Parent-Teacher Relationships in Cyber Charter Schools: Investigating the quality of the Parent-Teacher Relationship and Its Impact on Student Achievement

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PARENT-TEACHER RELATIONSHIPS IN CYBER CHARTER SCHOOLS:
INVESTIGATING THE QUALITY OF THE PARENT-TEACHER RELATIONSHIP
AND ITS IMPACT ON STUDENT ACHIEVEMENT

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By
Theresa Henderson

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PARENT-TEACHER RELATIONSHIPS IN CYBER CHARTER SCHOOLS:
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ABSTRACT
PARENT-TEACHER RELATIONSHIPS IN CYBER CHARTER SCHOOLS:
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By
Theresa Henderson

December 2018

Dissertation supervised by Dr. Kara McGoey

K-12 online and blended learning initiatives have experienced unprecedented growth in the past decade and are fast becoming a mainstream option for today’s generation of learners. In 2016, over five million students were enrolled in K-12 full-time state virtual schools and all 50 states and the District of Columbia offered some form of online learning for K-12 students with even greater growth projections by 2020. While K-12 online learning has grown in popularity and demand, research-based investigations into successful teaching, learning and student support developments are limited.

There is reason to believe that the quality of the parent-teacher relationship in cyber charter schools could be as important, if not more important than its role in traditional schooling. Currently, contemporary studies on the parent-teacher relationship only address face-to-face student populations. Therefore, the study of the
quality of the parent-teacher relationship and its impact on student achievement in cyber charter schools could assist the development of new strategies in cyber charter schools, teacher preparation programs, accrediting institutions, and policy makers.

The purpose of this study is to investigate the quality of the parent-teacher relationship and its impact on student's achievement in K-12 cyber charter schools. To address this question, this study employed an online survey adapted from Timothy Majerus’ (2011) instrument, which was constructed on research by Hoover-Dempsey and Sandler, sampling parents from a cyber charter school in the Northeastern U.S. Quantitative statistical procedures were utilized to analyze the resulting data.

Outcomes indicate that the quality of the parent-teacher relationship do have predictive effect related to student achievement. Parental perception of the parent-teacher relationship, opportunity for parent involvement, parent efficacy, and time for parental involvement were assessed. Implications related to these findings can be used to increase the quality and effectiveness of the parent-teacher relationship in cyber charter schools by developing comprehensive plans for policy makers and accrediting institutions, developing and delivering curricula materials and trainings for pre-service and in-service teachers, and developing and delivering instructional materials for parents that promote an efficacious relationship with teachers that will significantly impact their child’s academic achievement and success in cyber charter schools.
DEDICATION

This work is dedicated to the glory of God.
ACKNOWLEDGEMENT

This dissertation work had critical contributions from many minds and hearts. I am deeply grateful for those mentioned below and more. Because of them, this moment is possible.

To my triune Lord, please accept this as an imperfect offering. May it be pleasing in your sight.

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Chapter I

INTRODUCTION

“When schools work together with families to support learning, children tend to succeed not just in school, but throughout life.”
(Henderson & Berla, 1994)

Nearly two decades ago, I began what would become a pioneer voyage in the uncharted world of K-12 virtual education. In 2001, my four children were among the first students in Pennsylvania to enroll in a full-time cyber charter school. As a family, we traversed the numerous evolutions of cyber education that continue even today. In addition to investing in my children’s education through this innovative model, I also had the privilege to teach and administrate in the cyber charter school in which they were enrolled.

This unique intersection and platform as a parent, teacher, and administrator in a cyber charter school provided an internal view of the relationship between teachers and parents and the potential impact this relationship has on student achievement. As a current teacher educator, I am keenly aware of the great need and responsibility to prepare teacher candidates for this new landscape of 21st century education that includes K-12 online learning and the transitioning and sometimes overlapping roles between parents and teachers. These collective experiences have prompted my interest for this dissertation study.

Background

K-12 online and blended learning initiatives have experienced unprecedented growth in the past decade. In 2016, over five million students were enrolled in K-12 full-time state virtual schools and all 50 states and the District of Columbia offered some form of online learning for K-12 students (Archambault, Debruler & Freidhoff, 2014; Rice, 2014; Watson, Murin, Vashaw, Gemin, & Rapp, 2010). Hasler Waters & Leong (2014) estimates that 29% of K-12 students are
supported with some type of online instruction with Christensen, Johnson, and Horn (2011) predicting that online learning may comprise half of the U.S. K-12 education by the year 2020. These numbers reflect the immense need for understanding online learning and its key players; schools, teachers, parents, and students (Rice, 2006). Despite this ongoing growth and need, there has been a deficit of rigorous reviews of the literature related to online schools and learning (Babour, 2014a).

Teacher education programs have the responsibility to facilitate student learning in this 21st century educational landscape. A national survey of teacher preparation programs conducted by Kennedy and Archambault (2012a) found that only 1.3% of universities were preparing educators for settings other than the traditional, brick and mortar classroom. A follow-up study in 2016 indicated a slow, but targeted expansion of 4.1% of teacher education programs beginning to include online preparation and field experiences (Archambault, Kennedy, Shelton, Dahal, McCallister, & Huyett, 2016). The Council for Accreditation of Educator Preparation (CAEP), formerly known as the National Council for Accreditation of Teacher Education (NCATE), mandates standards for universities to adhere in preparing their students for the teaching profession. These standards however, do not acknowledge the need to learn pedagogical practices of online learning/teaching (NCATE, 2008; NCATE, 2007). The need for a swift and dramatic shift in preparing preservice teachers is critical for the next generation of learning environments, which includes blended (combination of face-to-face and online learning) and online (100% online learning) models (Williams & Casale, 2015).

Three central topics undergird this study that examines the impact the parent-teacher partnership has on student achievement: cyber charter schools, parent-teacher partnership, and student achievement.
Cyber Charter Schools

The emergence of online learning represents the latest in the ever-accelerating series of technological advances in the field of distance education (Borup, Stevens, & Waters, 2015). Online instruction is a descendant of distance education, which began in the early 18th century (Caruth & Caruth, 2013). The primary purpose of K-12 distance education was to expand access to curriculum and provide educational choices (Clark, 2013). This focus has changed little over time. Today, the primary form of distance education is online learning. One such form of online learning is cyber charter schools.

Cyber charter schools are full-time K-12 public schools that combine online learning with traditional home based practices in which technology plays a central role in the delivery and management of teaching and learning (Waters, Barbour, & Menchaca, 2014). These schools are publically funded and governed by charter school laws within the states, which afford them some flexibility in the way they operate (Hasler Waters & Leong, 2014). Although these schools are chartered within a single district, they draw students from across the state (Watson, Winograd, & Kalmon, 2004). These schools employ certified teachers and require parents to serve as learning coaches for their children. While parents enroll their children into cyber schools for a variety of reasons, little is understood about these key players and minimal research exists examining parental involvement in an online learning environment (Hasler Waters, 2012).

Parent-Teacher Partnership

Educators and parents play critical roles in the educational success of students in both traditional and online school settings. The parent-teacher expectations, roles, and relationship in an online environment however differs than that in a traditional school setting. Researchers agree that the role of the teacher in an online environment is significantly different than in the

In cyber schools, the teacher is no longer the sole provider of instruction and changes have resulted to their traditional role (Hasler Waters & Leong, 2014; Tucker, 2010). While they are still a central component in supporting students, many of these schools rely heavily on the parents to partner as co-educators (Gill et al., Hasler Waters, 2012). Hasler Waters and Leong (2014) began a much-needed exploration into the complex and overlapping roles that teachers and parents share as co-educators in supporting students in cyber charter schools. Parents, referred to as learning coaches in cyber charter schools, assumed the responsibility for managing their own children’s education and academic progress. Teachers focused primarily on being experts, facilitators, and ensuring student mastery of content.

Some have critiqued that cyber charter schools rely too heavily on parents, many of whom are not certified teachers and may not be able to provide the appropriate support or instruction to students (Ahn, 2011). In fact, this reliance on parents performing instructional duties was the basis of a legal action against the Wisconsin Virtual Academy in 2007 (Molnar et al., 2015). The court ruled against the cyber charter school finding that parents assumed teaching responsibilities for which they were not properly licensed by the state. While this challenge has not been brought forth in other states, this charge identifies a greater need for educational policy surrounding the roles and expectations of teachers and parents in cyber charter schools.

Decades of research have shown that students’ educational success increases with
parental involvement in traditional school settings (Fan & Chen, 2001; Epstein, 1986). Parent involvement is one of the best predictors of academic achievement, including parent income (Epstein, 2009; Eagle, 1986; Becher, 1984; Michigan Department of Education, 2002). Joyce Epstein (1991; 1995; 2005), a leading researcher in parental involvement and founder and director of The National Network of Partnership Schools at John Hopkins University (Herrell, 2011), is credited with providing some of the earliest and most influential work on parental involvement in student education.

Epstein’s (2005) work found that a majority of teacher education program leaders perceived coverage of this topic in their institutions as inadequate. Preparation and development of skills needed for engagement of parents has not been routinely included in teacher education programs despite strong evidence that supports quality partnerships between teachers and their students’ families (Brown, Harris, Jacobson, & Trotti, 2014; Epstein, 2005; Tichenor, 1997). Preliminary studies show that the partnership between teachers and parents may be even more important in an online environment (Black, 2009).

Student Achievement

Cyber charter schools have attracted substantial interest for parents and students as public school alternatives, however interest has outpaced research into their academic effectiveness. There have been limited studies that have examined achievement in cyber charter schools (Cavenaugh, 2009) and little to guide policy relevant to K-12 instructional practice in full-time online programs (Barbour, 2014a). Glass and Welner (2011) produced a policy report in part to address alarm over the severe lack of empirical evidence examining the academic effectiveness of student learning and achievement in full-time online schools.
The minimal research that does exist reports mixed to negative results (Lueken, Rittner, & Beck, 2015; Molnar, et al., 2015). Molnar et al. (2015) states that the literature has found that the students enrolled in full-time cyber charter schools do not perform as well as those enrolled in brick and mortar settings. To compare academic performance of full-time cyber charter schools, Molnar et al. (2015) identified three possible ratings: academically acceptable, academically unacceptable, and not rated. Of the 400 schools that were assessed, only 285 (71.2%) were rated meaning no state performance assessments were available for nearly 30% of the full-time cyber charter schools. Of the 285 that were rated, only 117 (41.1%) were rated acceptable with nearly 60% being rated academically unacceptable.

Lueken, Ritter, & Beck (2015) however stresses the need for longitudinal studies that examine students transitioning from a traditional brick and mortar school to a non-traditional cyber charter school. Initial findings reveal that first year cyber students experience an initial dip in academic achievement but report significant data of students that are enrolled for more than three years perform equal to or better than their matched peers (Lueken, et al., 2015). Despite conflicting and often negative research regarding student and school performance, the rapid expansion of cyber schools is remarkable (Molnar et al., 2015) indicating a need for future research.

**Problem Statement**

Virtual schools account for a relatively small portion of the overall school choice options in the U.S., however they constitute one of the fastest-growing alternatives, overlapping with both homeschooling and charter schools (Molnar et al., 2015). Despite this documented growth, there continues to be a lack of reliable and valid evidence to guide full-time online practice and
policy. Consequently, little progress has been made toward the requirements for the preparation, certification, and licensure of online teachers (Barbour, 2014a).

The impact of the quality of the parent-teacher partnership in cyber charter schools may be as important, if not more important than in traditional school settings (Hasler Waters & Leong, 2014; Black, 2009). Current research does not address the impact of the parent-teacher partnership on student achievement in cyber charter schools. This dissertation will investigate the impact that the parent-teacher relationship plays on student achievement in cyber charter schools.

**Purpose of the Study**

The purpose of this quantitative study was to determine if the quality of the parent-teacher relationship influences student achievement in cyber charter schools. A partnership with a full-time state-funded cyber charter school was established to facilitate the collection of data; respondents consisted of parents whose children had been enrolled within this institution during the 2016-2017 academic year. Although negative evidence on the performance of full-time cyber charter schools currently exist, many remain optimistic that these schools can work and hope that more research and reasoned policymaking may revise and strengthen the operation of these alternative schools (Molnar et al., 2015; Hasler Waters, 2014). This dissertation aims to contribute to this research and goal.

**Research Questions**

Using the framework from Majerus’ (2011) survey, amended to include self-reported student achievement questions, this exploratory study investigated the factors that influence the parent perception of the parent-teacher relationship in a full time K-12 cyber charter school. The following research questions were used to understand the parents’ perceptions of the parent-
teacher relationship, and the influence of these factors on student achievement. Specifically, the following questions framed the research:

1. Does the quality of the parent-teacher relationship, opportunity for parent involvement, parent efficacy, and time for parent involvement impact student achievement in math in cyber charter schools?

2. Does the quality of the parent-teacher relationship, opportunity for parent involvement, parent efficacy, and time for parent involvement vary by grade level in cyber charter schools?

3. Does the quality of the parent-teacher relationship, opportunity for parent involvement, parent efficacy, and time for parent involvement vary by free and reduced lunch status in cyber charter schools?

As the evidence suggests that parental involvement in traditional school settings positively influences student achievement, it was anticipated that there will be a positive correlation between the parent-teacher relationship and student achievement in cyber charter schools. Conversely, as Epstein’s (1996) work suggests that the parent-teacher relationship tends to decline across the grade levels in traditional school settings, it was anticipated that this will also be true for the parent-teacher relationship in cyber-charter schools.

**Significance of the Study**

Understanding the quality of the parent-teacher relationship and its impact on student achievement in cyber charter schools is significant to current and future educational research. Because there are limited studies that have examined the parent-teacher relationship in cyber charter schools, it is also significant for many constituents: (1) for teacher education programs
who need to prepare teachers for 21st century learning environments; (2) for education policymakers, such as the Council for Accreditation of Educator Preparation (CAEP) who need to recognize and act on online preparation needs for rising educators; (3) for pre-service educator candidates who need to be prepared and understand the parent-teacher roles and relationship with online teaching; and most importantly, (4) for K-12 students, whose academic achievement can be advanced through the strengthening of the parent-teacher partnership.

Summary

This Introduction sets the framework for the importance of this study as it pertains to the understanding of the impact on the parent-teacher partnership student achievement in an ever-changing teaching and learning environment. This study will support discussion among educational constituents regarding the need for teacher training for blended and online learning environments. The remainder of this manuscript includes four chapters. Chapter 2, the Literature Review, examines the topics and research that helped to inform and necessitate the development of this study. Chapter 3, The Methodology chapter, is a detailed overview of the theoretical framework, study design, data analysis, validation, and limitations. Chapter 4, Results, provides the data analysis results. And Chapter 5, the Discussion, provides an overview of the results and implications of those results as they pertain to practice, research and policy. Chapter 5 also provides suggestions for future research.

Definition of Terms

Distance Education - Institution-based, formal education where the learning group is separated, and where interactive telecommunications systems are used to connect learners, resources, and instructors (Schlosser and Simonson, 2002).

Online Schools - An entity approved by a state or governing body that offers courses through
distance delivery, most commonly through the Internet (Barbour, 2009). This broad and continuously changing term is used to interchangeably to identify various forms of web-based instruction such as virtual school, e-learning, distance education, cyber education, and can be supplemental (including credit recovery) or full-time cyber schools.

Cyber Charter Schools - Cyber Charter schools are full-time K-12 public schools that combine online learning with traditional home based practices in which technology plays a central role in the delivery and management of teaching and learning (Waters, Barbour, & Menchaca, 2014). These schools are publically funded and governed by charter school laws within the states, which afford them some flexibility in the way they operate (Waters & Leong, 2014). Although these schools are chartered within a single district, they draw students from across the state (Watson, Winograd, & Kalmon, 2004). They typically provide students with computers, software, and network-based resources, while also providing access to teachers via email, telephone, web, and/or teleconference (Gill, Walsh, Wulsin, Matuleqicz, Severn, Grau, & Kerwin, 2015) and usually employ certified teachers (Hasler Waters, 2014).

Learning Coaches - The parent or guardian who assumes the responsibility for supporting the student’s learning within a cyber charter school (Barbour, 2013; Hasler Waters, 2013).

Pre-Service Teachers - Undergraduate and graduate students enrolled in a teacher education programs designed to prepare them to become K-12 educators.
Chapter II

LITERATURE REVIEW

Introduction

While controversial at its inception in the 1990’s, online education is no longer a trend, but mainstream (Clark, 2013; Kentnor, 2015). K-12 online and blended learning initiatives have experienced unprecedented growth in the past several years (Archambault, Debruler & Freidhoff, 2014; Rice, 2014). In 2010, over 450,000 students were enrolled in K-12 state virtual schools and over 2 million enrolled in K-12 online courses; additionally all 50 states and the District of Columbia offered some form of online learning for K-12 students (Watson, Murin, Vashaw, Gemin, & Rapp, 2010). Since 2010, the growth has continued to expand exponentially with Christensen, Johnson, and Horn (2011) predicting that online learning will comprise half of the U.S. K-12 education by the year 2020. Furthermore, several states have legislated online courses or experiences be required for graduation (Cavanaugh, 2013). Despite this rapid increase and advancement, limited rigorous high-quality peer reviewed research in K-12 online education exists (Barbour & Reeves, 2009) and teacher education programs have been slow to modify their traditional-based programs to prepare their teaching candidates for online teaching and learning (Archambault & Kennedy, 2014; Barbour, 2014; Kennedy & Archambault, 2012; Rice, 2006).

As new research has emerged, it primarily focused on the rapid growth of the K-12 online sector. Little is understood about this new paradigm of learning or its key-players: schools, teachers, parents, and students (Rice, 2006). Even less is known about student achievement, or its contributing factors, in the K-12 online models. Initial studies revealed that K-12 online learners demonstrated greater progression in critical thinking, researching, computer usage, independent learning, problem-solving, decision-making and time management than their
traditional school counterparts (Barker & Wendel, 2001). Haughey and Murihead (1999) described the characteristics of successful online learners as being highly motivated, self-directed, self-disciplined, and independent. In contrast, Barbour (2009) indicated “this is clearly not an accurate description of the entire or possibly even the majority of students attending virtual schools and, particularly, cyber schools” (p. 18). Litke’s (1998) early research alerted that virtual student success was linked to other important factors such as the student’s motivation, organization, and perspective of online education in addition to the role of the parent; absentee, supporting, and participatory. Litke (1998) suggested that an inverse relationship might exist between the amount of responsibility students accept for their own learning and the amount of parent involvement required for student success. Curtis (2013) substantiated Litke’s (1998) work suggesting that the best anecdote for virtual students’ academic success is the accepted responsibility for their own learning combined with parental involvement.

Despite this conclusion, research exploring the impact of parental involvement and student achievement in K-12 online schooling is negligible, and research addressing how the parent-teacher partnership impacts student achievement is non-existent. (Hasler Waters & Leong, 2014; Waters, Menchaca, & Borup, 2014.) Decades of research have shown that students’ educational success increases with parental involvement in traditional school settings (Fan & Chen, 2001; Epstein, 1986.). Understanding the evolving and redefined roles and relationships between parents and teachers in online schools is significant to educational research. This knowledge will add to the existing literature and aid in the preparation and development of pre-service and in-service teacher programs.

This chapter explores the current understanding of the parent-teacher partnership in K-12 virtual schools and its potential impact on student achievement. The chapter is organized into six
sections; the first section provides a historical overview of distance learning and the current K-12 online models; the second section presents the evolution of cyber-charter schools and its key-partners; the third section examines the parent-teacher relationship in traditional school settings; the fourth section discusses what is known about the parent-teacher relationship in cyber-charter schools; the fifth section explores what is known about student-achievement in K-12 virtual schools; and the sixth and final section explores the theoretical frameworks that undergird this study. The literature review will provide the basis for understanding how the quality of the parent-teacher partnership may impact student-achievement.

**History of Distance Learning**

*The Evolution of K-12 Distance Education*

Schlosser and Simonson (2002) comprehensively defined distance learning in a published monograph by The Association for Educational Communications and Technology as:

Institution-based, formal education where the learning group is separated, and where interactive telecommunications systems are used to connect learners, resources, and instructors.

According to Schlosser and Simonson, four main components are fundamental to this definition. First, in order to distinguish distance education from self-study, distance education must be institutionally based. Second, the teacher and learner must be separated in terms of geography, time, and knowledge of the concepts to be taught. Thirdly, some method of interactive communication must be available for learners, with the resources of instruction, and with the teacher. The final concept emphasizes the inclusion of instructional environments and resources that facilitate and promote learning experiences (Rice, 2006).

Online enthusiasts have mistakenly concluded that distance education arrived fully
developed in the 1990’s through the inception of web-based instruction (Moore & Kearsley, 2011). Online instruction, however, is a continuation and descendant of distance education and has a shared history with correspondence (the use of print based materials) education (Caruth & Caruth, 2013). Some assert that the earliest examples of distance education trace to the early Christian church leaders writing letters to inform budding congregations of the teachings of Jesus Christ (Demiray & İşman, 2001). Sumner (2000) however, argues that it was closer to the start of the Industrial Revolution. Regardless, in the centuries that followed, and with the integration of technological advancements, distance education became more “evolutionary than revolutionary” (Harting, 2005).

By the 1700’s, with higher accessibility of print-based materials and reliable postal service, two-way correspondence education was born and became an accepted and widespread means to deliver and receive knowledge (Kentnor, 2015). One of the first significant and successful examples of distance education through correspondence of study was the establishment of the “Society to Encourage Studies at Home” by Anna Eliot Ticknor following the Civil War in 1873. Ticknor, daughter of George Ticknor, a Harvard professor and renowned scholar who played a significant role in the founding of the Boston Public library, created what soon became known as the “silent university” enrolling more than 7,000 students aimed at the education of women who were usually denied access to formal educational institutions (Caruth & Caruth, 2013; Moore, 2011).

Universities and private schools offering correspondence study flourished during the 20th century by serving as a bridge to higher education (Willis, 1994). In addition, universities began providing instruction to high school students to help with deficiencies, qualify for admission, apply coursework toward degrees, and offering courses of study for elementary, secondary, and
vocationally-oriented learners (Moore, 2013). Consequently, correspondence education, both internationally and nationally, became a means for K-12 children in rural areas to receive educational opportunities (Barbour, 2014). The primary intention for distance education then, and some maintain today, was to provide educational opportunities for the under-represented (Moore & Kearsley, 2011).

Emergence of Electronic Media-Based Methods

The distance education revolution continued to expand as new technologies emerged and many in the distance education community reacted with optimism and enthusiasm to these media based developments (Barbour, 2013; Moore, 2013). The first major electronic media, educational radio, was, and in some countries still is, an inexpensive and immediate means to educate a large number of people (Clark, 2013). The U.S. however saw limited growth in the K-12 sector (Kentor, 2015). Educational telephone and television also experienced limited applications (Clark, 2013).

The hallmark of this second generation of distance education was the United Kingdom’s Open University, the world’s first university to teach only at a distance (Sumner, 2000). During its first year of inception in 1971, the Open University admitted more than 24,000 students and utilized a range of media including radio, television, audio and video cassettes, and computer software in addition to its print-based curricula (Harting & Erthal, 2005). As Britain’s largest single teaching institution, it has had over 2 million students take its courses. Despite the accelerating development of new educational technologies, the vast majority of distance education throughout the world at the end of the 1980s was still predominantly print-based (Sumner, 2000). All of these technologies and approaches however, helped set the stage for the virtual school movement (Clark, 2013). Clark (2013) demonstrated the succession of
technologies that were utilized to deliver distance education in the 20\textsuperscript{th} century (see table 1).

“The primary purpose of K-12 distance education, expanding access to curriculum and providing educational choices, has changed little over time (Clark, 2013).”

Table 2-1

*Timeline of K-12 Distance Education and Instructional Technologies (Clark, 2013)*

<table>
<thead>
<tr>
<th>Date</th>
<th>First Documented Use in K-12 Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>1910</td>
<td>Instructional Film</td>
</tr>
<tr>
<td>1923</td>
<td>Supervised correspondence study</td>
</tr>
<tr>
<td>1930</td>
<td>Educational radio</td>
</tr>
<tr>
<td>1933</td>
<td>Educational television</td>
</tr>
<tr>
<td>1956</td>
<td>Telecourse study</td>
</tr>
<tr>
<td>1961</td>
<td>Airborne instruction</td>
</tr>
<tr>
<td>1965</td>
<td>Computer based learning</td>
</tr>
<tr>
<td>1967</td>
<td>Audio Conferencing</td>
</tr>
<tr>
<td>1973</td>
<td>Educational satellite instruction</td>
</tr>
<tr>
<td>1984</td>
<td>Computer mediated communication</td>
</tr>
<tr>
<td>1985</td>
<td>Satellite network instruction</td>
</tr>
<tr>
<td>1989</td>
<td>Microwave/ITFS network instruction</td>
</tr>
<tr>
<td>1993</td>
<td>Web based instruction</td>
</tr>
</tbody>
</table>

*The Emergence of the K-12 Online School*

The emergence of K-12 online learning in the mid-1990’s represents the latest in the ever-accelerating series of technological advances in the field of K-12 distance education (Borup, Stevens, & Waters, 2015). In the last two decades, the number of K-12 students engaged in online learning has increased from 40,000 to 50,000 to more than two million (Barbour, 2014).

The majority of these enrollments are comprised of high school students supplementing their face-to-face courses with one or two online courses. These supplemental courses are commonly provided by virtual schools (Barbour, 2013).

The most accepted definition of a virtual school is an entity approved by a state or governing body that offers courses through distance delivery, most commonly through the
Internet (Barbour, 2009). Barbour (2013) states that it is becoming more difficult to place online learning programs into specific categories, as terms are being used synonymously. Terms such as distance education, distance learning, e-learning, Web-based instruction, virtual schools, virtual learning, online learning and cyber schools are used interchangeably to describe this broad, somewhat confusing, and constantly changing field of nontraditional instruction (Rice, 2006; Saba, 2005). Clark (2013) has classified K-12 virtual schools into seven categories, each of which serve valid purposes.

Table 2-2

Clark’s Seven Categories of K-12 Online Learning Programs (Clark, 2013)

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>State-sanctioned, state-level</td>
<td>Schools that operate on a statewide level, such as the FLVS or the Illinois Virtual School (IVHS).</td>
</tr>
<tr>
<td>College and University-based</td>
<td>Independent university high schools or university-sponsored delivery of courses to K-12 students, such as the University of Nebraska-Lincoln Independent Study High School or the University of California College Prep Online.</td>
</tr>
<tr>
<td>Consortium and regionally-based</td>
<td>Schools operated by a group of schools or school districts that pool their resources to participate, such as the VHS.</td>
</tr>
<tr>
<td>Local education agency-based</td>
<td>Schools operated by a single school or school district, such as the Gwinnett County Online Campus or the Cobb County eSchool.</td>
</tr>
<tr>
<td>Virtual Charter Schools</td>
<td>Schools created under legislation in many states, such as Connections Academy, also commonly known as cyberschools.</td>
</tr>
<tr>
<td>Private virtual schools</td>
<td>Schools operated in the same manner as a brick and mortar private school, such as the Christa McAuliffe Academy in Washington state.</td>
</tr>
<tr>
<td>For profit providers of curricula, Content, tool and infrastructure</td>
<td>Commercial companies acting as vendors for the delivery of courses or the use of</td>
</tr>
</tbody>
</table>

17
Cyber Charter Schools

Definition, Evolution, and Status

Cyber charter schools are full-time K-12 public schools that combine online learning with traditional home based practices in which technology plays a central role in the delivery and management of teaching and learning (Waters, Barbour, & Menchaca, 2014). These schools are publically funded and governed by charter school laws within the states, which afford them some flexibility in the way they operate (Hasler Waters & Leong, 2014). Although these schools are chartered within a single district, they draw students from across the state (Watson, Winograd, & Kalmon, 2004). They typically provide students with computers, software, and network-based resources, while also providing access to teachers via email, telephone, web, and/or teleconference (Gill, et al., 2015). Cyber charter schools employ certified teachers and require parents to serve as learning coaches for their children, however little is understood about these roles and partnership and how they support student learning (Hasler Waters, 2014).

Following their birth in the mid-1990’s, online charter schools grew rapidly during the 2000’s and by 2011, all 50 states and the District of Columbia offered some form of supplemental and full-time K-12 online programming (Watson, 2010). K-12 online learning enrollment numbers became difficult to track because no single entity was responsible for the collection of data in addition to the numerous options students can engage in this form of learning (Glass & Welner, 2011). Keeping Pace 2012 comprised various reports from groups such as the National Center for Educational Statistics (NCES; 2011) and the Evergreen Education Group (2012) and quantified that the total number of students taking part in some
form of online learning is likely several million, or slightly more than 5% of the total K-12 student population across the United States (Hasler Waters, 2014). Ambient Insight (2011) predicted that by 2016 there would be an estimated 4,750,000 K-12 students enrolled in full-time online schools, and that 29% of all U.S. children would be enrolled in some type of supplemental online instruction (Hasler Waters, 2014) with Christensen, Johnson, and Horn (2011) predicting that online learning will comprise half of the U.S. K-12 education by the year 2020. Compiled from numerous reports, Figure 1 depicts the evolution of online charters from 1994 to 2016 and illustrates the steady growth of this emerging form of K-12 distance education.

Despite reports that students are enrolling in cyber schools at a rapidly increasing rate (International Association for K-12 Online Learning [iNACOL], 2012; Barbour, 2013; Gill, 2015), Evergreen Consulting predicts that growth in online charter schooling is slowing (Watson, et al., 2014) and this deceleration may be attributed to the level of parental commitment required. Horn and Staker (2011) emphasize that this challenge alone may limit cyber education schooling from growing beyond 10% of the total K-12 student population (Hasler Waters, 2014).
As online enrollments continue to evolve, it is important to examine the unique role parents play in K-12 online learning, their impact on student achievement, and how they engage in their students’ learning (Borup, Stevens, & Waters, 2015). Minimal research exists examining parental involvement in an online learning environment (Hasler Waters, 2013) and little is understood about the parents who enroll their children into cyber charter schools. The National Center for Educational Statistics, among other centers for school demographics, do not have specific demographic profiles of parents whose students attend virtual, blended, or cyber charter schools. (Hasler Waters, 2013).
Preliminary findings indicate that parents enroll their students in cyber charter schools for a variety of reasons (Erb, 2004), but may fail to understand their role in their child’s online learning (Boulton, 2008; Like, 1998). Cyber schools often attract and serve students who may experience difficulty in attending traditional options due to physical disability, participation in such events as pre-professional ballet or Olympic level sports, or students that live in remote locations (Marsh & Carr-Chellman, 2009). In addition, prior traditionally home-schooled families, special needs for a learning disabled or gifted child, faith-based reasoning, inner-city safety concerns, credit recovery, students at-risk for drop-out, and those dissatisfied with traditional schooling are amongst some of the reasons parents are choosing to engage in cyber education (Marsh, 2009; Barbour, 2009; Cavanaugh, 2009). Further, Beck, Maranto, & Lo (2013) suggests that parents and students in middle and high school were often driven by bullying and academic failure at their prior schools and the population attending may differ in important ways from the populations attending traditional public schools. Marsh (2009) concludes that the advancement of technology has opened boundaries and options to traditional models.

*Key Cyber School Player: Online Teachers*

With the continued progression of the cyber school movement, it is important to understand the roles and responsibilities of online teachers, how they have come to the profession, and the skills these teachers feel are needed to succeed in these very different educational environments (Archambault & Larson, 2015; Archambault, 2011; Miller & Ribble, 2010; Davis, Roblyer, Charania, Ferdig, Harms, Compton & Cho, 2007). Cyber charter schools tend to attract teachers with strong qualifications and employ those with state certification in their content areas (Cavanaugh, 2009). Fifty-six percent of cyber school teachers have advanced
degrees (Rice, Dawley, Gasell, & Flores, 2008) compared with 48% of teachers in traditional schools in the U.S. (National Center for Education Statistics, 2006). While online teachers are highly educated in traditional measures, rarely has this preparation dealt with teaching practices in the online environment (Archambault, 2015).

Despite cyber schools being the fastest growing field in education, there is limited research focusing on the necessary characteristics and needs of online teachers (Means, Toyama, Murphy, Bakia, & Jones, 2009). Researchers agree that the role of the teacher in an online environment is significantly different than in the traditional school (Hasler Waters, 2014; Barbour, 2012; Patrick & Dawley, 2009). Even further, some caution that a good classroom teacher does not necessarily parallel a good online teacher (Davis & Roblyer, 2005). The online setting requires teachers to employ new forms of communication, engagement, and assessment (Searson, Jones, and Wold, 2011) which includes managing and engaging students virtually and being more of an instructional designer and interaction facilitator (Kennedy & Archabault, 2012a; Eastron, 2003).

Archabault and Larson (2015) conducted a mixed methods study with 325 K-12 online teachers from 23 different states to assess how teachers arrived in the online environment, what skills are needed, and to what extent were they prepared for this new form of teaching. Based on the results, K-12 online teachers are highly motivated, place a high value on learning and education, and enjoy teaching with technology, however received little to no preparation in their teacher education programs for this growing platform of schooling. Employment opportunity was the most cited motive for teaching online (20.5%) followed closely by those seeking a new model for teaching (19.4%). No online teacher indicated there was pre-service online preparation...
for his or her current role. 37.3% of respondents specified that training on available technologies would be the most valuable form of preparation for new online teachers.

The study revealed two overarching attributes needed to be successful in online teaching; the ability and knowledge to effectively communicate through interactive technologies such as blackboard collaborate, email, phone conferencing, and instant messaging; and expertise in various organizational techniques needed for the online platform such as monitoring student engagement, mastery of content, progress, and feedback. Additionally, K-12 online teachers must have excellent time management skills and the ability to multi-task. Table 3 is the coded results of the open-ended question, “What do you think are the most important attributes a K-12 online teacher must have to be highly effective?”

Table 2-3

Effective Attributes of K-12 Online Teachers (Archambault and Larson, 2015)

<table>
<thead>
<tr>
<th>Coded Characteristic</th>
<th>Representative Elements of Coded Characteristic</th>
<th>Number of Responses</th>
<th>Percent age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong Communication Skills</td>
<td>Able to communicate from a distance (phone, text, email, video chats) good customer service skills</td>
<td>126</td>
<td>48.6%</td>
</tr>
<tr>
<td>Organized and Prepared</td>
<td>Structured, balanced, strong time management skills, prepared, forced, accountable, diligent</td>
<td>98</td>
<td>37.8%</td>
</tr>
<tr>
<td>Knowledgeable and Experienced</td>
<td>Expert in content area, desire to learn, willingness to continue professional development, can accurately assess students, knows best practices for teaching online, engaging, classroom experience, curious</td>
<td>72</td>
<td>27.8%</td>
</tr>
<tr>
<td>Highly Flexible</td>
<td>Able to multi-task, open to flexibility</td>
<td>55</td>
<td>21.2%</td>
</tr>
<tr>
<td>Motivated</td>
<td>Self-Motivated, Type A personality, ambitious, disciplined, strong work ethic, proactive, driven, determined</td>
<td>54</td>
<td>20.8%</td>
</tr>
</tbody>
</table>
hard worker, high integrity, dedicated, persistent, committed

Patient and Caring
Friendly, supportive, understanding, positive, encouraging, personable, approachable

Creative and Adaptable
Quick thinker, problem solver, able to adapt plans, open-minded, student centered, individualized instruction

Strong Technology Skills
Comfortable with technology, able to give technology support to students, able to analyze student data

Accessible and Punctual
Available, responds quickly to students and parents, provides frequent feedback, punctual with grading, attentive

Able to Connect
Interacts with students, motivating, good rapport with students and parents, passion, desire to help students

Additionally, Archambault and Larson (2015) asked the online teachers to provide their perspective on what elements would be most helpful for training new K-12 online teachers by posing the following question, “Based on your experience teaching online, what elements of training would be the most valuable in preparing new online teachers?” Table 4 demonstrates the thirteen coded characteristics.

Table 2-4

<table>
<thead>
<tr>
<th>Suggested Training/Professional Development Elements for New Online Teachers (Archambault and Larson, 2015)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Coded Characteristic</strong></td>
</tr>
<tr>
<td>Technology</td>
</tr>
<tr>
<td>Category</td>
</tr>
<tr>
<td>--------------------------------</td>
</tr>
<tr>
<td>Mentoring</td>
</tr>
<tr>
<td>Communication</td>
</tr>
<tr>
<td>Hands on Training</td>
</tr>
<tr>
<td>Time Management</td>
</tr>
<tr>
<td>Classroom Management</td>
</tr>
<tr>
<td>Content and Materials</td>
</tr>
<tr>
<td>Ongoing Training</td>
</tr>
<tr>
<td>Online Teaching Strategies</td>
</tr>
</tbody>
</table>
Archambault (2015) confirmed what Rice (2006) concluded earlier that K-12 virtual teachers face challenges not necessarily experienced by their face-to-face counterparts. A national survey of teacher preparation programs conducted by Kennedy and Archambault (2012a,) found that only 1.3-4.1% of universities were preparing educators for settings other than the traditional, brick and mortar classroom (Archambault, et, al, 2016). Smith, Clark, & Blomeyer (2005) support this position stating that only 1% of K-12 teachers in the United States have been trained to teach online. Following Christensen, Horn, & Johnson’s (2011) projection that online learning will comprise half of the U.S. K-12 education by the year 2020, the need for a swift and dramatic shift in preparing the preservice teachers is critical for the next generation of learning environments- including blended, online, and competency-based models (Williams,
Currently, the Council for Accreditation of Educator Preparation (CAEP), formerly known as the National Council for Accreditation of Teacher Education (NCATE), mandates standards for universities to adhere in preparing their students for the teaching profession. These standards however, do not acknowledge the need to learn pedagogical practices of online learning/teaching (NCATE, 2008; NCATE, 2007). In addition, the Teacher Education Accreditation Council (TEAC) also makes no mention of preparing preservice teachers for online teaching (TEAC, 2010). As national and state education policies are revised, teacher educators and education policy makers need to consider updating teacher preparation to include the need for training in this exponentially expanding area of education (Kennedy & Archambault, 2012; Watson, 2010). iNacol (2013) and Barbour’s (2012) “Call to Action” indicate the great urgency in addressing teacher preparation programs and an immense need for future research in this field.

**Parent-Teacher Partnership in Traditional Schools**

All parents are teachers of their children (Wright, Daniel, & Himelreich, (2000); Bronfenbrenner, 1979; Gordon & Welner, 1976). Joyce Epstein (1991; 1995), a leading researcher in parental involvement and founder and director of The National Network of Partnership Schools at John Hopkins University (Herrell, 2011), is credited with providing some of the earliest and most influential work on parental involvement in student education. With numerous studies and work in over 100 publications, she theorized that the school-home relationship was one of the most significant and critical links to student achievement (Herrell,
Decades of research have supported that children perform better and attain higher academic achievement in traditional school settings when parents are involved in their education (Hasler Waters, 2014; Fan, 2001; Epstein, 1986). Further, parent involvement is one of the best predictors of academic success, including parent income (Epstein, 2009; Eagle, 1989; Becher, 1984; Michigan Department of Education, 2002). Parental engagement in traditional settings is related to greater academic achievement in terms of both grades and standardized test performance (Cheung & Pomerantz, 2011; Fan & Chen, 2001; Froiland, Peterson, & Davison, 2013; Hara & Burke, 1998; Hill et al., 2004/2005; Jeynes, 2007; McWayne, Hampton, Fantuzzo, Cohen, & Sekino, 2004). Becher’s work and research on parental involvement (1984) supports the positive effects on student achievement by concluding:

Children with higher scores on measures of achievement, competence, and intelligence had parents who held higher educational expectations and aspirations for them than did parents of children who did not score as high. Parents of the former children also exerted more pressure for achievement, provided more academic guidance, and exhibited a higher level of general interest in their children.

The U.S. Department of Education (2010) states that parents need to be more fully integrated into children’s learning activities and that parents can have a positive impact on their child's learning. Eagle (1989) conducted a study examining the effects of socioeconomic status, family structure, and parental involvement and its impact on student achievement. She found that parents who read to their children in early childhood, the mother’s employment status, parents who talked regularly with teachers, and parental monitoring of school work, were variables that had the greatest impact on student achievement (Eagle, 1989). While there is considerable debate in what constitutes meaningful parent involvement (Fan & Chen, 2001, Black, 2009),
most researchers agree it refers to the practices of parents, caregivers, and guardians supporting their school-aged children and meaningful two-way communication including student academic learning and other school related activities (Black, 2009; Henderson & Mapp, 2002; Eagle, 1989, Epstein, 1987). Regardless of how parent involvement is defined, it is vital to a child’s success at school (Bracey, 2001).

Parents need to be considered part of the school community or culture along with teachers and children (Brown, Harris, Jacobson, & Trotti, 2014). However, it is not always clear to parents, teachers, children, or administrators how and to what extent parents should be involved (Gordon & Breivogel, 1976; Henderson & Berla, 1994). What is clear through Lindle’s (1989) study is that parents want to be treated with respect and do not want a “professional-client” relationship.

A MetLife Survey (Markow & Martin, 2005) reported that novice teachers in traditional school settings considered working with parents as their paramount challenge and the area in which they were least prepared. Epstein’s work (2005) found that a majority of teacher education program leaders perceived coverage of this topic in their institutions as inadequate. Preparation and development of skills needed for engagement of parents has not been routinely included in teacher education programs despite strong evidence that supports quality partnerships between teachers and their students’ families (Epstein, 2005; Hiatt-Michael, 2004; Tichenor, 1997).

At the heart of any successful parent-involvement program are teachers who not only are committed to building family and school relationships but also have the skills and knowledge to do it well. To succeed, a teacher must be able to make good use of families’ expertise and resources, at the same time reaching out to families to support them. All the while, the teacher must also meet the day-to-day challenges of the

As the teacher generally determines the quality of the parent-teacher partnership, teacher educators should examine the curricula of teacher education programs to determine if preservice students are gaining the necessary skills to promote and establish these important parent-teacher relationships (Brown, 2014). When teachers and parents work collaboratively in a traditional school setting, the following outcomes have been documented: (1) higher student achievement, (2) improved student behavior and attendance, and (3) more positive school climates (Henderson & Mapp, 2002).

**Parent-Teacher Partnership in Cyber Charter Schools**

In cyber schools, the teacher is no longer the sole provider of instruction and changes have resulted to their traditional role (Tucker, 2010, Hasler Waters, 2014). While they are still a central component in supporting students, many of these schools rely heavily on the parents to partner as co-educators (Gill et al., 2015; Hasler Waters, 2013). Because K-12 students tend to have fewer meta-cognitive skills and self-regulation abilities as compared to adult learners and require adult supervision to encourage and monitor their learning (Borup, 2013; Cavanaugh, 2009; Cavanaugh, Gillan, Kromrey, Hess & Blomeyer, 2004), cyber schools have substantial expectations of parents.

The parent or guardian, usually referred to as the learning coach, assumes the responsibility for supporting the student’s learning (Gill et al., 2015; Barbour, 2013; Hasler Waters, 2013). These responsibilities may make parental involvement in K-12 online learning more important than in a traditional education setting (Liu, Black, Algina, Cavanaugh & Dawson, 2010). More than half of cyber charter schools at all grade levels (including 80 percent
of schools at the elementary level) expect parents to participate in training programs (Gill et al., 2015).

In a traditional classroom environment, the teacher is responsible for designing the instructional activities, presenting the content or actually teaching the material, and helping to facilitate students while they are completing any independent work (Barbour, 2013, Hasler Waters, 2013). In an online environment, these roles are tasked to different individuals (Barbour, 2013). In cyber schools, the student is assigned a teacher, similar to the way homeroom teachers serve students in traditional schools. The assigned teacher is considered the content expert who monitors progress, communicates expectations, facilitates technologies, and shares learning strategies with the learning coaches amongst other responsibilities.

The greatest parent responsibility is at the elementary level, but cyber schools expect parents to play a role even for high school students. Gill et al., 2015 report that many online charter schools expect parents to participate in the student’s instruction, monitor student progress, verify seat time, and attend parent-training sessions (see Figure 2). Some research has noted that parents were not well informed of the level of involvement and commitment required and that this lack of understanding may contribute to student challenges and teacher frustrations (Fertig, 2014; Boulton, 2008; Litke, 1998). Litke (1998) and Hasler Waters and Leong (2014) both found that parents expected more from teachers and teachers from parents.
A 2014 ethnographic qualitative case study conducted by Hasler Waters and Leong explored the roles of teachers and parents as they worked to support students in a cyber charter school. The study’s participants included fourteen teachers, parents, and administrators from a large cyber charter school in Hawaii that enrolled over 500 students in grades K-10. The teachers were all certified public school teachers, two of which had multiple years teaching experience at the K-8 level. The parents had higher education degrees and represented diverse cultural backgrounds. The principal had been employed since the school’s inception in 2007 and the office manager since 2009. The purpose of the study examined two research questions: (1) What are the roles that parents/guardians (i.e. learning coaches) engage in to support the cyber charter student? (2) What are the roles that teachers engage in to support the cyber charter student?

Data was collected through semi-structured interviews, field observations, email
correspondence, content analysis of online training programs, and in-home observations. The focus of the data analysis was to better understand the roles of teachers and parents in cyber charter schools. Data was analyzed employing the constant comparison analysis by which text was coded, compared and recorded, and refined into categories of significant practices and which emerging patterns were synthesized into consistent themes. Triangulation was employed to validate the findings.

Evidence gathered from the data suggested four different roles that teacher and parents engage in to support students in this cyber charter school. Learning coaches were managers and guides. Teachers were experts and facilitators. “Challenges, however, arose when these roles overlapped or when it was unclear who was ultimately responsible for the student’s academic performance” (Hasler Waters & Leong, 2014).

Learning Coaches as Managers and Guides

One of the primary responsibilities of the learning coach was that they established an organized working system that provided daily structure, schedule, and a supportive learning environment for their student. Strong organizational skills were found to be critical for the student to be able to work effectively with the parent. An additional responsibility of the learning coach was the ability to set academic expectations and hold students accountable to these expectations. This involved keeping students motivated, on track, and monitoring progress through the Learning Management System (LMS). Some parents reported they believed it was their responsibility to help their students in becoming self-directed and self-managed learners. Hasler Waters & Leong (2014) study supported Fan and Chen’s (2001) earlier work that parental academic expectations reveals a strong relationship to a student’s academic grades.

Challenges Faced by Learning Coaches

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Parents indicated several challenges with the role of the learning coach. New families were not aware of the full-time commitment in serving as a learning coach and indicated a need for more training. Some revealed that the administrative tasks and workload were overwhelming and that they desired more support from the teachers. Parents that had home schooled their student prior desired more flexibility and found the teachers and administration to be invasive. Many reported that being a parent and learning coach presented complex challenges because it was difficult to separate the roles.

*Teachers as Experts and Facilitators*

Teachers employed in this cyber charter school were viewed as the designated experts in content by parents and students. This was especially true for older students where subject matter may be more complex and greater communication with the teacher may be needed. Families also considered the teacher to have an in-depth understanding of child development with a guide to what specific skills and knowledge students should have by a particular age. The teachers held themselves ultimately responsible for their students’ academic achievement and believed facilitation of curriculum was paramount in addition to providing learning strategies for the learning coaches. Teachers also viewed themselves as enthusiasts for utilizing technology to build relationships with students and facilitate learning.

*Challenges Faced by Teachers*

Numerous challenges were revealed by cyber-charter school teachers in Hasler Waters & Leong (2014) study. While technology facilitated communication with students, some teachers still felt it was not enough and struggled to find meaningful ways to connect with their students. Teachers also found it challenging not only in sharing their teaching space with learning coaches, but also in engaging parents as teaching team members. The double number of students to their
traditional counterparts in addition to the time needed to integrate technology also proved to create intensive workload challenges.

Hasler Waters and Leong’s (2014) study began a much-needed exploration into the complex and overlapping roles that teachers and parents share as co-educators in supporting students in cyber charter schools. Learning coaches (parents) assumed the responsibility for managing their own children’s education and academic progress and teachers focused primarily on being experts, facilitators, and ensuring student mastery of content. Teachers had to learn to share their teaching space with parents and that they were no longer in full control of student learning. Challenges arose when these roles crossed paths and more research is needed to support these co-educators as a working team that supports cyber school students.

*Implications from Hasler Waters and Leong 2014 Study*

The implications suggest that both teachers and learning coaches may need training to support their specific roles. Teachers should be provided training for their responsibilities as content and child development experts as well as online engagement methods, flipped classroom techniques, effective online pedagogical strategies and providing parents with approaches for setting high learning expectations. Parents should be supported with student behavioral management and motivation techniques as well as basics in child development. Finally, administration should seek to provide the environment and technologies necessary to effectively support this unique online educational triad system of teachers, parents, and students.

*Student Achievement*

Cyber charter schools have attracted substantial interest for parents and students as public school alternatives; however, interest has outpaced research into their academic effectiveness.
Early literature found that online learners experienced similar success to that of traditional students and that online education was as equally effective as its traditional counterparts (Smith, Clark, & Blomeyer, 2005; Cavanaugh, Gillian, Kromrey, Hess & Blomeyer, 2004). Cavenaugh’s (2004) meta-analysis included a comprehensive review of the research of student achievement in 14 online schools in seven states (Cavanaugh et al., 2004). Achievement data were analyzed for over 7,500 students in grades 3-12 in the major academic content areas. There was no significant influence on outcomes of the forty-distance education and instructional factors that were examined (Cavanaugh, 2009; Cavanaugh et al., 2004). Since that review, there have been limited studies that have examined achievement in cyber charter schools (Cavanaugh, 2009) and little to guide policy relevant to K-12 instructional practice in full-time online programs (Barbour, 2014).

Glass and Welner, (2011) produced a policy report in part to address alarm over the severe lack of empirical evidence examining the academic effectiveness of student learning and achievement in full-time online schools. They noted that the limited research that does exist has been exclusive to supplemental online programs and not full time cyber schools, 75% of which are run by for-profit entities known as Educational Management Organizations (EMOs). As no single government body audits or collects data from these EMOs, there is little accountability with such issues as quality, effectiveness, funding, expenditures, teacher certifications, accreditation, or even authenticity of student’s work (Glass, 2011). Lueken, Ritter, and Beck’s (2015) work reiterated Glass and Welner’s (2011) lack of research and accountability alarm in stating:

The U.S. Department of Education’s Office of Planning, Evaluation and Policy Development conducted a meta-analysis to compare online learning environments with face-
to-face instruction (2010) and noted a dearth of research exists on K-12 cyber learning. It found only a small number of studies that employed sufficiently rigorous research methods to draw meaningful conclusions about the effectiveness of online learning compared to that of face-to-face instruction at the K-12 level. None of the studies in the meta-analysis employed experimental or rigorous quasi-experimental evaluation designs, and most of the studies on K-12 online learning focused on blended (virtual), not fully online, learning.

Although there are small gains in what is known about supplemental K-12 online learning, there continues to be a lack of understanding full-time K-12 schooling options (Barbour & Mulcahy, 2008; Barbour, 2015). The starting point for most studies in K–12 online schools is analyzing and comparing student achievement data to that of their traditional face-to-face counterparts (Cavanaugh et al., 2004). While there is little peer-reviewed research examining the effectiveness of full time K-12 online learning, there is a “growing body of literature from state governments, policy think tanks, and investigative journalists (Barbour, 2015).” To date, the finding on student achievement in full-time cyber schools reveals mixed to negative results (Lueken et al., 2015, Molnar et al., 2013, 2014, 2015).

The minimal research that does exist reports mixed to negative results (Lueken et al., 2015; Molnar, et al., 2015). Molnar et al.(2015) states that the literature has found that the students enrolled in full-time cyber charter schools do not perform as well as those enrolled in brick and mortar settings. To compare academic performance of full-time cyber charter schools, Molnar et al. (2015) identified three possible ratings: academically acceptable, academically unacceptable, and not rated. Of the 400 schools that were assessed, only 285 (71.2%) were rated meaning no state performance assessments were available for nearly 30% of the full-time cyber
charter schools. Of the 285 that were rated, only 117 (41.1%) were rated acceptable with nearly
60% being rated academically unacceptable.

Proponents of cyber charter schools often cite the U.S. Department of Education meta-
analysis consisting of 45 virtual school programs report because it found that students enrolled in
blended face-to-face instruction with online learning fared as well as their traditional school
counterparts (Means, Toyama, Murphy, Bakia, & Jones, 2009). However, the authors of the
study, which only included five cases from the K-12 level, warned that the findings were focused
solely on supplemental virtual schooling. In addition, the results mainly analyzed environments
involving higher education rather than elementary or secondary schooling and did not fully
represent outcomes related to full time online schooling for younger students (Means et al.,
2009). A more recent study involving eight full-time online charter schools conducted by
Stanford’s University’s Center for Research on Educational Outcomes (CREDO) revealed that
all schools examined performed significantly worse than their brick and mortar counterparts
(CREDO, 2011).

The types of students who attend full-time cyber charter schools have not been fully
described in the literature to date making reliable comparisons and assessments impossible
(Cavenaugh, 2009). “There is some evidence that cyber charter schools serve a disproportionate
number of children who had serious academic or emotional problems in traditional public
schools, and thus may have academic disadvantages that are not easily captured by statistical
Haughey and Muirhead’s (1999) description for online learners as one of the best:

Students who do well in online programs are motivated to learn. They are self-directed
and self-disciplined. They are not disenchanted with school…. Successful online students
are at their grade level. They read and write well…. Online students need to be independent learners. They should be curious and able to ask for help… They have or should have an interest in technology and good computer skills.

Barbour (2015, 2009) argues that this description is not representative of the average K-12 student, or many of the students attending online schools, most especially, cyber charter schools.

**Theoretical Framework**

*Epstein’s Overlapping Spheres of Influence; School, Family, and Community Partnership Model*

“Parents, schools, and communities have a shared interest and responsibility in educating children” (Herrell, 2011; Epstein et al., 2009). Joyce Epstein’s school-family-community partnership model emphasized the significance of working collaboratively for the collective impact on a child’s learning and development (Epstein, 2009). Epstein identified this partnership model as the “overlapping spheres of influence” model in which all spheres shared the responsibility of contributing to a child’s success (Epstein, 1995). The theory of overlapping spheres of influence creates a framework where schools, family, and community partnerships locate the student at the center (Epstein, 2002).
In this partnership framework, teachers and administrators aim to create more family-like schools recognizing each child’s individuality and creating an atmosphere where the student is valued, included, and special (Epstein et al, 2009). Parents aim to create more school-like families reinforcing the value of school, homework, and engaging in activities that promote student skills and feelings of academic success (Epstein et al, 2009). Communities work together with parents and schools to create opportunities that recognize academic progress, creativity, contributions, and achievement (Epstein, 2001).

First, partnerships between parents and teachers tend to decline across the grades, unless there is an intentional effort for schools to develop and implement appropriate practices of partnership at each grade level. Second, affluent communities currently have greater aspects of positive family involvement. Third, schools in economically disadvantaged communities tend to make more contacts with families about the problems and difficulties regarding their children unless intentional efforts are established to communicate positive behaviors. Finally, single parents, parents who are employed outside the home, parents who live far from the school, and fathers, are statistically less involved unless the school organizes volunteer opportunities for these identified parental groups.

Researchers also concluded that virtually all families care about their children, want them to succeed, are eager to obtain better information from their school communities, and desire to be strong partners in their children’s education. In addition, virtually all teachers and administrators would like to involve families, but many do not know how to go about building positive and productive programs and are consequently fearful about trying. Nearly all students—elementary, middle, and high school—desire their families to be more engaged and knowledgeable partners about their schooling and are willing to take active roles in assisting communications between home and school. However, students need much better information and guidance about how their schools view partnerships and about how they can conduct important exchanges with their families about school activities, homework, and school decisions.

Epstein theorized that the home-school relationship was a significant construct linking to student achievement (Hasler Waters, dis). Her theoretical model included six types of school-home relationships that supported student academic success in traditional school environment.

*Six Types of School-Family-Community Involvement*
**Parenting** is the first type of involvement and includes assisting families with parenting skills, family support, understanding child and adolescent development, and setting home conditions and expectations to support learning at each age and grade level (Epstein et al., 2009). It is important for schools to gather information about their students’ families’ backgrounds, cultures, needs and goals to help build strong and trustworthy relationships between parents and teachers (Epstein et al., 2009).

**Communicating** with families about school programs and student progress is Epstein’s (2001) second type of involvement. Creating effective two-way communication channels between school and home yields numerous positive results including greater student interaction and involvement, increased knowledge of policies, programs, and procedures, and parental monitoring and engagement for their child’s educational success.

**Volunteering** is the third type of involvement and proposes the recruitment, training, and organizing of parents to not only be present, but to support to goals of the school through serving as tutors, coaches, chaperones, boosters, aids and in many other activities at the school (Epstein, 2001). Enable educators to work with volunteers who support students and the school. As time constrains are an issue to many families, schools need to develop flexible programs and schedules that includes appropriate training so that parent volunteers are well equipped for this supporting role (Epstein, 2001). As parents involvement increases in the school, higher adult-child ratios which supports more time for teachers to provide one-on-one needs in addition to the educators and teachers becoming more comfortable with one another (Epstein et al., 2009).

**Learning at Home** is the fourth type of involvement and advocates providing support and strategies for families in creating an learning atmosphere at home, including homework expectations, goal setting, and other academic-related activities (Epstein, 2001). When parents
support educational experiences at home, students view parents as an school partner and activist resulting in a positive attitude towards the school and an increased confidence in their academic endeavors and even a rise in test scores (Epstein et al., 2009).

Decision-Making, the fifth type of involvement, includes families as participants in school decisions, governance, and advocacy activities through school councils, improvement teams, committees, and parent organizations (Epstein, 2009). Parents and educators share a mutual interest in the quality of educating students. Providing an opportunity for leadership roles for parents to engage with the school communities creates a platform for sharing parental insights regarding policy and programs within the school community (Epstein et al., 2009).

Collaborating with the Community coordinates resources and services for families, students, and the school with community groups, including businesses, agencies, cultural and civic organizations, and colleges or universities. This involvement facilitates all to contribute service to the community (Epstein, 2002).

*Hoover Dempsey and Sandler Model of Parental Involvement*

Parental involvement has been linked to psychological processes and attributes that support student achievement including teacher ratings of student competence, student grades, and achievement test scores (Hoover-Dempsey et al., 2005). Hoover Dempsey and Sandler’s 1995 work was interested not in the assumed educational outcomes of parental involvement, but rather why do parents become involved in various aspects of their children’s education and when they do become involved, how does their involvement influence school outcomes? The theoretical Model of Parental Involvement developed by Hoover-Dempsey and Sandler (1995) aimed to examine predictors of student achievement through parental involvement by providing a framework that addressed three questions: (1) Why do parents become involved in their child’s
education? (2) How do parents involve themselves? (3) Why parental involvement has a positive influence on student educational outcomes?

The Hoover-Dempsey and Sandler model focused on the psychological variables associated with parental involvement rather than the types of involvement activities parents engaged. Additionally, it identifies parent involvement as a dynamic process that happens over time that proposes predictors of parental involvement and child outcomes. As such, Hoover-Dempsey and Sandler (1995; 2005) proposed a five-tiered construct.

**Level 1** proposes three reasons why parents become involved in their child’s education: (a) personal motives; including self-efficacy and parental role construction (Do parents believe they should be involved?) (b) invitations; from school, teacher, and/or child (Do parents believe that the school wants their involvement?) (c) life context; time, skills, and knowledge to help their child (Do parents have the knowledge/skills and time necessary to help their child?).

**Level 2** submits four parental methods for involvement: (a) encouragement; methods of academic encouragement (What are the methods of academic encouragement?) (b) modeling; modeling academic skills (Are parents modeling academic skills? eg: reading, writing, mathematics?) (c) reinforcement; reinforcement techniques to encourage academic behaviors (By what means do parents reinforce learning behaviors?) (d) instruction (What instructional methods are used by parents to assist children?).

**Level 3** focuses with the child’s perception of parental involvement: (a) encouragement (What are the child’s perceptions of methods used for academic encouragement?) (b) modeling (What are the child’s perceptions of their parent’s modeling academic skills?) (c) reinforcement (What are the child’s perceptions of parental reinforcement behaviors related to academics?) (d) instruction (What are the child’s perception of instructional methods used by parents?).
**Level 4** emphasizes attributes that are associated with student learning: academic self-efficacy, intrinsic motivation to learn, self-regulatory strategy, and social self-efficacy.

**Level 5** represents the child outcome influenced by parental involvement: measures of achievement, measures of knowledge, measures of school-based efficacy.

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**Figure 4.** The Hoover-Dempsey and Sandler Model, adapted from Hoover-Dempsey & Sandler, 1995; 2005.
One of the most important findings in Hoover-Dempsey and Sadler’s (2005) work is that schools influence parents’ decisions about involvement. The HDS has been consistently noted for its capacity to predict parent involvement and its effects on student achievement (Green & Walker, 2007). Broadly, when the school community invests in motivating parental involvement and partnership, children’s educational success increases.

Theoretical Applications

Research examining parental engagement in online learning has primarily looked to two frameworks developed in traditional school settings: Epsteins’s Overlapping Spheres Framework and Hoover-Dempsey and Sandler’s Model for Family Involvement. Due to the many differences within online schools and the unique roles and relationships of parents and teachers, these models are not a seamless fit (Herrell, 2011). Presently, only two studies have quantitatively examined the relationship between levels of parental engagement and student performance (Hasler Waters, 2014); Black’s 2009 study investigated the role of familial participation in student achievement in K-12 virtual schools and Borup’s 2013 study examined parents’ significant role in K-12 online learning and their impact on course outcomes.

Black (2009) explored the impact of parental and/or familial involvement and its impact on student achievement with secondary students in a virtual school in the Southeastern United States. This empirical study, which utilized the Hoover-Dempsey Sadler Model, represents the first comprehensive investigation of parental effect on virtual school achievement. Data revealed conflicting results on parental involvement and student outcomes. In a subset of parents (parents whose child did not respond to the survey, n=164), parental involvement was shown to be predictive for student achievement, however in the larger parental group (all parents, n=940), there was no statistically significant relationship between parental involvement and student
achievement. Parental instruction (parents engaging in more instructional activities) revealed a negative relationship with student achievement. Findings disclosed a positive relationship between parental praise and student performance, but uncovered a significant negative relationship between parental instructional engagement and student achievement. This assertion supported Hoover-Dempsey and Sandler (2005) who suggested that parents of older children express concerns about knowledge and skills with course work that may translate to substandard instructional practices. Limitations in Black’s study include that the virtual school utilized in this study is not a diploma granting institution and does not allow full-time student enrollment; students are limited to two online courses per semester. Additionally, the definition of parent was loosely defined to include family or guardian of record.

Borup et al. (2013) attempted to measure the quantity of the different parental interaction types and subjects that occur in an online learning environment. Students reported interacting over 300% more frequently with their parents on course related items than with their teachers. Approximately 40% of parents reported no interaction with the teacher. When parent-teacher interaction occurred, 97% of students stated these interactions were motivational. This finding supports the research that parental involvement in virtual education is crucial. Despite this observation, Borup’s research revealed that while parents play a critical role in their child’s education, their involvement does not necessarily positively correlate with course outcomes, and in fact correlated negatively. This intersects with Hasler Waters (2013) research that teachers are viewed as experts who can provide content and teaching strategies and resources to parents. The limitations of Borup’s (2013) study was that the survey was administered to a new online charter school with a small student population resulting in a low number of respondents (n=82).
Summary

Initial findings report that parental engagement in K-12 online learning is critical to improving course outcomes and student achievement (Borup, 2016; Hasler Waters, 2014; Litke, 1998). Black’s (2009) and Borup’s (2013) findings, however, propose that parental involvement alone will not produce high student achievement. Higher student achievement, improved student behavior and attendance, and more positive school climates have been documented when teachers and parents work collaboratively in traditional school settings (Henderson & Mapp, 2015). In cyber charter schools, teachers are no longer the sole provider of instruction and parents assume the responsibility as co-educators in supporting student learning. As the teacher generally determines the quality of the parent-teacher partnership, and the area in which they feel least prepared to cultivate, research and trainings are needed to support these new and evolving roles in helping students succeed in these alternative school settings.

While cyber charter schools account for a relatively small portion of the overall school choice options in the U.S., they constitute one of the fastest -growing alternatives, overlapping with both homeschooling and charter schools (Molnar, 2015). Despite this documented growth, there continues to be a lack of reliable and valid evidence to guide full-time online practice and policy. Consequently, little progress has been made toward the requirements for the preparation, certification, and licensure of online teachers (Barbour, 2014).

The impact of the quality of the parent-teacher partnership in cyber charter schools may be as important, if not more important than in traditional school settings (Hasler Waters & Leong, 2014, Black, 2009). No study to date has examined if the quality of the parent-teacher partnership in full-time cyber charter schools impacts student achievement. The Epstein School, Family, and Community Partnership model; and Hoover-Dempsey and Sandler Model
for Parental Involvement will undergird the theoretical premise for this study that will investigate the impact that the parent-teacher relationship plays on student achievement in cyber charter schools.
Chapter III

METHODOLOGY

Introduction

While teachers in cyber charter schools still play an integral role in supporting students, many of these schools rely heavily on the parents to serve as co-educators (Hasler Waters, 2014). Researchers agree that the role of the teacher in a virtual environment is significantly different than in the traditional school settings (Patrick & Dawley, 2009). In full-time cyber charter schools, teachers are no longer the sole provider of instruction and parents assume the responsibility as co-educators in supporting student learning. The quality of the parent-teacher partnership in traditional school settings has been repeatedly identified as an indicator for academic achievement and student success (Epstein et al, 2009), however no study to date has examined if the quality of the parent-teacher partnership in cyber charter schools influences student achievement and if that relationship varies over grade levels and by free and reduced lunch status.

The Purpose of the Study

The purpose of this quantitative study was to determine if the quality of the parent-teacher relationship influences student achievement in cyber charter schools. A partnership with a full-time state-funded cyber charter school was established to facilitate the collection of data; respondents consisted of parents whose children were enrolled within this institution during the 2017-2018 academic year.

Research Questions

While researchers have a strong understanding that higher student achievement, improved student behavior and attendance, and more positive school climates have been
documented when teachers and parents work collaboratively in traditional school settings (Henderson & Mapp, 2015), a better understanding of how the quality of this parent-teacher relationship influences student achievement in a full-time cyber charter school will contribute to the research and improvement of K-12 virtual education. Using the framework from Majerus’ (2011) survey, amended to include self-reported student achievement questions, this exploratory study investigated the factors that influence the parent perception of the parent-teacher relationship in a full time K-12 cyber charter school. The following research questions were used to understand the parents’ perceptions of the parent-teacher relationship, and the influence of these factors on student achievement. Specifically, the following research questions were explored:

1. Does the quality of the parent-teacher relationship, opportunity for parent involvement, parent efficacy, and time for parent involvement impact student achievement in math in cyber charter schools?  
2. Does the quality of the parent-teacher relationship, opportunity for parent involvement, parent efficacy, and time for parent involvement vary by grade level in cyber charter schools?  
3. Does the quality of the parent-teacher relationship, opportunity for parent involvement, parent efficacy, and time for parent involvement vary by free and reduced lunch status in cyber charter schools?

**Expected Results**

Initial findings have reported that parental involvement in K-12 online learning was critical to improving course outcomes and student achievement, but that the type of parental
involvement needs further examination (Borup, 2016; Hasler Waters, 2014; Black, 2009; Boulton, 2008; Litke, 1998). As parents have a great responsibility in supporting their child’s learning in a cyber charter school model, the quality of the parent-teacher relationship may be of even greater significance.

Utilizing Majerus’ framework for the undergirding of this study, four factors were examined to measure parental perception of the parent-teacher relationship with their child’s teacher. Levels of trust, caring, and fairness they believe to be exhibited by their child’s teacher; being invited to be involved by their child’s teacher; belief in about how their involvement in their child’s school impacts their child’s educational experience; and the investment in time to help their child succeed in school were evaluated. As the evidence suggests that parental involvement in traditional school settings positively influences student achievement, it was anticipated that there will be a positive correlation between the parent-teacher relationship and student achievement in cyber charter schools. Conversely, as Epstein’s (1996) work suggests that the parent-teacher relationship tends to decline across the grade levels in traditional school settings, it is anticipated that this will also be true for the parent-teacher relationship in cyber-charter schools. Finally, as evidence suggests that parental involvement is lower amongst low-income families, it was predicted that this would also be true in cyber charter schools (Hill & Taylor, 2004).

Hypothesis

H₀: There is a relationship between the quality of the parent-teacher relationship, opportunity for parent involvement, parent efficacy, and time for parent involvement and parent self-reported student achievement in math in cyber charter schools.

H₁: The quality of the parent-teacher relationship, opportunity for parent involvement, parent
efficacy, and time for parent involvement varies by grade level in cyber charter schools.

$H_A$: The quality of the parent-teacher relationship, opportunity for parent involvement, parent efficacy, and time for parent involvement varies by free and reduced lunch status in cyber charter schools.

**Null Hypothesis**

$H_0$: There is no relationship between the quality of the parent-teacher relationship, opportunity for parent involvement, parent efficacy, and time for parent involvement and parent self-reported student achievement in math cyber charter schools.

$H_0$: The quality of the parent-teacher relationship, opportunity for parent involvement, parent efficacy, and time for parent involvement, does not vary by grade level in cyber charter schools.

$H_0$: The quality of the parent-teacher relationship, opportunity for parent involvement, parent efficacy, and time for parent involvement does not vary by free and reduced lunch status in cyber charter schools.

**Research Methods and Design**

In order to understand whether the quality of the parent-teacher relationship impacts student achievement in a cyber charter school, a survey instrument was utilized to collect information about parents’ perceptions of the parent-teacher relationship— including perceptions
of the quality of the parent-teacher relationship, opportunity for parent involvement, parent
efficacy, and time for parental involvement.

Jacob Cohen’s (1992) work on the power of statistical tests in the social and behavioral
sciences stresses the importance for research methodologists to utilize computerized programs to
determine power analysis and sample size. The power of a statistical test is the probability that
the test will correctly reject a false null hypothesis. The statistical software G*Power 3.1.9.2 was
utilized to determine the sample size necessary for achieving a statistical power of .80, a p-value
of .05, for a two-tailed standard multiple regression test (Cohen, 1988). The priori analysis
suggests a minimum number of 55 participants will be required to achieve the required statistical
power for a test utilizing four predictor variables; therefore, the sample size is set at 55
participants.

Participants

The participants in this study consisted of the parents of students enrolled in a fully
accredited, publically funded, northeastern cyber charter school that serves over 6,000 students
in grades K-12. The school’s curriculum is provided by an independent entity that aligns with
state and national standards. There are currently 20-advanced placement course options and
100% of courses are taught by highly qualified teachers. The school is a Title I school classified
by the Elementary and Secondary Education Act that provides financial assistance to local
educational agencies and schools with high numbers or high percentages of children from low-
income families to help ensure that all children meet challenging state academic standards.
52.63% of students in this cyber charter school are classified as economically disadvantaged.
16.85% of the student population receives special education services and 0.32% are classified as English Language Learners and are enrolled in the *English as a Second Language* Program.

Student enrollment percentages by gender are 53.74% female and 46.26% male. Student ethnicity enrollment data are as follows: White (non-Hispanic) – 69.04%; black or African-American (non-Hispanic) – 14.9%; Hispanic (any race) – 9.79%; Multi-Racial (non-Hispanic) – 5.23%; Asian – 1.21%; American Indiana/Alaskan Native – 0.4%; Native Hawaiian or Pacific Islander – 0.15%. Dropout rate is 1.26%.

**Instrumentation**

A survey instrument designed by Timothy Majerus (2011) was adapted for this research study. The survey tool was established by researchers to be a valid, reliable, and effective measure of the parental perception of the parent-teacher relationship. Majerus (2011) developed this survey instrument to gather parent perceptions about their child’s classroom teacher and to garner insights about the broader relationships between parent-teacher relationships and student academic success.

Marjerus (2011) initial survey included 21 demographic questions about parents and their child, and 50 questions about parents’ relationship with their child’s teacher. Relationship questions were scored on a five point Likert-type scale. The instrument was administered to 945 parents at eight elementary schools in a mid-sized Mid-Western school district. The following four factors emerged from the factor analysis:

Factor 1: Parent-Teacher Relationships. This factor contains 11 items and is the largest of the four factors. The issues of trust, caring, welcoming, friendly, and fair highlight this factor. The findings for this factor demonstrate the significance of a positive relationship between parents and teachers.
Factor 2: Opportunity for Parent Involvement. This factor contains five items from two theoretical constructs - Opportunities for parental involvement and parent/teacher interaction. This factor supports the importance of teachers involving parents in educational decisions about their child.

Factor 3: Parent Efficacy. This factor contains four items from three theoretical constructs – Efficacy, Parents’ Role Construction, and Parent Involvement. This factor supports maintaining regular parent-teacher contact and the importance of fostering high sense of parental efficacy.

Factor 4: Time for Parental Involvement. This factor contains three items from the construct of parental involvement. The findings from this factor support the concept that parents that spend time on their child’s education help increase their child’s academic achievement.

Figure 5  Timothy Majerus’ Theoretical Model, (Majerus, 2011)
A theoretical model based on the findings of Majerus’ (2011) study found the concept that parents’ perceptions of their child’s classroom teacher are created through the combination of the influence of the four factors detailed in his study. This study utilized Majerus’ model and adapted the survey to address the needs of parents within a cyber charter school.

The 47-question instrument for the research study consists of two sections: demographic survey and parent-teacher relationship survey. The first section of the survey consisted of twenty-one demographic-related questions related to the child, including gender, race, grade level, years in program, parent post-graduation goals, most significant factor in child’s education, parent education level, number of communications with the school, reasons for communication with the school, qualification for free and reduced lunch, English as a first language for child, English as a first language for parent, parent request for teacher, number of face-to-face meetings with teacher, PSSA or Keystone score for math, and course grade for math. The second section of the survey consisted of twenty-six questions that measured parents’ perception of the parent-teacher relationship. The second section of the survey used a five-point response scale (1=strongly disagree to 5=strongly agree).

**Operational Definition of Variables**

Table 3-1

*Independent Variables*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perception of the Quality of the Parent-Teacher Relationship</td>
<td>Total score (1 to 5) of perceptions of the parent-teacher relationship. The score of 1 indicates low levels of quality, and the score of 5 indicates high levels of quality.</td>
</tr>
</tbody>
</table>
Perception of the Opportunity for Parental Involvement
Total score (1 to 5) of perceptions of parental involvement opportunity. The score of 1 indicates low levels of opportunity, and the score of 5 indicates high levels of opportunity.

Perception of Parent Efficacy
Total score (1 to 5) of perceptions of parent efficacy. The score of 1 indicates low levels of parent efficacy, and the score of 6 indicates high levels of parent efficacy.

Perception for Time for Parent Involvement
Total score (1 to 5) of perceptions of time for parent involvement. The score of 1 indicates low levels of time for involvement, and the score of 6 indicates high levels of time for involvement.

Table 3-2
Dependent Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math Course Grade</td>
<td>Total score (1 to 5) of self-reported course grade.</td>
</tr>
<tr>
<td></td>
<td>1. 90-100%</td>
</tr>
<tr>
<td></td>
<td>2. 80-89%</td>
</tr>
<tr>
<td></td>
<td>3. 70-79%</td>
</tr>
<tr>
<td></td>
<td>4. 60-69%</td>
</tr>
<tr>
<td></td>
<td>5. 59% and below</td>
</tr>
</tbody>
</table>
Data Collection, Processing, and Analysis

After receiving IRB approval (see Appendix B), the CEO of a large cyber charter school in Pennsylvania was contacted. Permission to survey parents and utilize the data for the purposes of this study was obtained. The cyber charter school utilized for this study had established infrastructures that allowed access to parent email. Parents were contacted via email explaining the survey and invited participation. The online survey was distributed to all K-12 parents and they were informed that their current teacher had no knowledge of their participation in the survey. Parent participants were provided a URL link to the Privacy Policy as well as a direct URL link to the online survey. Data was collected utilizing Qualtrics; a secure, web-based survey interface. In effort to collect the most data, an invitation to enter a drawing to win a $100.00 VISA gift card was included. If participants chose to enter the $100 gift card drawing, they were asked to enter their email addresses in a separate form, so that the winner could be contacted.

Data Analysis

Data was organized and sorted utilizing Microsoft Excel and SPSS 24 to efficiently code and transform data for analysis. Data was first screened for missing data and outliers by calculating Mahalanabis distance variable to determine if outliers existed in the data set. Binary Logistic Regression and MANOVA were conducted to determine the accuracy of the independent variables (quality of the parent-teacher relationship, opportunity for parental involvement, parent efficacy, and parental time invested) of predicting the dependent variable (course grades). Regression results were analyzed to determine whether the parent-teacher partnership significantly impacts student achievement in cyber charter schools.
Ethical Assurances

This research study falls under the examination of Duquesne University Institutional Review Board (IRB). Duquesne University is responsible for reviewing and monitoring research with human subjects conducted at or sponsored by Duquesne University. The participants who chose to participate in the survey were prompted with an introductory page containing the Duquesne University IRB-approved consent form informing participants how the data will be utilized and reported. Once the parent consented to participate in the study, a total of 47 questions will then accessible. Each completed survey is stored within the password-protected database.

Parents were made aware that their teacher, administration, and school would have no knowledge of their participation in the survey. It was also explained that their participation in the survey was confidential and that names, email addresses, and IP address would not be collected. If, however, participants chose to enter the gift entry, they were asked to enter their email address on a separate form so that the winner could be contacted. The identifiers remain confidential, reside in a password-protected online database, separated and unlinked from the submitted surveys.

Potential Limitations

This study had several limitations that should be considered. These limitations may influence future studies that examine the quality of the parent-teacher relationship and its impact on student achievement. An important limitation to note is a single state cyber charter school will be assessed potentially limiting the generalizability to other states.

Another limitation to be considered is that Timothy Majerus’ original survey instrument was designed for parents of elementary students in a traditional school setting. As this study
plans to assess all grade levels in a cyber charter school, the possibility of a significant threat to validity exists. Future studies may consider developing a valid parent-teacher relationship survey instrument to be utilized in k-12 cyber charter schools.

An additional limitation to be considered is that the parent survey adapted for this study may skew responses towards a higher degree of involvement due to the socially desirable responses by participants. Additionally, the self-reported course grade data may not be accurate, especially in the higher grades. Future research may consider a qualitative design to reduce parental bias.

The self-reported math course grade will be analyzed for this study. As this only identifies one content area, this may pose a limitation to other areas of instruction such as English/language arts, science, music, and other subjects. Future research may consider including one or more additional areas.

The last identified limitation is that the survey will only be provided in English language format, therefore non or limited English speaking parent populations may be underrepresented. Future research may consider including additional survey translations to accommodate the diverse population needs.

Summary

The purpose of this study was to determine if the quality of the parent-teacher relationship influences student achievement in cyber charter schools. This chapter provided an explanation of the processes and instrument that was utilized to complete this study. Results of the detailed statistical analyses conducted for this study is described in Chapter Four.
Chapter IV

RESULTS

Introduction

This chapter will report results obtained through the investigation of the parent perception of the quality of the parent-teacher partnership and its impact on student achievement in cyber-charter schools. The chapter will: (a) describe the report findings if the quality of the parent-teacher relationship influences student achievement in cyber-charter schools; (b) describe the report findings if the parent-teacher relationship varies by grade level in cyber-charter schools; and (c) describe the report findings if the parent-teacher relationship differs by free and reduced lunch status in cyber charter schools.

Summary of Sample and Survey Factors

Detailed information regarding the survey, factors, and methods utilized for data collection can be found in Chapter III. As a brief summary, this study employed an online survey adapted from Timothy Majerus’ (2011) instrument, which was constructed on research by Hoover-Dempsey and Sandler (2005) sampling parents from a publically funded K-12 cyber charter school in the Northeastern United States during the 2017-2018 academic year. Utilizing the Qualtrics online survey tool, 6,749 parents were delivered the survey link by the school administration via email with a request to participate. The survey completion rate was 8.31% which included 561 parent participants. Quantitative statistical procedures were utilized to analyze the data. Self-reported math achievement data, in the form of a semester grade for the course in which the child was enrolled during the fall of the 2017 academic year, was collected and evaluated in relation to the survey responses. The first portion of the survey (Appendix C,
Sections A and B) was designed to collect demographic characteristics of the respondents. See Table 4-1.

Table 4-1

*Student Demographics Reported by Parent*

<table>
<thead>
<tr>
<th>Gender</th>
<th>Male</th>
<th>284</th>
<th>50.62%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>277</td>
<td></td>
<td>49.38%</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African-American</td>
<td>55</td>
<td></td>
<td>9.84%</td>
</tr>
<tr>
<td>Asian</td>
<td>4</td>
<td></td>
<td>0.72%</td>
</tr>
<tr>
<td>Caucasian</td>
<td>437</td>
<td></td>
<td>78.18%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>28</td>
<td></td>
<td>5.01%</td>
</tr>
<tr>
<td>Multi-Racial</td>
<td>35</td>
<td></td>
<td>6.26%</td>
</tr>
<tr>
<td>Pacific Islander</td>
<td>0</td>
<td></td>
<td>0.00%</td>
</tr>
<tr>
<td>Grade Level of Student</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kindergarten</td>
<td>19</td>
<td></td>
<td>3.39%</td>
</tr>
<tr>
<td>1st</td>
<td>29</td>
<td></td>
<td>5.17%</td>
</tr>
<tr>
<td>2nd</td>
<td>24</td>
<td></td>
<td>4.28%</td>
</tr>
<tr>
<td>3rd</td>
<td>27</td>
<td></td>
<td>4.81%</td>
</tr>
<tr>
<td>4th</td>
<td>39</td>
<td></td>
<td>6.95%</td>
</tr>
<tr>
<td>5th</td>
<td>48</td>
<td></td>
<td>8.56%</td>
</tr>
<tr>
<td>6th</td>
<td>42</td>
<td></td>
<td>7.49%</td>
</tr>
<tr>
<td>7th</td>
<td>38</td>
<td></td>
<td>6.77%</td>
</tr>
<tr>
<td>8th</td>
<td>57</td>
<td></td>
<td>10.16%</td>
</tr>
<tr>
<td>9th</td>
<td>65</td>
<td></td>
<td>11.59%</td>
</tr>
<tr>
<td>10th</td>
<td>62</td>
<td></td>
<td>11.05%</td>
</tr>
<tr>
<td>11th</td>
<td>59</td>
<td></td>
<td>10.52%</td>
</tr>
<tr>
<td>12th</td>
<td>52</td>
<td></td>
<td>9.27%</td>
</tr>
<tr>
<td>After High School Goals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>College</td>
<td>448</td>
<td></td>
<td>54.04%</td>
</tr>
<tr>
<td>Job rather than education</td>
<td>95</td>
<td></td>
<td>11.46%</td>
</tr>
<tr>
<td>Military</td>
<td>59</td>
<td></td>
<td>7.12%</td>
</tr>
<tr>
<td>Trade School</td>
<td>227</td>
<td></td>
<td>27.38%</td>
</tr>
<tr>
<td>Most Significant Factor in My Child’s Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Classroom teacher</td>
<td>88</td>
<td></td>
<td>15.83%</td>
</tr>
<tr>
<td>Curriculum and Materials</td>
<td>289</td>
<td></td>
<td>51.89%</td>
</tr>
<tr>
<td>Extracurricular Activities</td>
<td>8</td>
<td></td>
<td>1.44%</td>
</tr>
<tr>
<td>Home Environment</td>
<td>134</td>
<td></td>
<td>24.10%</td>
</tr>
<tr>
<td>School of Attendance</td>
<td>37</td>
<td></td>
<td>6.65%</td>
</tr>
</tbody>
</table>
The second portion of the survey (Appendix C, Section C) was designed to collect parent perception of the parent-teacher relationship of the respondents which incorporated the four factors of parental perception.

The parent survey included four separate measurement variables:

- **Factor 1: Parent-Teacher Relationships** - the 11 items comprising this factor sought to measure issues of trust, caring, welcoming, friendly, and fairness. The findings for this factor demonstrate the significance of a positive relationship between parents and teachers.

- **Factor 2: Opportunity for Parent Involvement** - the five questions associated with this factor draw gauge from two theoretical constructs - Opportunities for parental involvement and parent/teacher interaction. This factor supports the significance of teachers involving parents in educational decisions about their child.

- **Factor 3: Parent Efficacy** –The three questions encompassing this factor elicit information related to three theoretical constructs; Efficacy, Parents’ Role Construction, and Parent Involvement. This factor supports maintaining regular parent-teacher contact and the importance of fostering high sense of parental efficacy.
• Factor 4: Time for Parent Involvement – The three items comprising this factor elicited information related to the construct of parental involvement. The findings from this factor support the concept that parents that spend time on their child’s education help increase their child’s academic achievement.

Table 4-2

**Factor 1 Parent-Teacher Relationship Responses**

<table>
<thead>
<tr>
<th>Survey Items</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree nor Disagree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>My child’s teacher makes me feel welcome at this school.</td>
<td>234 (44.07%)</td>
<td>152 (28.63%)</td>
<td>108 (20.34%)</td>
<td>7 (1.32%)</td>
<td>30 (5.65%)</td>
</tr>
<tr>
<td>I respect my child’s teacher</td>
<td>330 (62.03%)</td>
<td>165 (31.02%)</td>
<td>27 (5.08%)</td>
<td>2 (0.38%)</td>
<td>8 (1.50%)</td>
</tr>
<tr>
<td>My child’s teacher is fair</td>
<td>300 (56.60%)</td>
<td>186 (35.09%)</td>
<td>35 (6.60%)</td>
<td>5 (0.94%)</td>
<td>4 (0.75%)</td>
</tr>
<tr>
<td>I trust my child’s teacher</td>
<td>271 (51.23%)</td>
<td>189 (35.73%)</td>
<td>58 (10.96%)</td>
<td>6 (1.13%)</td>
<td>5 (0.95%)</td>
</tr>
<tr>
<td>I feel comfortable in talking with my child’s teacher about a concern</td>
<td>290 (54.82%)</td>
<td>204 (38.56%)</td>
<td>25 (4.73%)</td>
<td>6 (1.13%)</td>
<td>4 (0.76%)</td>
</tr>
<tr>
<td>My child’s teacher is friendly</td>
<td>281 (53.02%)</td>
<td>194 (36.60%)</td>
<td>47 (8.87%)</td>
<td>4 (0.75%)</td>
<td>4 (0.75%)</td>
</tr>
<tr>
<td>My child’s teacher cares about my child</td>
<td>246 (46.42%)</td>
<td>211 (39.81%)</td>
<td>62 (11.70%)</td>
<td>3 (0.57%)</td>
<td>8 (1.51%)</td>
</tr>
</tbody>
</table>
Table 4-3

Factor 2 Opportunity for Parent Involvement Responses

<table>
<thead>
<tr>
<th>Survey Items</th>
<th>Parent Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>My child’s teacher involves me in educational decisions</td>
<td>Strongly Agree: 211, 40.04%</td>
</tr>
<tr>
<td></td>
<td>Agree: 171, 32.45%</td>
</tr>
<tr>
<td></td>
<td>Neither Agree nor Disagree: 119,</td>
</tr>
<tr>
<td></td>
<td>22.58%</td>
</tr>
<tr>
<td></td>
<td>Disagree: 18, 3.42%</td>
</tr>
<tr>
<td></td>
<td>Strongly Disagree: 8, 1.52%</td>
</tr>
<tr>
<td>My child’s teacher provides opportunities for me to be involved in my child’s</td>
<td>Strongly Agree: 211, 39.96%</td>
</tr>
<tr>
<td>education at school</td>
<td>Agree: 158, 29.92%</td>
</tr>
<tr>
<td></td>
<td>Neither Agree nor Disagree: 137,</td>
</tr>
<tr>
<td></td>
<td>25.95%</td>
</tr>
<tr>
<td></td>
<td>Disagree: 16, 3.03%</td>
</tr>
<tr>
<td></td>
<td>Strongly Disagree: 6, 1.14%</td>
</tr>
<tr>
<td>My child’s teacher encourages me to be involved in my child’s education</td>
<td>Strongly Agree: 225, 42.61%</td>
</tr>
<tr>
<td></td>
<td>Agree: 160, 30.30%</td>
</tr>
<tr>
<td></td>
<td>Neither Agree nor Disagree: 124,</td>
</tr>
<tr>
<td></td>
<td>23.48%</td>
</tr>
<tr>
<td></td>
<td>Disagree: 11, 2.08%</td>
</tr>
<tr>
<td></td>
<td>Strongly Disagree: 8, 1.52%</td>
</tr>
<tr>
<td>Survey Items</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>My child’s teacher provides me opportunities to volunteer</td>
<td>33 (6.23%)</td>
</tr>
<tr>
<td>My child’s teacher help me understand how I can be involved in my child’s education</td>
<td>188 (35.47%)</td>
</tr>
</tbody>
</table>

Table 4-4

*Factor 3 Parent Efficacy Responses*

<table>
<thead>
<tr>
<th>Survey Items</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree Nor Disagree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I believe maintaining regular contact with my child’s teacher positively impact my child’s success in school</td>
<td>271 (51.04%)</td>
<td>192 (36.16%)</td>
<td>62 (11.68%)</td>
<td>3 (0.56%)</td>
<td>3 (0.56%)</td>
</tr>
<tr>
<td>I believe my involvement will significantly impact my child’s success in school</td>
<td>354 (66.42%)</td>
<td>142 (26.64%)</td>
<td>22 (4.13%)</td>
<td>1 (0.19%)</td>
<td>14 (2.63%)</td>
</tr>
<tr>
<td>I believe I am an engaged parent</td>
<td>333 (62.95%)</td>
<td>171 (32.22%)</td>
<td>18 (3.40%)</td>
<td>3 (0.57%)</td>
<td>4 (0.76%)</td>
</tr>
<tr>
<td>I believe it is important to maintain regular contact with my child’s teacher</td>
<td>257 (48.67%)</td>
<td>212 (40.15%)</td>
<td>50 (9.47%)</td>
<td>6 (1.14%)</td>
<td>3 (0.57%)</td>
</tr>
</tbody>
</table>
Table 4-5

Factor 4 Time for Parent Involvement Responses

<table>
<thead>
<tr>
<th>Survey Items</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree Nor Disagree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have enough time to help my child with coursework</td>
<td>251 (47.36%)</td>
<td>229 (43.21%)</td>
<td>34 (6.42%)</td>
<td>11 (2.08%)</td>
<td>5 (0.94%)</td>
</tr>
<tr>
<td>I have enough time and energy to attend special events at school</td>
<td>107 (20.27%)</td>
<td>163 (30.87%)</td>
<td>172 (32.58%)</td>
<td>73 (13.83%)</td>
<td>13 (2.46%)</td>
</tr>
<tr>
<td>I have enough time to volunteer in the school</td>
<td>48 (9.07%)</td>
<td>96 (18.15%)</td>
<td>246 (46.50%)</td>
<td>109 (20.60%)</td>
<td>30 (5.56%)</td>
</tr>
</tbody>
</table>

Data Analysis

The purpose of this section will be to provide a brief summary of the results. Each research question will be stated, followed by the results of the analysis. Research question one was addressed using an ordinal logistic regression. Research questions two and three were analyzed using one-way multivariate analysis of variance (MANOVA). A series of one-way analysis of variance (ANOVA) were used to investigate each independent variable, when the results of MANOVA tests were significant. The analyses for research questions one through three were performed using SPSS 24 and Microsoft Excel.
Research Question 1

Does the quality of the parent-teacher relationship, opportunity for parent involvement, parent efficacy, and time for parent involvement impact student achievement in math in cyber charter schools?

A binomial logistic regression was used to predict students’ mathematical performance (i.e., 90% and above = 1; and 89% and below = 0), based on four independent variables: (a) parent-teacher relationships (continuous scale: 0 to 52), (b) opportunities for parent involvement (ordinal scale: high, moderate, low), (c) parent efficacy (dichotomous: above average, or below average), and (d) time for parent involvement (ordinal: high, moderate, low).

In order to run a binomial logistic regression, there are seven assumptions that need to be considered (Cohen, Cohen, West & Aiken, 2003). The first assumption was met as the dependent variable (student’s grades in mathematics) were measured using a dichotomous dependent variable. Next, for assumption two, the analysis included one or more independent variables that were ordinal (including dichotomous variables; Cohen et al., 2003). Third and fourth, there was independence of observations, and the categories of the dichotomous dependent variable and all nominal independent variables used in the analysis were mutually exclusive and exhaustive. Fifth, linearity of the continuous variables with respect to the logit of the dependent variable was assessed via the Box-Tidwell (1962) procedure. A Bonferroni correction was applied using all four terms in the model resulting in statistical significance being accepted when p < .05. Based on this assessment, all continuous independent variables were found to be linearly related to the logit of the dependent variable. Sixth, the VIF values for the four independent variables were less than 10 (with a tolerance of less than .10); therefore, this suggests that there was not be a
problem with collinearity in the data set. Finally, casewise diagnostics showed that standardized residuals were less than plus/minus 2 suggesting the absence of outliers.

**Results.** A binomial logistic regression was performed to ascertain the effects of parent-teacher relationships, opportunities for parent involvement, parent efficacy, and time for parent involvement on the likelihood that students would earn a 90% or higher (i.e., an A) in mathematics, in cyber charter schools. Linearity of the continuous variables with respect to the logit of the dependent variable was assessed via the Box-Tidwell (1962) procedure. A Bonferroni correction was applied using all four terms in the model resulting in statistical significance being accepted when \( p < .00426 \) (Tabachnick & Fidell, 2014). Based on this assessment, all continuous independent variables were found to be linearly related to the logit of the dependent variable. The logistic regression model was statistically significant, \( \chi^2(4) = 41.534, p < .05 \). The model explained 10.0% (Nagelkerke \( R^2 \)) of the variance in math grades (i.e., earning a 90% or above) and correctly classified 62.1% of cases. Sensitivity (or the % of cases that had a 90% or above in math) was 51.7%, specificity was 72.0% (or the % of cases that had an 89% or below in math). Of the four predictor variables, only two were statistically significant: parent-teacher relationship, and opportunities for parent involvement. What this indicates is that parent-teacher relationships, and opportunities for parent involvement increase the odds of earning a 90% or above in mathematics and by a substantial amount. In particular, as perceptions about parent-teacher relationships increase, the odds of earning an A in mathematics in cyber charter schools increases by a factor of 1.092. Increased opportunities for parent involvement also contributed to the prediction of math grades (0.279).
Table 4-6

**Binomial Logistic Regression Output**

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>Wald</th>
<th>Exp (B)</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent-Teacher Relationships</td>
<td>.088</td>
<td>23.509</td>
<td>1.092</td>
<td>.000</td>
</tr>
<tr>
<td>Opportunities for Parent Involvement</td>
<td>-1.276</td>
<td>18.759</td>
<td>.279</td>
<td>.000</td>
</tr>
<tr>
<td>Parent Efficacy</td>
<td>.049</td>
<td>.047</td>
<td>1.050</td>
<td>.828</td>
</tr>
<tr>
<td>Time for Parent Involvement</td>
<td>.146</td>
<td>.346</td>
<td>1.157</td>
<td>.556</td>
</tr>
<tr>
<td>Constant</td>
<td>.642</td>
<td>1.296</td>
<td>1.901</td>
<td>.255</td>
</tr>
</tbody>
</table>

**Research questions two and three.** A series of one-way multilevel analysis of variance (MANOVA) were used to determine whether relationships between parent-teacher relationship, opportunities for parent involvement, parent efficacy, and time for parent involvement varied by grade level and eligibility for free and reduced-price lunch status in a cyber charter school. The independent variables were student’s grade level (e.g., Kindergarten through grade 12), and qualification for free and/or reduced-price lunch (coded as a 1 for no, and a 2 for yes). The dependent variables were Likert scale ratings on items related to: parent-teacher relationship, opportunities for parent involvement, parent efficacy, and time for parent involvement. If main effects for the two independent variables were significant, follow-up tests (ANOVAs) were used to identify which dependent variables were statistically different by grade level, and free and/or reduced price lunch (Huck & McLean, 1975). Table 1 presents the means and standard deviations for all four dependent variables by grade level, and free and/or reduced-price lunch.
Research Question 2

Does the quality of the parent-teacher relationship, opportunity for parent involvement, parent efficacy, and time for parent involvement vary by grade level in cyber charter schools?

A one-way multivariate analysis of variance (MANOVA) was run to determine whether parents’ views about the quality of the parent-teacher relationship, opportunities for parent involvement, parent efficacy, and amount of time for parent involvement varied by students’ grade levels, in cyber charter schools. Levene’s test showed that the assumption of homogeneity of variances was not violated for any of the four measures, with $p > .05$ for quality of parent-teacher relationship, $p > .05$ for opportunity for parent involvement, $p > .05$ for parent efficacy, and $p > .05$ for time for parent involvement. Box’s M test indicated that variance-covariance matrices were not different across cells, $F(3, 87120) = .430, p > .05$. Lastly, parent-teacher relationship, opportunities for parent involvement, parent efficacy, and amount of time for parent involvement scores were normally distributed for each grade level, as assessed by the Shapiro-Wilk’s test ($p > .05$).

Using the Wilks lambda, the MANOVA revealed significant multivariate main effects for grade level, Wilk’s $\lambda = .866, F(12, 548) = 1.669, p < .05$, partial eta-squared $= .035$. Follow-up ANOVAs also revealed significant main effects by grade level for parent-teacher relationships $F(12, 548) = 4.410, p < .05$, partial eta-squared $= .088$, opportunities for parent involvement, $F(12, 548) = 5.130, p < .05$ partial eta-squared $= .101$, parent efficacy, $F(12, 548) = 3.639, p < .05$, partial eta-squared $= .074$, and time for parent involvement, $F(12, 548) = 3.046, p < .05$, partial eta-squared $= .063$, respectively. Bonferroni tests showed that parent-teacher relationships were statistically significantly stronger among parents whose children were in 11th and 12th grade ($M = 21.85, SD = 7.92; M = 22.92, SD = 9.24$, respectively) than among students in 1st and 3rd
grade ($M = 14.03, SD = 7.17; M = 14.74, SD = 5.52$, respectively) ($p < .05$). By extension, opportunities for parent involvement was rated statistically significantly higher among parents of 11th and 12th graders ($M = 11.66, SD = 3.81; M = 11.98, SD = 4.93$, respectively) than parents of students in 1st and 2nd grade ($M = 7.21, SD = 3.30; M = 8.17, SD = 3.16$, respectively) ($p < .05$).

Third, parent efficacy was also statistically highest among parents of students in 12th grade ($M = 6.90, SD = 2.82$) and lowest among parents of 1st graders ($M = 4.37, SD = 1.97$) ($p < .005$).

Lastly, Bonferroni tests showed that time for parent involvement was statistically significantly higher among parents of students in 12th and 11th grade ($M = 7.76, SD = 2.44; M = 7.52, SD = 2.97$, respectively) than among parents of students in 1st and 2nd grade ($M = 5.07, SD = 2.31; M = 5.88, SD = 1.92$, respectively) ($p < .003$).

Together, these findings seem to indicate that parents of students in the latter years of high school (e.g., namely grades 11 and 12) feel stronger about the quality of parent-teacher relationships, believe there are greater opportunities for parent involvement, rate themselves higher on parent efficacy ratings, and have more time for parent involvement than parents of students in primary grades (e.g., namely grades 1 and 2), in cyber charter schools.

**Research Question 3**

*Does the quality of the parent-teacher relationship, opportunity for parent involvement, parent efficacy, and time for parent involvement vary by free and reduced lunch status in cyber charter schools?*

A one-way multivariate analysis of variance (MANOVA) was run to determine whether parents’ views about the quality of the parent-teacher relationship, opportunities for parent involvement, parent efficacy, and amount of time for parent involvement varied by eligibility for
free and/or reduced lunch, in cyber charter schools. Levene’s test showed that the assumption of homogeneity of variances was not violated for any of the four measures, with \( p > .05 \) for quality of parent-teacher relationship, \( p > .05 \) for opportunity for parent involvement, \( p > .05 \) for parent efficacy, and \( p > .05 \) for time for parent involvement. Box’s M test indicated that variance-covariance matrices were not different across cells, \( F(10, 960458) = .863, \ p > .05 \). Lastly, parent-teacher relationship, opportunities for parent involvement, parent efficacy, and amount of time for parent involvement scores were normally distributed for each grade level, as assessed by the Shapiro-Wilk’s test (\( p > .05 \)).

Using the Wilkes lambda, the MANOVA revealed significant multivariate main effects for free and/or reduced price lunch, Wilks’ = .981, \( F(1, 541) = 2.628, \ p < .05 \), partial eta-squared = .019. Follow-up ANOVAs also revealed significant main effects by eligibility for free and/or reduced price lunch and opportunities for parent involvement, \( F(1, 541) = 7.094, \ p < .05 \), partial eta-squared = .013, but not for parent-teacher relationship, parent efficacy, or time for parent involvement. In total, mean scores on survey questionnaires suggested that parents of students who qualified for free and/or reduced-price lunches reported less opportunities for parent involvement (\( M = 9.85, \ SD = 4.09 \)) than parents of students who did not qualify for free and/or reduced-price lunches (\( M = 10.84, \ SD = 4.32 \)). Comparisons on the other three measures (e.g., parent-teacher relationships, parent efficacy, and time for parent involvement) were not statistically significant, based on eligibility for free and/or reduced-price lunch status, in cyber charter schools.
Table 4-7

*Descriptive Statistics for Free and Reduced Lunch*

<table>
<thead>
<tr>
<th>Factor 1: Parent Teacher Relationship</th>
<th>My child qualifies for free and reduced lunch</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td></td>
<td>18.7700</td>
<td>8.27867</td>
<td>213</td>
</tr>
<tr>
<td>No</td>
<td></td>
<td>19.8389</td>
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**Summary of Findings**

The three research questions sought to (a) explore the impact of the quality of the parent-teacher relationship on student achievement in K-12 cyber charter schools; (b) discern variations in the quality of the parent-teacher partnership over grade levels; (c) identify if the parent-teacher relationship is impacted by free and reduced lunch status.

The results of question one, the goal of which was to explore the impact of the parent-teacher partnership on student achievement in K-12 cyber charter schools, reveal two significant outcomes regarding the impact of parental involvement on student achievement. Data reveals that of the four predictor variables, two were substantial: parent-teacher relationship, and opportunities for parent involvement. This indicates that parent-teacher relationships, and opportunities for parent involvement increase the likelihood of earning a 90% or above in
mathematics. In particular, as perceptions about parent-teacher relationships increase, the odds of earning an A in mathematics in cyber charter schools increases. Increased opportunities for parent involvement also contributed to the prediction of math grades.

Results for question two, which investigated if the parent perception of the parent-teacher partnership varies by grade level revels that the parent-teacher relationship has significant variability over grade levels. Data revealed that the parent-teacher relationships were significantly stronger among parents of 11th and 12th graders than among early elementary parents, 1st and 3rd grades. Opportunities for parent involvement among 11th and 12th grades were also significantly stronger than that of 1st and 2nd grade parents. Parent efficacy, rated highest amongst parents of 12th graders and lowest among parents of 1st graders. Lastly, the time for parental involvement was significantly higher for parents of 11th and 12th graders than of parents in 1st and 2nd grade.

The third and final research question’s goal was to determine if the quality of the parent-teacher relationship varied by free and reduced lunch status in cyber charter schools. The results related to research question three, determined by the four factors of parental perception, revealed that parents whose students qualified for free and/or reduced lunch reported less opportunities for parent involvement. There was no distinction in the other three factors (e.g., parent-teacher relationships, parent efficacy, and time for parent involvement) when compared to those families whose students did not qualify for free and reduced lunch.

The outcomes presented in this chapter provide evidence that the quality of the parent-teacher partnership is indeed an element that needs to be considered when discussing factors that promote academic achievement in K-12 cyber charter schools. Further, the results of this survey indicate that Joyce Epsteins’s Overlapping Spheres Framework and Hoover-Dempsey and
Sandler’s Model for Family Involvement are critical theoretical models for K-12 cyber charter schools. These results were applied to three research questions that seek to provide a basis for investigating the role of the quality of the parent-teacher partnership and its impact on student achievement in K-12 cyber charter schools.
Chapter V

DISCUSSION


Overview

In effort to understand the quality of the parent-teacher relationship and its impact on student achievement in cyber charter schools, this study employed an online survey adapted from Majerus’ (2011) parent-teacher relationship survey, sampling parents from a cyber charter school in Northeastern U.S. While many cyber charter schools collect internal data from parents to ascertain an understanding of parental perceptions and attitudes towards online learning and curriculum, there are limited published studies that empirically investigate this impact.

Decades of research postulates that parental involvement is one of the most significant and critical links to student achievement (Herrell, 2011, Epstein et al, 2009). In traditional school settings, when parents are involved in their child’s education, those students perform better and attain higher academic achievement in terms of both grades and standardized test performance (Hasler Waters, 2014; Fan, 2001; Epstein, 1986). Further, parent involvement is one of the best predictors of academic success, even when including parent income (Epstein, 2009; Eagle, 1989; Becher, 1984; Michigan Department of Education, 2002). (Cheung & Pomerantz, 2011; Fan & Chen, 2001; Froiland, Peterson, & Davison, 2013; Hara & Burke, 1998; Hill et al., 2004/2005; Jeynes, 2007; McWayne, Hampton, Fantuzzo, Cohen, & Sekino, 2004). Despite this long held belief that children benefit academically when parents are involved, there has been little exploration in the quality, breadth, and depth of the parent-teacher relationship, how that relationship changes over time, and how it varies by parental income in cyber charter schools.
First, the existing research did not significantly capture the quality of the parent-teacher partnership and its impact on student achievement in cyber charter schools. Second, the existing literature did not significantly address how this relationship varies by grade level, especially as it relates to the complex and overlapping roles between teachers and parents in cyber charter schools. Finally, the existing literature did not significantly address how the quality of the parent-teacher relationship varies by parental income measured by free and reduced lunch status. To address these empirical literature gaps, this study addressed three research questions:

**RQ1:** Does the quality of the parent-teacher relationship, opportunity for parent involvement, parent efficacy, and time for parent involvement impact student achievement in math in cyber charter schools?

**RQ2:** Does the quality of the parent-teacher relationship, opportunity for parent involvement, parent efficacy, and time for parent involvement vary by grade level in cyber charter schools?

**RQ3:** Does the quality of the parent-teacher relationship, opportunity for parent involvement, parent efficacy, and time for parent involvement vary by free and reduced lunch status in cyber charter schools?

The three research questions utilized Majerus’ framework for both theoretical constructs and survey items. Four factors were examined to measure parental perception of the parent-teacher relationship with their child’s teacher. Levels of trust, caring, and fairness they believe to be exhibited by their child’s teacher (*Parent-Teacher Relationship-Factor 1*); being invited to be involved by their child’s teacher (*Opportunity for Parent Involvement-Factor 2*); belief in about how their involvement in their child’s school impacts their child’s educational experience
(Parent Efficacy-Factor 3); and the investment in time to help their child succeed in school
(Time for Parental Involvement-Factor 4) were evaluated.

This chapter discusses the research findings described in the previous chapter. The goal was to determine the similarities that support the existing literature and to identify any differences that may provide a more in-depth understanding that could better inform the practices of cyber charter schooling and its significant constituents: (1) teacher education programs who need to prepare teachers for 21st century learning environments; (2) education policymakers, such as the Council for Accreditation of Educator Preparation (CAEP) who need to recognize and act on online preparation needs for rising educators; (3) pre-service educator candidates who need to be prepared and understand the parent-teacher roles and relationship with online teaching; and most importantly, (4) K-12 students, whose academic achievement can be advanced through the strengthening of the parent-teacher partnership.

In general, several important results surfaced from this study which should be addressed in order to provide the educational community with an informed picture of how the quality of the parent teacher partnership impacts student achievement, and how that relationship varies by grade and parental income levels. Reflecting on the findings alongside the literature is an important practice to ensure that major themes were not disregarded and to add to the validity of the findings.

Research Question 1

Does the quality of the parent-teacher relationship, opportunity for parent involvement, parent efficacy, and time for parent involvement impact student achievement in math in cyber charter schools?
Summary RQ1

Parental involvement and the home-school relationship has been linked to psychological processes and attributes that support student achievement including teacher ratings of student competence, student grades, and achievement test scores (Epstein et al., 2009; Hoover-Dempsey et al., 2005). Initial findings have reported that parental involvement in K-12 online learning was critical to improving course outcomes and student achievement, but that the type of parental involvement needs further examination (Borup, 2016; Hasler Waters, 2014; Black, 2009; Boulton, 2008; Litke, 1998). As parents have a great responsibility in supporting their child’s learning in a cyber charter school model, the quality of the parent involvement, most specifically the parent-teacher relationship, may be of even greater significance. As the evidence suggests that parental involvement in traditional school settings positively influences student achievement, it was anticipated that there would be a positive correlation between the parent-teacher relationship and student achievement in cyber charter schools.

The results related to research question one, which seeks to quantify the impact of the four factors as it pertains to student achievement in math in cyber charter schools, reveal two significant outcomes regarding the impact of parental involvement on student achievement. Data reveals that of the four predictor variables, only two were substantial: parent-teacher relationship, and opportunities for parent involvement. This indicates that parent-teacher relationships, and opportunities for parent involvement increase the likelihood of earning a 90% or above in mathematics. In particular, as perceptions about parent-teacher relationships increase, the odds of earning an A in mathematics in cyber charter schools increases. Increased opportunities for parent involvement also contributed to the prediction of math grades. Conversely, parent efficacy
and time for parental involvement were not impactful in this study, thus indicating no connection with these two factors with student achievement in math in cyber charter schools.

**Interpretation & Implications RQ1**

The analysis associated with this research question revealed that the parent-teacher relationship and the opportunity for parent involvement are noteworthy factors in student achievement in cyber charter schools. These results are analogous to data reported by Hasler Waters & Leong (2014) and Fan and Chen’s (2001) and support Joyce Epstein’s school-family-community partnership theoretical framework (Epstein, 2009) and Hoover-Dempsey & Sandler (2005) model which confirms that the home-school/parent-teacher relationship is a significant construct in linking academic achievement in traditional school settings. Considering the results of this research study, it can be claimed that the parent-teacher relationship and parent involvement are significant constructs linking academic achievement within cyber charter schools.

Several implications for research, policy, and practice can be drawn from the outcomes associated with research question one. While the quality of the parent-teacher relationship and opportunity for parental involvement are uniformly recognized as essential components of comprehensive academic programs, existing accreditors for teacher preparation, including the Council for Accreditation of Educator Preparation (CAEP), are not formulated to reflect this known (NCATE, 2008; NCATE, 2007). Cyber charter schools and other online school options have the opportunity to lead and communicate the educational methodology and practice of sound standards for the evaluation of the parent-teacher partnership and parent involvement to policy makers.
Further, only 1.3% - 4.1% of teacher preparation programs are currently preparing educators for settings other than the traditional, brick and mortar, classroom. Due to the rapid growth and continued projections of online learning, the call to action for a swift and dramatic shift in preparing preservice teachers is critical in preparing the next generation of teachers for 21st century learning environments- including blended, online, and competency-based models. Teacher preparation programs should incorporate the shifting of the traditional teacher and parent roles in online settings, where the teacher is no longer the sole provider of instruction, especially in the elementary grades. The parent or guardian, often referred to as the learning coach, assumes the responsibility of supporting the student’s learning. These responsibilities may make parental involvement in cyber charter schools likely more important than in a traditional education setting. Challenges arise when these parent and teacher roles overlap or when it was unclear who was ultimately responsible for the student’s academic performance. Continued research and subsequent professional development trainings are needed as the roles of parents and teachers continue to evolve and be refined.

Pre-service teachers should be provided training for their responsibilities as content and child development experts as well as online engagement methods (Hasler Waters, 2014), flipped classroom techniques, effective online pedagogical strategies and providing parents with approaches for setting high learning expectations. As novice teachers in traditional school settings considered working with parents as their paramount challenge and the area in which they were least prepared (Markow & Martin, 2005), this perception may be even more heightened in cyber charter schools. Epstein’s work (2005) found that a majority of teacher education program leaders perceived coverage of this topic in their institutions as inadequate. Universities and teacher preparation programs should prioritize in preparing their candidates to build family and
school relationships, especially regarding cyber charter schools, equipping them with the skills and knowledge to do it well. As the teacher generally determines the quality of the parent-teacher partnership, teacher educators should examine the curricula of teacher education programs to determine if preservice students are gaining the necessary skills to promote and establish these important parent-teacher relationships.

Parents should be supported with student behavioral management and motivation techniques as well as basics in child development. Conclusively, administrators should seek to provide the environment and technologies necessary to effectively support this unique online educational harmony system of teachers, parents, and students which emphasizes the quality of the parent-teacher partnership and opportunities for parent involvement, which ultimately support student success.

**Research Question 2**

*Does the quality of the parent-teacher relationship, opportunity for parent involvement, parent efficacy, and time for parent involvement vary by grade level in cyber charter schools?*

**Summary RQ2**

Partnerships between parents and teachers tend to decline across the grades, unless there is an intentional effort for schools to develop and implement appropriate practices of partnership at each grade level (Epstein, 1996). In traditional school settings, parents have a higher rate of teacher engagement, school meeting participation, attending conferences and events, and volunteering in their child’s school, when their child is in elementary or middle school. Early adolescence is often marked by changes in school context, family relationships, and development processes. In light of these changes, academic performance often declines, while at the same time, the long-term implications of academic performance increases (Hill & Tyson, 2009).
Additionally, maintaining quality parental involvement with adolescents who are becoming increasingly autonomous and independent during middle and high school within a larger and more bureaucratic school setting remains a challenge despite the existing literature that confirms that parental involvement is positively associated with achievement across all grade levels (Hill & Tyson, 2009). As the evidence suggested that the parent-teacher relationship tends to decline across the grade levels in traditional school settings, it was anticipated that this will also be true for the parent-teacher relationship in cyber-charter schools.

Research question two sought to better understand how the quality of the parent-teacher relationship, opportunity for parent involvement, parent efficacy, and time for parent involvement varies by grade level in cyber charter schools. The analysis associated with this research question revealed evidence that the dissimilarity by grade level within cyber charter schools conflicts with its brick and mortar counterpart in all four factors. Data revealed that the parent-teacher relationships were significantly stronger among parents of 11th and 12th graders than among early elementary parents, 1st and 3rd grades. Opportunities for parent involvement among 11th and 12th grades was also significantly stronger than that of 1st and 2nd grade parents. Parent efficacy, rated highest amongst parents of 12th graders and lowest among parents of 1st graders. Lastly, the time for parental involvement was significantly higher for parents of 11th and 12th graders than of parents in 1st and 2nd grade.

Together, these findings seem to indicate that parents of students in the latter years of high school (e.g., namely grades 11 and 12) feel stronger about the quality of parent-teacher relationships, believe there are greater opportunities for parent involvement, rate themselves higher on parent efficacy ratings, and have more time for parent involvement than parents of students in primary grades (e.g., namely grades 1 and 2), in cyber charter schools.
In contrast to the vast empirical literature that concludes that parental involvement declines as the grade levels advance, this study indicated a conflicting result. In all four factors, parents of 11th and 12th graders had the highest impact of parental perception and engagement. Several reasons may contribute to this outcome. First, cyber schools often attract and serve students who may experience difficulty in attending traditional options (Marsh & Carr-Chellman, 2009). Within many cyber-charter schools, the middle school grades are often the marked with the highest level of yearly enrollment with parents indicating their exodus from the traditional schools were often driven by bullying and academic failure. By the mere nature of cyber charter school models, the expectation for parental engagement and involvement is higher than that of a traditional school model. Parents commit to serving as the learning coach and assume the responsibility for supporting their student’s learning (Gill et al., 2015; Barbour, 2013; Hasler Waters, 2013). Additionally, more than half of cyber charter schools at all grade levels expect parents to participate in training programs (Gill et al., 2015). These expectations alone translate to the higher investment needed by parents that choose to enroll their children in cyber charter schools. These expectations, in conjunction with previous difficulties in a traditional school setting, may reveal why parents of 11th and 12th graders are perceived as the highest engaged and involved.

Next, parents generally enroll their children in these alternative school choices for different motivations. While middle school and high school enrollments may be due to an experienced difficulty, either academically or socially, in the traditional school setting elementary parents tend to enroll their students for different purposes. Often, prior homeschooled families, special needs for a learning disabled or gifted child, student athletes or special
interest, faith-based reasoning, or students that live in remote locations are some of the reasons parents may choose cyber charter schooling in the early elementary years. Parents that choose this option often view it as a choice for the betterment of their family and not necessarily in terms of survival for their child. In this aspect, parents of elementary students, view themselves as the educators with the teacher and school as support and resource. Additionally, subject matter content is more manageable in early elementary grades requiring less need for the teacher as the subject matter expert. The role of the teacher as expert may be more critical as students begin to take advanced level coursework such as chemistry and calculus. Thus, it is possible to conclude that enrollment motivations differ between parents of elementary and high school students as well as the need for support in subject matter content.

Finally, time availability and limitations differ between parents of early elementary and high school students. Overall, daily care of younger children is generally more physically demanding and tapers as increased independence and autonomy begin to develop in early adolescence. Additionally, the direct instructional support lessens for parents as their student advances in grade level and depend more on the knowledge of assigned content teachers. This role shift from instruction to support increases availability and may afford parents of older children more time to partner fully and act as supports to the teachers and school.

Conclusively, this study revealed that parents of 11th and 12th graders perceived a stronger parent-teacher relationship and heightened opportunities for parent involvement than early elementary parents in the same cyber charter school. This finding may be of great importance as it is distinctly contrary to the literature in traditional school settings. While this data outcome conflicts with the traditional school model, understanding the above components further undergirds the differences in traditional school and cyber charter schools and the rising
demand to educate stakeholders and contribute voice to the ongoing needs for research, policy, and practice.

**Research Question 3**

*Does the quality of the parent-teacher relationship, opportunity for parent involvement, parent efficacy, and time for parent involvement vary by free and reduced lunch status in cyber charter schools?*

**Summary RQ3**

Decades of research support that affluent parents and communities have greater aspects of positive family involvement (Epstein, 2009). While low-income parents have a desire to play an active role in their child’s education and would like to be involved in a variety of school decisions, they indicate that many of the communications they have with teachers and school are about the problems and difficulties regarding their children. It was found that there was a substantial distinction in how schools communicate with parents from low income levels and that parents were less satisfied in the manner in which their child's teacher and school communicated with them. Regardless of income, Lindle’s (1989) study documented that all parents want to be treated with respect and do not want a “professional-client” relationship.

Further, because low-income parents often have fewer years of education themselves and may harbor more negative experiences with their own education, they often feel ill equipped to question their child’s teacher and school (Lareau, 1996). Self-efficacy affects parents’ relationship with their child’s teacher and school involvement. Negative feelings about themselves may hinder parents from making positive connections with their children’s schools. Parents’ confidence in their own intellectual abilities is the most notable predictor of their school involvement (Eccles & Harold, 1996). While the literature indicates that low-income parents
were less involved in their child’s school, perhaps due to less inflexible work obligations, they spent more time working on their child’s academic concerns than middle or high income groups (Ritblatt, Beatty, Cronan and Ochoa (2002). As the existing literature evidence suggested that low-income parents in traditional school settings are generally less involved in their child’s education, it was anticipated that this will also be true for the low-income parents in cyber-charter schools.

The results related to research question three, which sought to determine if the four factors of parental perception varied by free and reduced lunch status in cyber charter schools, revealed that parents whose students qualified for free and/or reduced lunch reported less opportunities for parent involvement. There was no distinction in the other three factors (e.g., parent-teacher relationships, parent efficacy, and time for parent involvement) when compared to those families whose students did not qualify for free and reduced lunch.

**Interpretation & Implications RQ3**

While there is a notable impact that parents of students who qualify for free and/or reduced lunch in cyber charter schools report less opportunities for involvement, the lack of predictive effect with the other three factors (e.g., parent-teacher relationships, parent efficacy, and time for parent involvement), would, on the surface, seem to indicate that cyber charter schools could ignore the outcomes from the other factors. This could not be further from the truth and should not be held as doctrine.

A plethora of empirical research informs that parent involvement remains one of the best predictors of academic achievement, including parent income (Epstein, 2009; Eagle, 1986; Becher, 1984; Michigan Department of Education, 2002). One of the most central findings in Hoover-Dempsey and Sadler’s (2005) work is that schools greatly influence parents’ decisions
about involvement. HDS proposed three reasons why parents become involved in their child’s education: (a) personal motives; including self-efficacy and parental role construction (Do parents believe they should be involved?) (b) invitations; from school, teacher, and/or child (Do parents believe that the school wants their involvement?) (c) life context; time, skills, and knowledge to help their child (Do parents have the knowledge/skills and time necessary to help their child?). In light of Hoover-Dempsey and Sadler’s model and in conjunction with the results of this study, the onus lies within the school, and perhaps even more heavily on the teacher, to understand why parents of lower socioeconomic status may or may not become involved with their child’s education, which may include low self-efficacy and time limitations; to be intentional about fostering and building strong parent-teacher relationships; and lastly to create and provide meaningful opportunities for parent involvement.

Because it has been determined that there is a higher level of expectation for parental involvement required of parents who choose to enroll their children in cyber charter schools, it can be assumed that these parents, regardless of income, are committed and invested to the academic success of their child. As such, the impact of the quality of the parent-teacher partnership and parental involvement of parents of low-income in cyber charter schools may be as important, if not more important than in traditional schools.

**Limitations & Recommendations for Future Research**

*Future Research Recommendations from the Limitations*

This study had several limitations that should be considered. These limitations may influence future studies that examine the quality of the parent-teacher relationship and its impact on student achievement. An important limitation to note is a single state cyber charter school
was assessed potentially limiting the generalizability to other states. Future research may consider additional states to provide a more comprehensive view of K-12 cyber charter schools.

Another limitation to be considered is that Timothy Majerus’ original survey instrument was designed for parents of elementary students in a traditional school setting. Future studies may consider developing a valid parent-teacher relationship survey instrument to address the specific needs of K-12 cyber charter schools. Further, the parent survey adapted for this study may skew responses towards a higher degree of involvement due to the socially desirable responses by participants. Future research may consider a qualitative design to reduce parental bias.

A self-reported math course grade was analyzed for this study. As this only identifies one content area, this may pose a limitation to other areas of instruction such as English/language arts, science, music, other subjects, and/or standardized test scores. Future investigations may consider including one or more additional areas. As the survey utilized for this study was only provided in English language format, non or limited English speaking parent populations may be underrepresented. Future research may consider including additional survey translations to accommodate the diverse population needs. Finally, research subjectivity may have affected the interpretations and implications. Future research, from a variety of perspectives and educational platforms, should be explored to add to the breadth, depth, and quality of empirical research regarding cyber-charter schools.

**Future Research Recommendations from the Findings**

While offering insightful results, this study also elevated questions that warrant the need for further exploration, which will aid in expanding the knowledge in the operating and
pedagogical practices of cyber charter schools. Results indicate that the parent-teacher partnership is a complex construct which may not be effectively measured utilizing quantitative methodology independently. In order to capture a more holistic view, future research seeking to explore the quality of the parent-teacher partnership and its impact on student achievement should incorporate mixed methodology (quantitative and qualitative methods) and a longitudinal assessment approach.

Additionally, little is known about cyber charter school students or the parents that enroll, and even withdraw, in these alternative public school options. There is a growing need to better understand these students and families, why they have chosen this model, and how as we prepare future educators for this landscape.

Further, cyber charter schools rely heavily on parents to serve as learning coaches and support their child’s educational instruction, however parents may not have the skills or self-efficacy needed for this undertaking. Research dissecting what parental involvement looks like in cyber charter schools and how those specific elements pertain to academic outcomes is needed. Finally, there is a need to pursue research that explores the pre-service teacher preparation needs for online teaching which includes field experiences within cyber charter schools.

**Conclusion**

This dissertation explored the impact of the quality of the parent-teacher relationship and its impact on student achievement in cyber charter schools from a state led cyber charter school in the North Eastern, U.S. Outcomes of this study have specific implications as no study to date has examined if the quality of the parent-teacher partnership in full-time cyber charter schools impacts student achievement. Thus, this investigation is on the cutting edge of teacher
preparation, providing insight and guidance to policy makers, teacher education programs, and
cyber charter schools.

The results of the study fill a gap in the research in cyber charter schools regarding the
preparation of teachers to teach in this new paradigm of 21st century learning environments.
Additionally, this study provides information that will benefit constituents involved with cyber
education including but not limited to state, national, teacher certification organizations, cyber
charter schools, teacher education programs, and pre-service teachers.

First, this study aims to inform educational policy makers and teacher certification
organizations to consider what may be necessary for the training of teachers in pre-service
training programs regarding online teaching and learning, most specifically for cyber charter
schools. Cyber charter school internships and field experiences should be incorporated as an
important aspect for pre-service teacher training and professional development. This experience
would be a theory into practice roadmap for online pedagogical practices while developing a
hands-on understanding and knowledge of the unique roles in the parent-teacher partnership and
how the quality of that partnership impacts student achievement. Consequently, the results of this
study could influence certification requirements to incorporate online school internships as
options for pre-service teachers to pursue.

Second, this research informs cyber charter schools how parental involvement impacts
student achievement, and how schools and teachers need to continue to grow in their knowledge
of how to build and foster quality parent-teacher relationships. As parental involvement and the
quality of parent-teacher relationship are the greatest contributing factors for student
achievement, professional developments should heavily incorporate training and tools to educate
their teachers in developing these critical relationships.
Third, it informs teacher education programs who have not started preparing their teachers to teach online. These teacher education programs need to develop strong and lasting relationships with state cyber charter schools where their pre-service teachers may gain experience that will prepare them for this rapidly changing educational landscape.

Fourth, this study informs pre-service teachers about this opportunity for a teaching career and the significance their roles are as future teachers in building strong parent-teachers partnership and how these partnerships impact student achievement. Also, if afforded an online field experience, they may be awakened to the possibility, and even interest, in pursuing an expertise in online teaching and learning. This knowledge and skill will be increasingly marketable as schools and districts incorporate online, hybrid, and blended models into their educational practices.

While cyber charter schools still account for a relatively small portion of the overall school choice options in the U.S., they comprise one of the fastest-growing public school alternatives. As K-12 online learning continues to grow, so too does the need to prepare teachers to teach online. This dissertation serves as a building block in advocating for the preparation and development of skills needed for engagement of cyber school parents that has not been routinely included in teacher education programs. Many remain optimistic that these schools can work and are hopeful that more research and reasoned policymaking may revise and strengthen the operation of these alternative schools. This dissertation aims to contribute to this research and goal.
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APPENDIX A

IRB Approval

To: Virginia Henderson
From: David Delmonico, IRB Chair
Subject: Protocol #2017/10/11 - Approval Notification
Date: 01/06/2018

The protocol Parent-Teacher Relationships in Cyber Charter Schools: Investigating the Quality of the Parent-Teacher Relationship and Its Impact on Student Achievement has been approved by the IRB Chair under the rules for expedited review on 01/06/2018.

The consent form is stamped with IRB approval and one year expiration date. You should use the stamped forms as originals for copies that you distribute or display.

The approval of your study is valid through 01/05/2019, by which time you must submit an annual report either closing the protocol or requesting permission to continue the protocol for another year. Please submit your report by 12/08/2018 so that the IRB has time to review and approve your report if you wish to continue it for another year.

If, prior to the annual review, you propose any changes in your procedure or consent process, you must complete an amendment form of those changes and submit it to the IRB Chair for approval. Please wait for the approval before implementing any changes to the original protocol. In addition, if any unanticipated problems or adverse effects on subjects are discovered before the annual review, you must immediately report them to the IRB Chair before proceeding with the study.

When the study is complete, please terminate the study via Mentor by completing the form under the Continual Renewal tab at the bottom of your protocol page and clicking on terminate. Please keep a copy of your research records, other than those you have agreed to destroy for confidentiality, over a period of five years after the study’s completion.

If you have any questions, feel free to contact me.

David Delmonico, Ph.D.
Institutional Review Board, Chair
irb@duq.edu

Attachments:
  • 2017-10-11 Consent Form Stamped.pdf
APPENDIX B

Parental Consent Form

PARENTAL CONSENT TO PARTICIPATE IN A RESEARCH STUDY

TITLE:
Parent-Teacher Relationships in Cyber Charter Schools: Investigating the Quality of the Parent-Teacher Relationship and Its Impact on Student Achievement

INVESTIGATOR:
Theresa Henderson, Doctoral Candidate in the Department of Leadership in Education

ADVISOR:
Dr. Kara McGoey, PH.D., Dissertation Chair

SOURCE OF SUPPORT:
This study is being performed as partial fulfillment of the requirements for the doctoral degree in Instructional Technology and Leadership in Education at Duquesne University.

PURPOSE:
You are being asked to participate in a research project that seeks to investigate the quality of the parent-teacher relationship and its impact on student achievement. In order for you to participate in this study, your child must have been a student within Commonwealth Charter Academy.

PARTICIPANT PROCEDURES:
You will be asked to complete a 47-question survey about your child, your child’s teacher, the quality of the parent-teacher relationship, the opportunity for parental involvement, parent efficacy, and parental time invested. This is the only request that will be made of you. Your child’s teacher, administration, and school will have no knowledge of your participation in this survey.

RISKS AND BENEFITS:
There are minimal foreseeable risks associated with this study. Possible risks may include anxiety and/or discomfort from the survey participation. Note that no data will be connected to individual participants. Although there may be no direct benefit to the participant, the participation will help the profession by supporting future K-12 online classrooms. More
broadly, this study is important because it will add to K-12 and higher education research specific to online best practices, pedagogy and methodology.

COMPENSATION:
You and/or your child will receive no monetary compensation as a result of participating in this research study. Participants will have the option to participate in a drawing for a $50.00 VISA gift card. You will incur no costs as a result of participating in this research study.

CONFIDENTIALITY:
Your participation in this study and any personal information that you provide about your child will be kept confidential at all times and to every extent possible. Your child’s name will never appear on any survey. All survey results will be kept secure. No identity will be made in data analysis.

Names, email addresses, and IP address will not be collected. If, however, participants choose to enter the gift entry, they will be asked to enter their email address on a separate survey form so that the winner may be contacted. Data and results will not be shared or made public in a way that indicates the identity of parent participants; only group outcomes will be reported. It is possible that information gathered in research will become part of a published product. If you choose to withdraw from the survey, any data would not be used as part of the research project. Research records will be kept for a minimum of five years past study completion.

RIGHT TO WITHDRAW:
Your participation in this research study is completely voluntary. You do not have to take part in this research study, and should you change your mind, you can discontinue the survey at any time. Should you elect to withdraw from study participation, any data about you would not be used as part of the research project.

You are under no obligation to give your permission to participate in this study, and you may withdraw your permission at any time by notifying a member of the research team.

SUMMARY OF RESULTS:
A summary of the results of this research will be supplied to you, at no cost, upon request.

VOLUNTARY CONSENT:
I have read the above statements and understand what is being requested of me. I also understand that the information I provide about my child is voluntary and that I am free to withdraw at any time, for any reason. On these terms, I certify that I am willing to participate in this research project.

On these terms, I agree that I am willing to participate in this research project.

I understand that should I have any further questions about my participation in this study, I may contact Dr. Kara McGoey at 412.396.4105. Should I have questions regarding protection of human subject issues, I may contact Dr. David Delmonico, Chair of the Duquesne University Institutional Review Board, at 412.396.1886.

Duquesne University’s Institutional Review Board has approved/verified this research study.

If you proceed to the next page, it indicates that you have agreed to consent to your participation in the research study.
## APPENDIX C

Parent Survey (Majerus, 2011).

### Section A

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>My child is</td>
<td>African-American</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Asian</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Caucasian</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hispanic</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Multi-racial</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pacific-Islander</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>2.</td>
<td>My child’s race is</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>K</td>
<td>1st</td>
<td>2nd</td>
</tr>
<tr>
<td>3.</td>
<td>My child’s grade is</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>After high school graduation, I would like my child to pursue (mark all that apply)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>College</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Job rather than further education</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Military</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Trade School</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>5.</td>
<td>The most significant factor in my child’s education is</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Classroom Teacher</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Curriculum &amp; Materials</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Extracurricular Opportunities</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Home Environment</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td></td>
<td>School of Attendance</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>6.</td>
<td>The highest level of education I obtained was</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Did Not Graduate</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High School Graduate</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Some College</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td></td>
<td>College Degree</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Advanced Degree</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>7.</td>
<td>How many of your children have attended this school?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>8.</td>
<td>For those students, what was the total combined number of years they have attended this school?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Less Than 1 Year</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1-3 Years</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4-6 Years</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7-9 Years</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td></td>
<td>More than 9 years</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>9.</td>
<td>How many times have you visited this school this year (not including parent/teacher conferences)?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Never</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1-2 Times</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3-5 Times</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5-10 Times</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td></td>
<td>More than 10 Times</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>10.</td>
<td>Who initiated most of the contacts you had with the school this year?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Classroom Teacher</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Counselor</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Office secretary</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Me (Parent/ Guardian)</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Principal</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>11.</td>
<td>When you had contacts with school, which of the following best describes the reason for the contacts (select all that apply)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Praise or good news about my child</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Academic/grade concerns about my child</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Behavior concerns about my child</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Attendance concerns about my child</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>12.</td>
<td>My child’s teacher has contacted me by (select all that apply)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>E-mail</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Personal note or letter</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Phone call</td>
<td>○</td>
<td>○</td>
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</tbody>
</table>
## Section B

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. My child qualifies for free or reduced price lunch</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>2. My child’s teacher has visited my home</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>3. I requested that my child have his/her current teacher</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>4. One or more of my other children have also had this classroom teacher</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>5. I have volunteered in my child’s classroom this year</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>6. I have volunteered in the school this year</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>7. I have met face to face with my child’s teacher</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Statement</td>
<td>Strongly Disagree</td>
<td>Disagree</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
<td>-------------------</td>
<td>----------</td>
</tr>
<tr>
<td>1. My child’s teacher makes me feel welcome at school.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2. I believe my involvement in my child’s education will significantly impact my child’s success in school.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3. I respect my child’s teacher.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>4. My child’s teacher is fair.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>5. My child’s teacher provides opportunities for me to be involved in my child’s education at school.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>6. I believe I am an involved parent.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>7. My child’s teacher encourages me to be involved in my child’s education.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>8. I trust my child’s teacher.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>9. My child’s teacher is a good communicator.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>10. I have enough time and energy to attend special events at school.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>11. My child’s teacher provides me opportunities to volunteer in the classroom.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>12. I am glad my child has his/her current classroom teacher.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>13. I feel comfortable in talking with my child’s teacher about a concern.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>14. My child’s teacher involves me in educational decisions.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>15. My child’s teacher cares about my child.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>16. My child’s teacher helps me understand how I can be involved in my child’s education.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>17. I believe maintaining regular contact with my child’s teacher positively impacts my child’s success in school.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>18. My child gets enough attention from his/her classroom teacher.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>19. My child’s teacher is friendly.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>20. I have enough time to volunteer in the classroom.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>21. My child’s teacher cares about my child’s education.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>22. I believe it is important to maintain regular contact with my child’s teacher.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>23. I have enough time to help my child with homework.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>24. My child’s teacher is doing a good job educating my child.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>25. Overall, I have a positive perception of my child’s teacher.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>26. My child is getting a good education at this school.</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
Section D

Timothy Majerus' Survey Reliability

<table>
<thead>
<tr>
<th>Factor</th>
<th>N</th>
<th>Items</th>
<th>Reliability Coefficient *</th>
<th>Number of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>917</td>
<td>2, 6, 7, 8, 13, 18,</td>
<td>.959</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td></td>
<td>21, 23, 32, 41, 46</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>917</td>
<td>12, 28, 35, 40, 48</td>
<td>.869</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>928</td>
<td>9, 29, 30, 47</td>
<td>.830</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>930</td>
<td>1, 15, 44</td>
<td>.692</td>
<td>3</td>
</tr>
</tbody>
</table>

Factor 1 = Parent-Teacher Relationships  
Factor 2 = Opportunity for Parent Involvement  
Factor 3 = Parent Efficacy  
Factor 4 = Time For Parent Involvement  
* Cronbach’s Alphas