked a few demographic questions to help build the research data.

The entire survey will take no longer than fifteen minutes and will be confidential and anonymous. You will not incur any charges.

Eligibility:
Learning coaches are eligible to participate in this study if you have at least one sixth-grader enrolled in the online school used for this study. You are not eligible to participate in this study if you are not the learning coach of a sixth-grader currently enrolled. The goal is to gather at least two-hundred surveys from learning coaches.

Risks:
The survey is confidential and anonymous. There are no known risks involved in this study.

Benefits:
The information gained is valuable in contributing to the understanding of how online education can improve to best meet the needs of the students and families it serves. The data collected could be used to develop training programs for parents on ways to enhance participation with their child's public virtual school. Online education is an increasingly growing medium to educate students, and identifying the strengthens and challenges of virtual schools is vital to student achievement.

Confidentiality:
Participating in this study and any information you provide about you and your child will be kept confidential at all times. Your name and your child's name will not appear on the survey. The results of every survey will be submitted anonymously and kept secure. Names, email addresses, and IP addresses will not be collected. The data collected and the results analyzed could become part of a published product; however, the identity of the parent participants will not be indicated. Only the outcomes of the group will be reported.

Right to Withdraw:
I have read and understand the above statements and what is being request of me in this study. I understand participating in this study is voluntary and I am free to withdraw for any reason, at any time by sending an email and requesting to be withdrawn. There is no penalty for not participating.

Contact Information:
If you have questions, please contact me:

Tiffany Nayar

If I am not able to answer your questions, you can contact my dissertation chair:
Dr. Libi Shen

Certification:
I have read and understand the above statements and what is being request of me for this study. I understand participating in this study is voluntary and I am free to withdraw for any reason, at any time without penalty by emailing Tiffany Nayar. I certify that I am willing to participate in this research study.

_____
Signature of Learning Coach

Appendix D: Instrument: Parental Involvement Mechanisms Measurement

Current Grade

Accessing your child's online gradebook, what letter grade does your child have

Math _____
English-Language Arts, ELA _____
Science _____
Social studies _____

The instrument to measure the four variables employs a six-point Likert scale response:

Not at all true ---------- Completely true

1 2 3 4 5 6

The following are the items that tend to measure the corresponding variables:

I **encourage** this child … (learning coach encouragement)

1. ... to believe that he/she can do well in school.
2. ... when he/she doesn't feel like doing assignments.
3. ... to ask for help when a problem is hard to solve.
4. ... to organize his/her work space.
5. ... to consistently monitor how he/she is doing in each course by checking the online gradebook.
6. ... to look for more information about topics presented in courses
7. ... to stick with problems until he/she solves them.
8. ... to have a positive attitude.
9. ... to communicate with his/her teacher.
10. ... to attend live classes regularly and actively participate.

I **show** this child that I… (learning coach modeling)

11. ... want to learn as much as possible.
12. ... can learn new things.
13. ... know how to problem solve.
14. ... enjoy problem solving.
15. ... do not give up when things get hard.
16. ... ask for help when a problem is hard to solve.
17. ... can productively communicate with others.
18. ... make education a priority.
19. ... have a positive attitude.
20. ... have an organized work environment.

I **show** this child I like it when he/she … (parental reinforcement)

21. ... wants to learn new things.
22. ... has a positive attitude about doing his/her assignments.
23. ... asks for help.
24. ... communicates with his/her teachers.
25. ... explains to me what he or she thinks about school.

26. ... attends live classes regularly and actively participates.
27. ... understands how to solve problems.
28. ... sticks with a problem until he/she solves it.
29. ... organizes his or her assignments.
30. ... consistently checks his/her progress in the online gradebook.

I **teach** this child … (parental instruction)
31. ... to go at his/her own pace while completing assignments.
32. ... how to use resources in completing assignments.
33. ... to consistently check his/her progress in the online gradebook
34. ... how to organize his/her learning environment.
35. ... to follow the teacher's directions.
36. ... to ask questions when he/she doesn't understand something.
37. ... how to find out more about the things that interest him or her.
38. ... to have a good attitude about his or her assignments.
39. ... to keep trying when he/she gets stuck.
40. ... to communicate with the teacher when he/she has questions.

Appendix E: Parent Demographic Questions

Student Demographic Information

Gender of student
- Male
- Female

Age of student
- 10
- 11
- 12
- 13
- 14

Enrolled in SPED
- Yes
- No

Learning Coach Demographic Information

Gender of learning coach
- Male
- Female

Ethnicity of learning coach
- American Indian
- African-American
- Asian
- Hispanic
- Indian/South Asia
- White
- Other

Employment of learning coach
- Unemployed, retired, student, disabled
- Labor, custodial, maintenance
- Factory worker, construction
- Driver (taxi, delivery, bus, truck)
- Food service, restaurant
- Skilled craftsman (plumber, electrician, etc.)
- Retail sales, customer service
- Service technician (cars, appliances, etc.)
- Accounting, bookkeeping
- Creative arts (writer, musician, photographer, etc.)
- Sales (real estate, commodity goods, etc.)

Social services, public services
Teacher
Professional, executive
Other

Household income
Lower (< $30,000)
Middle ($30,000-$60,000)
Upper (> $60,000)

Average hours per week learning coach works at job
0-5
6-20
21-40
41-50
50 or more

Learning coach's education attainment
Less than high school
High school or GED
Some college, 2-year college/vocational
Bachelor's degree
Some graduate work
Master's degree
Doctoral degree
Other

Learning coach's association with online school
Less than one year (started in the middle of the 2019-2020 school year)
Less than one year (started the first day of school this 2019-2020 year)
This is my second year
This is my third year
This is my fourth year
I have been involved in online education for more than five years.
Other

Learning coach's relationship to student
Mother
Father
Stepmother
Stepfather
Grandparent
Relative
Other

Appendix F: IRB Approval Letter

DATE:	February 26, 2020
TO:	Nayar Tiffany, Ed.D
FROM:	Concordia University - Portland IRB (CU IRB)
PROJECT TITLE:	[1560358-1] The Relationship between Parental Support and Online K-12 Students? Academic Performance
REFERENCE #:	EDD-20200208-Shen-Nayer
SUBMISSION TYPE:	New Project
ACTION:	APPROVED
APPROVAL DATE:	February 26, 2020
REVIEW TYPE:	Limited Review

Thank you for your submission of New Project materials for this project. The Concordia University - Portland IRB (CU IRB) has determined this project is EXEMPT from further CU IRB review according to federal regulations.

We will retain a copy of this correspondence within our records. Please keep this correspondence within your records.

You are responsible for contacting and following the procedures and policies of Concordia University and any other institution where you conduct research.

The researcher is responsible to conduct research, even if it is exempt, with integrity and care. You are encouraged to continue to work with the CU IRB Office and involve others at Concordia University as necessary and prudent in your research.