A MIXED METHODS STUDY INVESTIGATING PARENTAL INVOLVEMENT AND STUDENT SUCCESS IN HIGH SCHOOL ONLINE EDUCATION

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AUTHORIZATION TO SUBMIT DISSERTATION

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ABSTRACT

While questions exist about the effectiveness of online education, it is a growing part of the pantheon of educational choices available to students in America today. Though online education first gained popularity for advanced learners, increasingly at-risk populations are enrolling in online learning environments. Research in K-12 full-time, online learning environments is nearly non-existent. This mixed-methods study investigates student achievement in the full-time, online learning environment and the effect parents have on student success. Descriptive statistics and Pearson's Correlation found statistically significant relationships between the variables of grade point average and socioeconomic status, family configuration, education of the parent, student grade level, gender and previous online experience. Themes from semi-structured interviews found parents of current or former students in a full-time, online school perceive multiple facets of student success in the online environment. The school can provide support to families by communicating, being transparent with tools, and individualizing instruction. Students must be self-motivated, engaged and participating, and accountable for their own learning. Parents should be available to monitor, mentor, and motivate students.

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Introduction

Entry Vignette

It is a bright, sunny morning in Switzerland; Chad, an American high school student, opens the curtains in the hotel to peer out at the Alps while booting up his laptop. It is time for school, even while his teachers in America are still sleeping. He is a member of the U.S. Ski Team and travels nearly 200 days per year, chasing the snow and a faster time down the slopes. He will earn a diploma from an accredited public American high school that is free to him, paid for by his family's tax dollars in the U.S. state where he resides. It does not matter that he and his teacher are not in the same time zone or even in the same country; they communicate regularly, Chad receives individualized feedback on each assignment, and he can watch the recordings of the live class sessions that he misses while training. Chad's mother, who is also his coach, travels with him, encouraging him on the slopes and keeping him on a strict schedule of training and schooling. He is the beneficiary of a full-time, online high school and having this schooling opportunity makes it possible for him to chase his dream: Olympic gold.

Every student who goes to school online has a reason and a story. Some have a village surrounding them to make sure they are successful, and some have only their own will, and at times, little more. Some take advantage of the opportunities that full-time, virtual schools offer, and some stay hidden behind the computer screen. Success or failure in the online environment is as individual and diverse as the schooling option itself.

Introduction

Online K-12 education is one of the fastest growing educational reforms in American education today (Watson, Murin, Vashaw, Gemin, & Rapp, 2011). Online learning is often difficult to define as it is not a one-size-fits-all model. One of the difficulties facing researchers

and policy makers is in defining online learning environments to be able to compare like programs. There are multiple variations in program and delivery, ranging from full-time schools where students earn a diploma, to statewide programs providing single-course enrollments, to a student in a rural area taking an advanced course not offered in his district, and more (Cavanaugh, Barbour, & Clark, 2009; Clark, 2001; Rice, 2009; Watson et al., 2011).

In the 2011 version of the annual report, *Keeping Pace with K-12 Online Learning*, Watson et al. (2011) state that full-time enrollment, in schools where students do their coursework completely in an online environment, continues to grow. Enrollment has increased by approximately 50,000 students nationwide just between 2009 and 2011 (Watson et al., 2011). Additionally, between 2010 and 2011, three more states opened full-time, virtual schools bringing the total number of U.S. states with this educational choice to 30 (Watson et al., 2011).

While enrollments continue to grow, the effectiveness debate persists with some research noting that online education is just as effective as face-to-face instruction and other studies stating the opposite (Cavanaugh, 2001; US Department of Education, 2009; Zhao, Lei, Yan, Lai, & Tan, 2005). The discussion is slowly beginning to differentiate between program types, including which programs are most effective, and focusing on best practices for successful implementation of these programs (Cavanaugh et al., 2009; Rice 2009). In a Delphi study conducted by Rice (2009), experts echo this sentiment by encouraging educators and researchers to more succinctly define programs in the next five years in order to compare the effectiveness of all types of online education.

Statement of the Problem

When speaking about the emergence of mixed methods research, Creswell (2008) states that "the educational researcher needs a large toolkit of methods and designs to address complex

interdisciplinary research problems" (p. 321). A similar approach is warranted by the complex issues surrounding online education, as well; researchers, educators, and policy makers need to use all of the tools at their disposal to address this problem's unique attributes.

This mixed-methods study was designed to determine variables that correlate to academic success for full-time, online high school students. In addition, the issue of parental involvement for both students who have been successful in an online school and those who have not found success will be explored. While researchers continue to investigate the merits of online education compared to traditional education, online schools continue to enroll students and need to find the most effective ways to educate those students (Rice, 2009). Online enrollments expanded originally as advanced learners had increased access to Advanced Placement™ courses, but at-risk students are also enrolling in online schools as an alternative to their current educational setting (Cavanaugh et al., 2009; Morabito, 2011). Investigating student characteristics, course design, teacher presence, and other external factors is a start to aiding teachers and administrators in full-time, online learning environments to better reach students who are enrolling in this educational option (Archambault et al., 2010; Cavanaugh et al., 2009; Kerr, 2009; Picciano & Seaman, 2010; Rice 2009).

Research is nearly silent on the role of parents and parent perceptions in increasing student success in the full-time, online learning environment. Solid, research-based information in the full-time, online environment will help administrators, policy makers, and parents better meet the academic needs of students in online schools.

Background

Research demonstrates that most students require a caring community to be successful in online learning environments (Archambault et al., 2010; Dzakiria, 2008; Kerr, 2009; Repetto,

Cavanaugh, Wayer, & Feng, 2010; Ronsisvalle & Watkins, 2005). Online education is not fully asynchronous any longer as stakeholder interaction becomes more mainstream through blended learning and synchronous opportunities for students. Teachers find opportunities for students to participate with each other in the online environment using a variety of strategies including micro blogs such as Twitter™, blogs, peer feedback, and student mentors (Cavanaugh et al., 2009; Dixson, 2010; Nykvist, 2012, Zhao et al., 2009).

Though policy makers and those responsible for school budgets may want to believe this is not the case, students who attend online schools still need teachers (Dawley, Rice, & Hinck, 2010; Zhao et al., 2009). In a survey of 220 school superintendents, assistant superintendents, and curriculum coordinators commissioned by K12, Inc., America's largest provider of curriculum and online education programs, 88% responded that it was extremely important to have teachers available to help students with individual needs when taking online courses (K12, Inc., 2012). In that same survey, 97% of respondents indicated that if students were engaged in full-time, online schooling, teachers were extremely important (K12, Inc., 2012). Teachers are reaching out to students in new ways using project-based learning and technology to decrease the distance between teacher and student with YouTube™, flipping the classroom, text messaging, and virtual role playing (Boling & Beatty, 2010; Fralinger & Owens, 2009; Herring, 2004; Rosa & Lerman, 2011).

Parents are one group of stakeholders virtually absent from literature related to K-12 online learning environments. Full-time, online schools often partner with parents to oversee and support students who are completing their education in an online environment. Though parents play a significant role in educating students who school online, the research is nearly silent on

their roles. For the purposes of this research, the larger issue of parental involvement, and how it relates to the online environment, was extensively explored.

Epstein (2001) discusses family, school, and community partnerships and will be used as the theoretical framework for this study. The model of overlapping family and school spheres displays the type of cooperation that must be present in any school setting for students to succeed (Epstein, 2001). At the center of Epstein's model are three independent but overlapping entities: school, family, and community. External forces determine how much each entity overlaps and how strong one or another is in the relationship. The forces determining the overlap of school, family, and community are:

- age, grade level of student, and time
- experience, philosophy, and practices of the family
- experience, philosophy, and practices of the school
- experiences, philosophy, and practices of the community (Epstein, p. 28)

Applying Epstein's research to the online educational setting, full-time, virtual schools which partner with parents increase the overlap in the school and family spheres, which should, in turn, positively affect the success of students.

Research Questions

The goal of every educator is to find the solution to help students be more successful. With that end in mind, this dissertation study focuses on three primary questions:

1. What factors affect student achievement in a K-12 online school?
2. What variables correlate most strongly with student achievement in a K-12 online school?

3. What are the perceptions of parents concerning their role in the student achievement of their children while they were enrolled in a full-time, K-12 online school?

Description of Terms

One of the challenges educational researchers and policy makers face with online education is the ability of effectively comparing programs or types of online learning environments (Clark, 2001; Watson et al., 2011). The International Association for K-12 Online Learning (iNACOL) published a document in 2011 entitled *The Online Learning Definitions Project.* This list is comprehensive, current, and research based, providing support for many of the definitions and terms used in this study.

Asynchronous learning. "Communication exchanges which occur in elapsed time between two or more people. Examples are email, online discussion forums, message boards, blogs, podcasts, etc" (iNACOL, 2011, p. 3).

At-risk student. "Any student who is performing poorly academically, or who may face learning impediments not limited to socioeconomic status, behavioral and learning disabilities, and home, family and community stresses; may also specifically refer to students in danger of not passing a course or graduating" (iNACOL, 2011, p.3).

Blended course. "A course that combines two modes of instruction, online and face-to-face" (iNACOL, 2011, p. 3).

Brick and mortar schools. "Refers to traditional school or traditional school building, as contrasted with online school" (iNACOL, 2011, p. 3).

Full-time, online program. "Also known as full-time, online school or cyber schools, these are schools where most students complete all of their education. Full-time, online schools

are required to meet the state and Federal mandates including Adequate Yearly Progress" (iNACOL, 2011, p. 6).

State virtual schools. Online schools created by State Departments of Education, legislatures and funded by states to provide online courses to students. Usually, these are not diploma granting agencies and are not held accountable to meet the requirements of state and Federal mandates (iNACOL, 2011; Watson et al., 2011).

Synchronous learning. "Online learning in which the participants interact at the same time and in the same space" (iNACOL, 2011, p. 9).

Significance of the Study

A common theme in online education research is the need for increased research to occur (Black, 2009; Cavanaugh et al., 2009; Rice, 2009; U. S. Department of Education, 2009). Research in the online educational sphere is increasing, but results are often generalized to the K-12 setting using participants from other demographical groups. Multiple studies have been conducted with older participants from post-secondary institutions and are occasionally used by policy makers or educators to make generalizations about K-12 education (DeTure, 2004; Dixson, 2010; Hung & Zhang, 2008; Karp, Calcagno, Hughes, Jeong, & Bailey, 2007; Priebe, Ross, & Low, 2008; Torres & Eberle, 2010). Another body of research that exists in the K-12 segment of online learners includes those studies that utilize State Virtual Schools as their setting (Black, 2009; Feng & Cavanaugh, 2011; Hawkins, Barbour, & Graham, 2011; Lemley, Sudweeks, Howell, Laws, & Sawyer, 2007; Liu, Black, Algina, Cavanaugh, & Dawson, 2010; Liu & Cavanaugh, 2011; Lowes, 2005; Wallace, 2009). While it is true that high school students in Georgia could have similarities to high school students in Montana, students in State Virtual Schools are not taking a full-time student load of online courses; generalizations about success or

failure in that setting may not be appropriate to the student taking multiple online classes each semester.

This study provides a glimpse into data and perceptions of parents whose children attended or are currently enrolled in a full-time, online school, and may better generalize to that growing school population. Policy makers are looking to technology to help solve the problem of teacher shortages or budget shortfalls. If online education is to be used for this purpose, it needs to be effective and systematic so students may find success. To that end, practitioners in the field must find methods to reach all of the students who walk through the door. Former West Virginia Governor Bob Wise made the following statement in a 2010 policy brief regarding online education:

> "Policy decisions today must embrace a dramatic transformation of teaching and learning. Technology can no longer be thought of simply as an 'add-on' in education but rather as an integral part of the total education environment" (Wise & Rothman, 2010,p. 2).

Black (2009) asserts that current research should be driven by virtual schools. This study will aid current research, and assist virtual schools or traditional school districts which are beginning to embrace blended models, or integrating technology to discover the right environment, and the most effective pedagogy.

One reason for conducting a research study is to "fill a gap or void in the existing literature" (Creswell, 2008, p. 72). With a few notable exceptions, research pertaining to parental involvement in K-12 online schools of any configuration is nearly absent from the discussion (Black, 2009; Liu et al., 2010; Rice, 2009). Most American parents send their children to the local brick and mortar school to be mentored by a teacher at least 180 days each year. Even in

the best blended or synchronous online environments, teachers are not in front of students daily in the same way they are in a brick and mortar school. Black (2009) maintains that parents who have students in an online school environment have a strong influence on the achievement of their students, but encourages further study using qualitative methods to determine perceptions and the roles of parents of students in virtual schools.

Online High School (pseudonym) is a full-time, virtual school in the Western United States. Ninety-five percent of the students at Online High School (OHS) are full-time students, with the other 5% attending OHS part time and also taking classes at a brick and mortar high school part time. OHS is a public charter high school and demographically similar to the brick and mortar high schools in the state where it exists. Special populations include students with special needs (>10% of the overall population), free and reduced lunch (>60%), a growing number of homeless students (<1%) and at-risk or emancipated youth (>20%). Populations that are not attracted to OHS are students who are Limited English Proficient (LEP) or students who are interested in activities that a virtual school has a difficult time providing, such as team sports or musical performance groups. OHS is a large virtual school with students in every county of the state where it is chartered. It has been in existence for more than 10 years and has a teaching staff that is 100% highly qualified, according to No Child Left Behind (2002). The teaching staff at OHS is composed of 28 teachers, 36% who hold graduate degrees, and four who have been teaching at OHS since the first year of its existence. There is little teacher turnover at OHS.

OHS' instructional model is ideal for a study that could be generalized to the larger full-time, online school population for several reasons. OHS has large enrollments and, as it has been enrolling students for over 10 years, there is a significant population from which to draw. This allows the data to be less affected by outliers and makes for more effective connections with

other virtual school populations. OHS also has some challenges, as many online learning environments do, including high student attrition. Seeking solutions to increase student achievement and parental engagement will aid OHS and other online schools by helping students increase the frequency and level of academic success.

Overview of Research Methods

A mixed-methods design was selected for this study. Mixed-methodology provides the opportunity to examine demographic and academic data for a random sample of high school students, inferring associations for student success in the online environment. Mixed-methodology is also conducive to the exploration of perceptions of parents of students who had experience in full-time, online schools to gauge the influence of parental involvement on student achievement.

A random sample of 350 student records was provided by the administration of Online High School. This data included a sample of students who were enrolled full-time between the years of 2010-2012. Student names and other identifying information were purged from the sample, making the sample anonymous. Student demographic and academic data was analyzed for associations and correlations among grade level, gender, socio-economic status, family configuration, education level of parents, and previous experience with online learning. Descriptive statistics and Pearson's correlation analysis were conducted to demonstrate which variables had the strongest correlation to student achievement as gauged by student GPA. For the purposes of all statistical tests, a resulting p-value equal to or less than 0.05 was considered significant. Statistical analysis was conducted using IBM SPSS Version 20.0 (IBM SPSS, 2013).

The most effective way to determine the perceptions of parents of full-time, online school students is through the use of a series of semi-structured, one-on-one interviews. Semi-structured

interviews allow the researcher to collect data efficiently and give participants a chance to voice their opinions (Creswell, 2008; Marshall & Rossman, 2011). An electronic notice was sent to current and former parents of OHS students from the public directory information provided by OHS. This notice explained the research project and solicited volunteers for a follow-up phone call. The electronic notice served solely as a recruitment tool for the study, and no additional data was collected. Using the results from the electronic notice, all parent volunteers were contacted to determine which parents were suitable candidates for participation in this study. There were two established criteria for parent participants in this study: 1) parents had a student enrolled at OHS for at least one semester between 2010 and 2012, and 2) students had either been successful at OHS or had not found success in the online environment.

After participants were recruited, a schedule was established for the first of two semi-structured interviews conducted, either face-to-face or electronically, using Blackboard Collaborate™ or Audacity™ (Audacity, 2013; Blackboard Collaborate, 2013). The first interviews lasted 70-105 minutes each. All participants consented to a follow-up interview which lasted 35-55 minutes. Sixteen interviews were conducted as part of this study. Each interview was audio-taped, transcribed, and coded for themes.

Chapter II

Literature Review

Technology has a tremendous impact on many facets of 21st Century life. Technology affects how we communicate, do business, make friends, retrieve and disseminate information, and maintain relationships. Education is not exempt from adapting to changing technology. Education has long been augmented by the daily use of SMART boards™, projectors, personal computers, and the internet. With the rapid growth of internet-based courses and online schools, technology is also impacting how instructors teach, and students learn.

K-12 Education and the Online Learning Environment

Keeping Pace with K-12 Online Learning (2011) notes that 30 states support a full-time, K-12 online school program. Ten additional states have statewide virtual options providing course opportunities for students (Watson et al., 2011). Among U.S. high school students, the number taking online courses has tripled in the past three years (Learning in the 21st Century, 2011). Some state legislatures are mandating the inclusion of online learning as part of student graduation requirements (Davis, 2012; Sheehy, 2012; Vander Ark, 2012). Alabama, Florida, Michigan, Virginia, and Idaho had mandatory online high school requirements in 2012 (Sheehy, 2012). Additional states have passed legislation to allow students the option of taking online courses (Davis, 2012). While state or district mandates have increased access to online options, public opinion about online courses is mixed. In the fall of 2012, voters in Idaho passed a series of referenda repealing a host of education reforms, including a one-to-one laptop initiative, enacted by the legislature (Russell, 2012). While the online course requirement was not included in the laws that were repealed, the Superintendent of Public Instruction asked the Board of Education to repeal the online course requirement in reaction to the voice of the voters (Russell,

2012). In a recent blog post, Vander Ark (2012) proposes all states should mandate online learning to prepare students for post-secondary success and increase access to Advanced Placement™, dual credit and foreign language courses. Vander Ark (2012) likens the necessity for an online course requirement to that of requiring Algebra, stating that if Algebra was not required, many students would not take it.

Online enrollments are growing at other points on the academic spectrum, as well. The Sloan Consortium reports that enrollment in online courses at the postsecondary level grew 10% in 2011 (Allen & Seaman, 2011). Middle school enrollments in online courses doubled in 2010 with 19% of middle school students taking an online course (Learning in the 21st Century, 2011). Clark (2001) estimated approximately 28,000 students were expected to enroll in an online course during the 2002-2003 school year. By October 2010, when the follow-up study entitled *A National Primer on K-12 Online Learning, Version 2* was published, iNACOL estimated the number of online enrollments by K-12 students to exceed 1.5 million (Wicks, 2010). The literature clearly demonstrates the massive growth taking place in the K-12 online learning environment (Watson et al., 2011; Wicks, 2010).

While the volume of research in the online school population is increasing, not all research is comparable as not all online programs have the same scope (Barbour, 2009; Clark, 2001; Cavanaugh et al., 2009; Watson et al., 2011). An often-cited study conducted by Clark (2001) defines early online educational programs. A virtual school is defined as, "an educational organization that offers K-12 courses taught through Internet- or Web-based methods" (Clark, 2001, p. 1). Barbour (2009) further defines the differences between virtual schools and what he terms cyber schools. Virtual schools can be state-wide, multiple school district, or province consortia, and provide courses to students on an individual basis, whereas cyber schools are full-

time programs in which students participate for their entire school experience (Barbour 2009). Clark (2001) termed the course providers or consortia Virtual Charter Schools while the full-time schools he termed Local Education Agency-Based Schools. Between the years 2004-2007, cyber school enrollments tripled, but they still account for a small percentage of the overall population of students taking classes in an online environment (Tucker, 2007). While it is a small part of the overall population, during the years 2009-2011, 50,000 additional students enrolled in a full-time, online educational option (Watson et al., 2011).

Much of the research conducted in the online learning environment has been completed in large, state-sponsored virtual course providers, such as Florida Virtual School which does not provide full-time, comprehensive school programs for students (Black, 2009; Feng & Cavanaugh, 2011; Hawkins et al., 2011; Lemley, Sudweeks, Howell, Laws, & Sawyer, 2007; Liu, et al., 2010; Liu & Cavanaugh, 2011; Lowes, 2005; Wallace, 2009). In addition, more research has been conducted with older participants from post-secondary institutions and is sometimes used by policy makers and/or educators to make generalizations regarding K-12 education (DeTure, 2004; Dixson, 2010; Hung & Zhang, 2008; Karp et al., 2007; Priebe et al., 2008; Torres & Eberle, 2010). Neither of those segments of the population learning in online environments encompasses the group of learners who attend school in full-time, K-12 online environments.

Most of the current research surrounding those attending full-time, online schools is limited (Barbour & Reeves, 2009; Cavanaugh et al., 2009). Research reporting sometimes consists of personal experiences of practitioners in the field. For example, Greenway and Vanourek (2006) provide some history of full-time, online environments and then give examples of different types of programs, including a description of the typical day for a virtual school

student. Revenaugh (2005-2006) shares her experiences as an administrator in an online school in Arizona, illustrating how online learning functions in a fully-virtual environment with stories of unique student situations. While engaging and informative, questions remain in the minds of policy makers regarding the effectiveness of a fully online education for students in grades K-12. In an article based on their research, Picciano, Seaman, and Allen (2010) state that without more public policy and study, fully-online programs are never going to be as widely accepted as blended programs. Black (2009) affirms that virtual schools should be leading the research in online learning. There remains a need for more systematic, organized research using full-time, online learning environments.

Common Usage for Online Learning

School reformers and educational policy makers have begun encouraging online learning in the K-12 setting for the purposes of advanced or remedial courses, dual credit opportunities, and supplementing the course catalogs of rural or urban school districts (Karp et al., 2007; Picciano & Seaman, 2010; Barnett & Stamm, 2010; Watson & Gemin, 2008). A recent survey of high school administrators from across America found credit recovery as one of the most frequently cited reasons schools chose to utilize online education (Picciano & Seaman, 2010). While administrators have concerns about the types of students who can be successful in online courses, with increasing accountability requirements, schools are offering online courses for the purpose of earning credits for classes that they would have previously failed in a traditional setting (Watson & Gemin, 2008).

Another growing use of online instruction is concurrent or dual credit options (Hannum, Irvin, Banks, & Farmer, 2009; Karp et al., 2007; Picciano & Seaman, 2010; Barnett & Stamm, 2010). As indicated by a study commissioned by Blackboard™ (Barnett & Stamm, 2010), 74%

of students who are enrolled in a dual credit class take it at their local high school. Additionally, some students are taking courses on college campuses while still in high school, but online dual enrollments are increasing. Of the districts who responded to this survey, 47% were using university courses delivered online for dual credit opportunities (Barnett & Stamm, 2010). Helping students gain success in postsecondary courses while still in high school is becoming more popular in both traditional and online settings (Barnett & Stamm, 2010; Karp et al., 2007). Forty-six states have policies regarding dual enrollments while 12 states have mandated participation in dual credit programs, and 21 more have voluntary participation (Barnett & Stamm, 2010). Seventeen states have online dual enrollment programs. The most common use of dual enrollment in the U.S. is by students who are advanced learners looking to utilize their senior year of high school to earn college credit (Barnett & Stamm, 2010).

Dual credit or dual enrollment options are having increasingly positive effects for student achievement across the spectrum. A study by Karp et al. (2007) of dual credit programs in Florida and New York demonstrated that offering dual credit opportunities to underserved populations leads to enrollment and persistence in college. Comparing a sample of all dually enrolled students to a sample of Career Technical Education (CTE) students found CTE students were 8.6% (Florida) and 9.7% (New York) more likely to enroll in a university after taking the dual enrollment course. In Florida, no difference was shown whether a student had taken one dual enrollment course or many; the results were virtually the same. In the New York sample, a student's first semester college grade point average was more positively influenced after taking two dual enrollment courses in high school (Karp et al., 2007).

Many school districts are using online courses to expand their course offerings (Hannum et al., 2009; De la Varre, Keane, & Irvin, 2010; Picciano & Seaman, 2010). Rural schools are

often without the resources or staff to offer a broad catalog of courses for either high level or underachieving students (Clark, 2001; Hannum et al., 2009; Picciano & Seaman, 2009; Picciano & Seaman, 2010). Results of a national survey reported that 85% of rural districts have used some form of distance education, and 69% continue to have students taking online courses (Hannum et al., 2009). In this survey, 394 of 417 rural school districts responding to a 20-minute telephone interview answered questions about their use of distance or online education. The major finding from this survey and other studies was that rural districts, without the resources or staff to offer a large catalog of courses, use distance education to meet the needs of both advanced and remedial learners by offering online electives, credit recovery, and Advanced Placement™ (Hanum et al., 2009; Picciano & Seaman, 2009; Picciano & Seaman, 2010). Online education is a necessity in many rural or high poverty schools. The National Center for Education Statistics (2008) echoes this finding using longitudinal data from 2002-2005: Rural districts use online learning 27% more often than their counterparts in urban or suburban settings for dual credit college courses and 10% more often for Advanced Placement™ courses. Additionally, high poverty schools use online learning to supplement their educational programs more often than schools in the lowest poverty areas (National Center for Education Statistics, 2008).

While these are typical uses for online learning, looking beyond the obvious uses may have benefits for students. In a survey of users of K-12 online courses who subsequently attended college, nearly all of the students pointed to their online learning experiences as preparing them to be more independent, responsible, and self-disciplined in their post-secondary studies (Kirby, Sharpe, Bourgeois, & Greene, 2010). Some students also reported virtual

education helped them develop better organization skills. Still others reported their communication skills were much improved by taking online classes (Kirby et al., 2010).

Type of Online Students

Understanding the current generation of students may provide insight into the growing population of students who choose to learn online. This generation is currently being called Generation Y, Millennials, The Net Generation, or Net Gen (Black, 2010; Oblinger & Oblinger, 2006; Werth & Werth, 2011). The K-12 students who are in school today have never known life or education without the internet. By the time they have completed their education, most of them will have played video games for twice as much time as they have spent reading (Oblinger & Oblinger, 2006; Prensky, 2001). Net Gens are digitally literate, connected at all times, and looking for immediate answers (Black, 2010). They more often retain images than words, do not read directions, and are more likely to scan than read (Black, 2010; Oblinger & Oblinger, 2006). This has far-reaching implications for how instruction is delivered to students. Net Gens are likely to be attracted to the internet as a learning platform for its immediacy, its emphasis on the visual and its ability to access information about the ever-changing world in which they live. Werth and Werth (2011) note that learners of this generation respond to technology that is integrated into lessons rather than teaching by lecture.

Since Net Gens prefer manipulating variables using technology, online science labs are becoming a popular option for these students (Oblinger & Oblinger, 2006). In one recent study, Israeli high school chemistry students using internet tools, academically outperformed the control group who were instructed using traditional methods (Frailich, Kesner, & Hofstein, 2007). Additionally, students who used web tools found a higher relevance in studying

chemistry, increasing their motivation and improving overall perceptions about the subject than did other students using more traditional methods (Fralich et al., 2007).

Prensky (2001) coined the phrases “Digital Natives” and “Digital Immigrants” to differentiate between this current generation and their teachers and parents. He asserts that the current education system must change to fit the needs of the students who speak a different language because they have been brought up in a world surrounded by technology. Prensky (2001) advocates updating methodology in the classroom to include discovery learning through game-based curriculum design. This assertion does not come without critics. Barbour (2009) wrote that many who are creating the terms about this generation and asserting its characteristics are doing so with little or no research to support it. Strong language used by Prensky, calling digital immigrants who do not make every learning experience digital “dumb (and lazy),” is negative and divisive (Barbour, 2009).

Keeping in mind the characteristics of the population of learners in this generation, all types of students are choosing to learn in the virtual environment. Nearly every population observed in a traditional brick and mortar school can be found taking an online class through a course provider or by attending a virtual school. For example, iNACOL studied at-risk students and ways that virtual school programs worked to identify this population (Archambault et al., 2010). They found half of the virtual schools across the nation reported they have at-risk populations of at least 50% (Archambault et al., 2010). In another study, researchers compared the use of virtual algebra classes in inner-city districts that might not be able to offer algebra instruction to students prior to high school, juxtaposed with face-to-face learners in a traditional high school algebra course (Hughes, McLeod, Brown, Maeda, & Choi, 2007). Only 25% of the students in the virtual classes reported their intentions to go to college after high school. In the

traditional setting, 75% of the students reported their expectation to go on to post-secondary education (Hughes et al., 2007). In the same way that brick and mortar public schools across the U.S. have varied populations of students with a broad range of problems and goals, so do the fully-online, virtual public schools, as well.

Horn and Chen (1997) list potential risk factors for struggling or dropping out of school. Some of those listed include low socioeconomic status, being from a single-parent household, changing schools, earning C's or lower on report cards, or being retained in elementary school. While in the past students who enrolled in online courses often did so because the advanced courses they were looking for were not offered at their school, today more at-risk students are enrolling in an online learning environment (Cavanaugh et al., 2009; Rice, 2009).

Students with special needs are a significant population in American public schools, and online schools are no exception. In a forum on the issues on special education issues in the virtual environment, iNACOL listed multiple reasons parents of students with special needs choose an online program for their students (Muller, 2010). These included the option to individualize content pacing, increased one-on-one instruction and parental involvement, allowances for the use of varied assistive technology, and more flexibility over the way the school is structured (Archambault et al., 2010; Cavanaugh, Repetto, Wayer, & Spitler, 2013; Muller, 2010; Repetto, Cavanaugh, Wayer, & Feng, 2010).

Though not traditionally considered at-risk, gifted learners have been well served attending school in the online learning environment. In a survey given to students in grades three through twelve who attend a university sponsored virtual program for advanced learners, students reported virtual education has the flexibility that they enjoy and the ability for self-pacing (Thomson, 2010a). Advanced learners are often interested in differentiated curricula

which allow them to show mastery of a concept and move on to other concepts (Thomson, 2010a; Wallace, 2009). In another study conducted in an online course program provided by Johns Hopkins University for advanced learners, researchers noted online education provided experiences that neither the traditional school nor parents could provide. Students enjoyed being able to access experts in subjects around the country or the globe to enhance their learning on specific subjects (Wallace, 2009).

Understanding Student Success in the Online Learning Environment

Many students who take coursework in the online learning environment are already at risk due to life circumstances or prior academic failure (Archambault et al., 2010; Rice, 2009). Morabito (2011) posits that students elect to attend asynchronous online schools for four general reasons. Students report they did not like the setting or structure of the traditional high school or they felt the need for more flexible schedules. They also noted they had prior issues with the culture of the school most recently attended, or they were seeking individualized instruction (Morabito, 2011). Stodel, Thompson, and MacDonald (2006) assert, "Learners need to carefully assess why they have chosen to learn online rather than F2F [face-to-face] and determine whether they are ready and willing to adjust to learn in this new type of environment that is fundamentally different from a F2F setting" (p. 15).

Many studies describe the characteristics of online learners (Artino, 2008; Bressler, Bressler, & Bressler, 2010; Colorado & Eberle, 2010; Liu & Cavanaugh, 2011; Rice, 2006; Roblyer & Marshall, 2002; Ronsisvalle & Watkins, 2005). The chronological age of learners in the online environment is often used as an indicator of success. Multiple studies note that older learners outperform younger students in the virtual setting (Artino, 2008; Bressler et al., 2010; Hughes et al., 2007; US Department of Education, 2009).

The U.S. Department of Education (2009) notes that few studies exist that include K-12 learners. Forty-four of the 51 studies selected for use in the meta-analysis published in 2009 used conclusions applied to the K-12 setting drawn from post-secondary learners. Cavanaugh, Barbour, and Clark (2009) echo these findings stating that a good number of research citing characteristics of the most successful students in an online environment involve adult learners. Artino (2008) asserts that younger learners are more likely to use easy-to-attain strategies rather than to think systematically about learning. Schools and teachers working with younger students should offer differentiated support, immediate feedback, organized expectations, and courses designed to be responsive to younger learners' development and cognitive stages to help increase success (Artino, 2008; Cavanaugh, Gillan, Kromrey, Hess, & Blomeyer, 2004). Younger learners need to be taught ways to be autonomous in the online setting (Cavanaugh et al., 2004). Other results show that virtual students are often non-traditional, even in K-12 settings, with a larger variance in age than their brick and mortar counterparts (Hughes et al., 2007). The age of the learner in the online environment should be considered when looking to improve academic success.

Familial factors are shown to influence academic success online. For school-aged children, qualifying for free and/or reduced lunch is an indicator of poverty in America. Both online and traditional school research show that socioeconomic status as defined by free and reduced lunch, affects student success in school (Catsambis, 2011; Fan & Williams, 2010; Feng & Cavanaugh, 2011; Liu & Cavanaugh, 2011; Neild, Stoner-Eby, & Furstenberg, 2008). In a recent study by Liu and Cavanaugh (2011), researchers found that students who qualified for free and reduced lunch were significantly less successful in their online courses than peers who did not live in poverty. Feng and Cavanaugh (2011) demonstrated that free or reduced lunch

qualification negatively affected the end-of-course exam scores of high school online Biology students.

Another familial factor affecting student success is marital status of parents (Ferrell, 2009; Neild, Stoner-Eby, & Furstenberg, 2008, Sang & Kushner, 2008). Online research is silent on this issue, but traditional research shows students from single-parent homes do not do as well academically as their counterparts from two-parent homes. Sang and Kurshner (2008) identify gender specific family groups (fathers living with sons, mothers with daughters, fathers with daughters, mothers with sons) and found no differences among the groups in all but father-daughter households. Daughters living with their fathers in a single-parent setting had better academic performance than any other combination. While research shows that marital status negatively affects student performance, Neild, Stoner-Eby, and Furstenberg (2008) found there was not a higher instance of dropping out of school due to parental marital status. Using descriptive statistics to compare means in one East St. Louis middle school, students from single-parent families had more absences and tardies than their peers from families with married parents. This study found no significant difference in grade point average or the number of suspensions between the groups (Ferrell, 2009). Familial factors can affect student success in the online learning environment.

Self-efficacy and self-motivation are quoted in multiple studies as factors influencing student success in the online environment (Artino, 2008; Bressler et al., 2010; Duncan & Barnett, 2009; Picciano & Seaman, 2010; Rice, 2006; Rice, 2009; Roblyer & Marshall, 2002; Ronsisvalle & Watkins, 2005; Thomson, 2010a). Bressler et al. (2010) noted the positive relationship between increased self-efficacy and the number of online courses taken previously when studying community college populations taking at least one online course. This could be viewed

as students feeling more confident because they have taken multiple online courses, or conversely, they are confident enough in their abilities to take multiple online courses. Of all of the studies that include self-efficacy as an indication of success, the study by Kirby et al. (2010) is unique in design. The researchers followed high school students who had attended school online after graduation. This mixed-methods study determined that students who had successfully completed some of their education through distance learning were highly likely to attend colleges and universities (Kirby et al., 2010). In semi-structured interviews, nearly all of the students pointed to their online learning experiences as preparing them to be more independent, responsible, and self-disciplined in their post-secondary studies. Students also noted that online learning helped them develop better organization and communication skills which were useful in college (Kirby et al., 2010).

Another often cited characteristic of successful online learners centers on the student's ability to effectively utilize technology and the organization of the technology provided by online schools (Bull, & McCormick, 2011; Ice, Curtis, Phillips, & Wells, 2007; Kerr, 2009; Liu & Cavanaugh, 2011; Reeder, 2010; Rice, 2006; Roblyer & Marshall, 2002; Roblyer, Davis, Mills, Marshall, & Pape, 2008). Technology is connected with much of teaching and learning online and thus is a multi-faceted factor for success. Some scholars note that a student's ability to use technology effectively can be a factor in success or failure (Roblyer & Marshall, 2002; Roblyer et al., 2008). Reeder (2010) found that proper access to technology is vital to student success in an online environment. Organization of the Learning Management System (LMS) is also noted (Kerr, 2009, Liu & Cavanaugh, 2011). Liu and Cavanaugh (2011) and Roblyer et al. (2008) found a significant variable related to increased academic achievement was the amount of time spent on the LMS. Researchers suggest if time spent on the LMS is the most statistically

significant variable to student success, then the LMS needs to be effectively organized for students (Liu & Cavanaugh, 2011). Unreliable technology is often a barrier to students in the online learning environment (Clark, 2001; Hannum et al., 2009; Kerr, 2009; Roblyer & Marshall, 2002). Technology should be transparent to students rather than a barrier to their learning.

Student Engagement for Increased Success

Virtual schools are identical to brick and mortar schools as both look for ways to support the success of all students. Research directs practitioners to factors including teacher presence, student engagement, student feedback, course design, peer collaboration, and student support as ways to increase student success (Blanchette, 2009; Boling & Beatty, 2010; Fralinger & Owens, 2009; Kerr, 2009; Mandernach 2009; Reeder, 2010; Stodel et al., 2006) .

Mandernach (2009) notes, "Generalizing the findings from traditional classrooms, one would assume that enhanced student engagement in the online classroom should increase interest and enthusiasm for the course, which, in turn, impacts retention, learning, and satisfaction" (p. 4). Engaging students in learning, especially if it is at anytime and anyplace, is vital to their success (Dixson, 2010; Fralinger & Owens, 2009; Hung & Zhang, 2008).

One way to engage students is by flipping the classroom. Flipping the classroom is an idea growing in popularity in America today. In 2007, two Colorado high school teachers committed to conducting hands on activities and inquiry-based learning during their regular class time by pre-recording their lectures and streaming them to students to watch at an alternate time (Noonoo, 2012). Flipping the classroom allows teachers and students to spend their class time in more engaging activities. In a study conducted at University of California-Berkley where lecturers posted their lectures on YouTube™ prior to class so they could engage in other synchronous activities during their scheduled class sessions, students reported they were more

engaged in the material (Fralinger & Owens, 2009). Based on the end of course survey results, 95% of students reported they better synthesized the material found on YouTube™, and 93% of them found course materials more interesting (Fralinger & Owens, 2009). In this case, instructors were using technology to pre-teach students, increasing synchronous learning time for engaging activities. Flipping the classroom has certain opponents as well. Some educators are skeptical flipping can be effective as teachers are still lecturing via video, and it is difficult to determine the level of participation or understanding of the student (Deubel, 2013). Opponents of this modality of instruction cite the need for videos to be coupled with advanced organizers and/or activities to engage students in higher level thinking (Duebel, 2013).

Teachers in the online learning environment should spend synchronous class time engaging students in activities they would have a difficult time completing individually. One way students can increase their engagement is by interacting with their peers (Dickey, 2004; Dixson, 2010; Liu & Cavanaugh, 2011). Classroom discussion boards are one way to augment student engagement by increasing communication (Blanchette, 2009; Boling & Beatty, 2010; Kerr, 2009; Reeder, 2010; Stodel et al., 2006). When writing about using discussions with younger learners, Artino (2008) cautions instructors to be very involved moderators. Teacher guidance is crucial to younger learners as they may not have well-developed opinions or thoughts on topics. Instructors are updating the traditional classroom discussion boards with blogs or micro blogs such as Twitter™ to more fully engage students in classroom discussion. A recent study explored the use of Twitter™ to synthesize character development throughout literature in 140 characters or less (McWilliams, Hickey, Hines, Conner, & Bishop, 2011). The instructors in this study had students tweet as their assigned characters while they were reading a play. One of the themes that emerged from this research was that participation increased when it

was vital that all participated to make the experience successful (McWilliams et al., 2011). College students in another study utilizing Twitter™ enjoyed the enhanced interaction, but wanted more freedom to interact socially as well as academically (Wakefield, Warren, & Alsobrook, 2011).

Another growing use of synchronous time is engaging students in project-based learning (Artino, 2008; Duncan & Barnett, 2009; Herring, 2004; Kerr, 2009). Students in one study, which required the completion of a culminating group project, reported that they were highly satisfied when they finished (Duncan & Barnett, 2009). They appreciated the challenge of the project and found it enjoyable, as well. The use of real-world problems and project-based learning forces students to collaborate and rely on each other to enhance the learning experience (Kerr, 2009). Just as these techniques are increasing in the brick and mortar classroom, online learning environments can decrease the distance between teacher and student by employing engaging strategies such as these, too.

Multiple studies provide additional suggestions for increasing student engagement in the online environment (Blanchette, 2009; Kerr, 2009; Maor, 2008; Rosa & Lermann, 2011). Providing students with choices can aid engagement. Kerr (2009) advocates giving choice to students about discussion board topics and input on some learning goals and objectives. Rosa and Lerman (2011) solicit student ideas for learning activities or roles and suggest virtual simulations. Giving leadership roles to students also increases engagement in the online learning environment. Peer mentoring can be an effective way to give leadership and help a student at risk of failure (Kerr, 2009). Online educators have used peer review and student-created rubrics to engage students in the process of assessment and assessing their own work (Duncan & Barnett, 2009). Student moderators during synchronous or asynchronous discussions will also increase

student involvement and increase ownership of their own learning (Blanchette, 2009; Maor, 2008).

Feedback to Increase Student Achievement

Feedback is vitally important in the online learning environment. Teachers are most like their brick-and-mortar counterparts when they are critiquing or giving feedback. In one study, students reported that not having a teacher in front of them and not receiving answers instantaneously to questions were both challenging (Thomson, 2010a). Boling and Beatty (2010) found student-to-student feedback often increased engagement in an online course. Nonetheless, the importance of instructor feedback is highlighted as critical to student success (Blanchette, 2009; Boling & Beatty, 2010; Dzakiria, 2008).

Increased feedback from teachers can have many benefits. Using exemplars and showcasing student work encourages the student who has done a good job and also shows other students what quality work should look like (Kerr, 2009). Boling and Beatty (2010) sought to increase achievement in writing by increasing feedback. The teacher in an 11th grade composition course posted student exemplars in addition to her own writing as examples on the open-source Learning Management System, Moodle™. As the students were able to see teacher comments on peer writing, they began to mimic that feedback together with their own postings. In this classroom, student feedback became more substantive and analytical over time as their comfort level with the subject matter grew. After reviewing the student-to-student and teacher-to-student feedback, Boling and Beatty (2010) were able to see evidence through student writing samples that student proficiency had increased. Students used feedback from others to revise and improve their compositions (Boling & Beatty, 2010). Formative assessment in the synchronous

environment can be challenging, but it can increase student achievement through increased engagement.

Using Course Design to Increase Student Success

Some components of course design can encourage students to be more successful in web-based courses. The curriculum in virtual schools often lends itself to a self-paced option for students. This helps both at-risk students and students with disabilities as they are more often able to master one concept before moving to the next (Repetto et al., 2010). This option increases engagement for gifted students as well; they can study topics thoroughly before moving to another one or progress through the material at a more rapid pace if mastery has occurred (Thomson, 2010b; Wallace, 2009). Virtual schools can create individualized learning pathways for students and employ more mastery-based learning than traditional brick and mortar schools (Archambault et al., 2010; Repetto et al., 2010). This customized education aids students at both ends of the spectrum.

When designing courses for struggling learners and students identified with disabilities, course designers must make courses accessible for the varied needs of students. Course designers work to ensure they design courses with enough visual images to make content accessible to students with cognitive impairments, but with enough text so that screen reading technology can effectively accommodate other diverse needs (Keeler & Horney, 2007).

Evidence shows when learners have some control over their learning environment they are more successful (Cavanaugh et al., 2013; Kerr, 2009; Rosa & Lerman, 2011; Thomson, 2010a; US Department of Education, 2009). Many online courses have the ability to give students an increased level of control. More online courses are moving toward individualized learning plans and concept mastery. Courses that can assess a student and dynamically provide

content that fits his/her learning needs are considered mastery based. This type of technology is called Intelligent Adaptive Learning (Dreambox Learning, 2012). According to a white paper commissioned by Project Tomorrow (Dreambox Learning, 2012), intelligent adaptive learning is:

> "a systematic way for students to master skills and knowledge levels at a pace that is especially tailored to their strengths and weaknesses, and for teachers to have unprecedented visibility into data on student achievement to inform their daily practices" (p. 11).

School leaders hope to leverage this technology to provide instruction at the student level and individualize paths of instruction suited to the needs of each learner (Dreambox Learning, 2012). The information published about this technology is commissioned by corporations endeavoring to market the products and are not peer reviewed. More research is needed in this enhanced online learning environment to make generalizations to a fully online educational environment (Repetto, 2010; US Department of Education, 2009).

Teachers in the online environment often do not create their own curricula. Courses are created by designers at curriculum companies, purchased by schools to be used in much the same way that they are delivered, asynchronously. However, in pre-packaged courses, teachers can still have a positive effect utilizing technology to bridge the distance to the students (Bull & McCormick, 2011; Fralinger & Owens, 2009; Ice et al., 2007; Mandernach, 2009) Teachers should endeavor to organize the courses logically and systematically, so students know what is expected of them on the first day of class (Reeder, 2010). Course design and organization can positively impact the experience for students in an online learning environment.

Building a Community of Learners for Support and Success

Building a community of learners helps online students engage. They feel safe and included. Researchers have observed that students who are part of an online community in which there is interaction and a supportive adult find increased success (Edwards, Perry & Janzen, 2011; Kerr, 2009; Ronsisvalle & Watkins, 2005; Stodel et al., 2006). Some students feel isolated in the online environment (Dickey, 2004). Students need a secure, flexible, and facilitated learning support to be successful online (Dzakiria, 2008). Ronsisvalle & Watkins (2005) note, "For students in online K-12 schools, the Internet is used as both instructional and social support tool to create environments where students can learn, interact, and develop the necessary skills for employment and citizenship…" (p. 119). Interaction in a community of learners can be effective in the online learning environment.

Teachers can be a supportive force in student success in an online environment (Black, 2009; Repetto et al., 2010; Roblyer & Marshall, 2002). Teachers should attempt to build relationships with individual students by tailoring course information to fit the interests of those students, differentiating instruction such as detailed assignment rubrics and directions, and getting to know students as individuals (Artino, 2008; Diaz & Entonado, 2009; Thomson, 2010b). When students feel their instructors value them as individuals, they are more willing to work together to solve academic and technical problems and feel they belong in the online learning environment (Edwards et al., 2011). Creating an online community is not easy and takes participation and interaction between student and student as well as a student and teacher (Kerr, 2009; Ronsisvalle & Watkins, 2005). Kerr (2009) encourages instructors to increase interaction by choosing engaging and relevant topics for student learning.

Using Technology to Increase Teacher Presence

Technology continues to revolutionize online instruction and teacher-student interaction in various ways. Distance educators are using technology to cross the distance between instructor and students. Ice et al. (2007) discuss how a professor began to send audio files rather than written comments to online students when providing feedback on their papers. Both the interviews and the survey data indicated students felt positive about this type of feedback. Students noted they enjoyed the ability to understand the nuances in the professor's tone and words (Ice et al., 2007). In addition, students were more involved in the course, understood the material more effectively with audio feedback, and had a more positive opinion of the professor (Ice et al., 2007). Teachers have been using email or instant messaging with students, as well as web-based tools like Elluminate™ (now Blackboard Collaborate™) to hold synchronous classes to increase teacher presence in student learning (Murphy & Rodriquez-Manzanares, 2008).

A study involving pre-algebra instruction at a community college and the instructor's use of text messaging shows increased teacher presence using smart phone technology (Bull & McCormick, 2011). The instructor and researchers sent out text messages multiple times each week to students, reminding them of assignments, tests and quizzes, and giving additional practice problems based on the concepts studied that week. Researchers also sent out real world problems for students to solve and gave formulas for them to consider before they returned to class. The response was positive, with some students noting they enjoyed receiving reminders from the instructor which kept them focused between class sessions. Students also thought they were more prepared because of the reminders (Bull & McCormick, 2011).

YouTube™ and other 21st century and Web 2.0 tools, being utilized instructionally to provide further feedback, encourage student and instructor interaction (Boling & Beatty, 2010;

Dickey, 2004; Frailinger & Owens, 2009; Reeder, 2010). Technology and social media are increasing communication between stakeholders in the online learning environment.

Teaching in Online Learning Environments

Teachers in the online environments are not vastly different from their traditional counterparts. Many have multiple years of teaching experience (both in the traditional and online classrooms) and a higher incidence of graduate degrees than their brick and mortar counterparts. Archambault and Crippen (2009) found 62% of teachers who were teaching online had at least a master's degree, whereas only 41% of brick and mortar teachers possessed a graduate degree.

While the teaching forces in the brick and mortar and virtual schools are comparable in many ways, teachers in the online classroom must use different skills to affect students in the online environment. Duncan and Barnett (2009) encapsulate the role of the online educator and state,

"…the skills for effective online teaching extend beyond the competencies required for successful teaching in the traditional classroom, and include mastering the technology and tools of the online delivery platform, heightened communication skills, and good time management because students and teachers can be online at any time" (p. 358). Diaz and Entonado (2009) note the online teacher must be familiar with course material well in advance in order to determine how to organize and present it. The experts in online education interviewed for the same study mentioned learning modules should be structured so students can learn autonomously, with the teacher being a facilitator of active student learning. Interviews with Canadian distance educators found online teachers must make decisions about how to effectively convey material in new and different ways without having students in the same room at the same time (Murphy, Rodriquez-Manzanares, & Barbour, 2011).

The level of interaction between teacher and student can be determined by the lesson itself. Some lessons are more effective with synchronous interaction while others are more effective asynchronously. Averinou and Andersson (2007) found that like their counterparts in traditional brick and mortar classrooms, teachers in the online learning environment believed their job was to help students find their own love of learning, changing their methods and practices to accomplish that task. In a survey of 495 Virtual High School (VHS) teachers, who taught part time for VHS and full time in a brick and mortar setting, 75% reported teaching online had positively impacted their traditional brick and mortar classrooms (Lowe, 2005). Teachers reported they redesigned lessons to make directions more understandable, added traditional online elements such as peer reviews and asynchronous discussion boards to traditional classroom activities, and tried to keep lecturing to a minimum. The open-ended responses at the conclusion of the survey indicated that teachers felt their online teaching altered their face-to-face instruction most in classroom participation, independent student learning, reflection, and higher-order questioning (Lowe, 2005).

In the early days of distance education, Moore (1993) put the theory of Transactional Distance forth to define distance education as "…not simply a geographic separation of learners and teachers, but, more importantly, is a pedagogical concept. It is a concept describing the universe of teacher-learner relationships that exist when learners and instructors are separated by space and/or by time" (p. 22). While the relationship between teacher and student in an online learning environment is different from a brick and mortar school, it must be cultivated to increase student engagement and support.

Parental Involvement in the Online Learning Environment

Having a parent or caring adult to support and guide the student is essential to success in any academic setting, but in a full-time online environment, it is vital. Multiple studies addressing student success in the online environment list parental involvement or adult mentoring as an important factor of that success (Archambault et al., 2010; Black, 2009; De la Varre et al., 2010; Feng & Cavanaugh, 2011; Liu et al., 2010; Liu & Cavanaugh, 2011; Repetto, Cavanaugh, Wayer, & Feng, 2010; Roblyer & Marshall, 2002). Research in brick and mortar settings is consistent and suggests parental aspirations for their children are related to future student success (Catsambis, 2001; Chen & Gregory, 2009; Fan & Williams, 2010; Mo & Singh, 2008). Scholars suggest that parents who talk with their children about future expectations positively affect the academic success of those students. The range of participants was interesting to note as researchers studied students who were at-risk, a national study of 8th graders and high school seniors, and information from the National Longitudinal Data on Adolescent Health Wave 1 (collected in 1994-1995) for grades seven through 12 finding similar results. Parental aspirations have positive statistical relationships with emotional and cognitive engagement (Chen & Gregory, 2010; Fan & Williams, 2010). Catsambis (2001) suggests parents should encourage children to prepare for college, to take college entrance exams, and to apply for post-secondary opportunities. Fan and Williams (2010) also found a strong correlation for parental aspirations. They suggest high school students who knew their parents were engaged in their education exhibited increased confidence in their own abilities and were more interested in school. At-risk students had similar outcomes in a survey to determine what type of parental involvement was most effective according to the participants (Chen & Gregory, 2009). Along with parental

aspirations, students reported parental expectations of grade point average or academic performance were also significantly related to academic success.

Another aspect of parental involvement found to be positively related to student achievement was parental participation in school activities (Fan & Williams, 2010; Mo & Singh, 2008). Both of these studies indicated parents attending school functions like athletic events or concerts helped students remain engaged in school. Chen and Gregory found high school students would prefer their parents to support them from afar (2009). Researchers make the assertion teenagers would like their parents to be involved by expectation rather than by monitoring their homework or serving with the parent teacher association. The authors further explain this may be related to students asserting their autonomy in this stage of their lives.

Multiple studies have also found negative correlations between parental involvement and student achievement. Chen and Gregory (2009) and Fan and Williams (2010) both indicate parent communication with the school has a negative relationship according to student perceptions. Both authors hypothesize the reason for this may be that by the time parents communicate with the school, students are in trouble due to being behind in their academic performance or because of disciplinary issues. The consequences of the communication usually result in punishment for the student, so they perceive it as negative.

Black (2009) surveyed parents and students at Florida Virtual School to determine the effect of parental involvement in the online setting. This study found there was a statistically significant relationship between parental instruction and reinforcement. Parental reinforcement or encouragement can increase a student's grade by 0.583 (Black, 2009). Parental instruction had a negative relationship and impact on student achievement, lowering the grade by 0.61. This could be attributed to parents attempting to engage their students in difficult tasks or seeking to

help them persist when learning is difficult. This study does have limitations. Researchers only received a nine percent response rate on a survey of over 10,000 parents. Similar negative parent-school relationships were found in this study as well. Black (2009) found that by the time parents got involved and communicated with the school, students felt the instruction that resulted was negative. This is consistent with findings from non-online school research (Chen & Gregory, 2009; Fan & Williams, 2010). Black (2009) encourages further study of parental involvement in the online setting using qualitative methods to understand the roles of parents.

Students are looking for connections with adults (Chen & Gregory, 2009; De la Varre et al., 2010; Mo & Singh, 2008). Students want parents to be involved at some level and show interest in what is going on in their lives. In Chen and Gregory (2009), researchers gave a survey to at-risk ninth grade students twice during the school year (fall and spring). As the perception of parental involvement grew from fall to spring, so did student perception of the amount their teachers cared for them (Chen & Gregory, 2009).

There are barriers to parent-teacher involvement in the online environment. Liu et al. (2010) caution readers against making too many assumptions about online school parental involvement using traditional school parental involvement research. They state variables such as lack of research, proximity issues, and a differing environment make generalizations difficult. Another barrier to increased parent-teacher involvement in the online environment is high student teacher ratios (Black, 2009; Hawkins et al., 2011; Zhao, Lei, Yan, Lai, & Tan, 2005). While policy makers and educational reformers extol this as value-added education, instructors who are available to students are necessary to the effectiveness of any online learning environment (K12, Inc., 2012; Zhao, 2005). Online schools having less interaction are not as effective as learning environments with more interaction (Zhao et al., 2005). Black (2009) claims

if teachers increase their contact with parents, and further increase their involvement, student achievement may increase. High student-teacher ratios sometimes make this improbable (Black, 2009; Hawkins et al., 2011).

Epstein's Model of Parental Involvement

Due to the lack of research in parental involvement in the online learning environment, traditional school research must be generalized to fit this area. Because of the uniqueness of this learning environment, none of the traditional models of parent involvement fits perfectly. Epstein (2001) gives practitioners a model that can be used to explain the partnership that should exist between home, school and the community.

At the center of Epstein's (2001) model is a Venn diagram with three overlapping spheres representing school, family, and community. External forces determine how much each entity overlaps and how strong one or another is in the relationship. Epstein (2001) defines Force A as the age, grade level and time of the student. Time in this instance refers to both the historical era in which the child lives along with his age and grade level. Forces B, C, and D are the family, school and community philosophies and experiences, respectively (Epstein, 2001). All of these forces have differing levels of influence at various times in the education of a child. The model works most effectively when the forces overlap.

Utilizing this model in a full-time, online learning environment, one would expect to find a greater than average overlap between school and parents, depending on the age of the student. Epstein notes when parents take an active role in the education of their children (Force B) they will have a greater than average overlap between the school and family spheres.

> "When parents maintain or increase interest and involvement in their children's schooling (Force B), they create greater overlap of the family and school spheres than would be

> expected on the average. When teachers make parents part of their regular teacher practice (Force C), they create greater overlap than would typically be expected" (p. 29).

If a parent is educating a kindergartner in the online environment, the amount of parental involvement will be much higher than the parent who has partnered with the online school to educate an eleventh grader. The typical eleventh grader exercises greater control over his education than the typical kindergartener as an eleventh grader is much more independent than a primary student. Also, parents often feel unable to help students with their course work as they get older. Epstein (2001) echoes this sentiment,

> "Time alone (Force A), or the increasing age of the child, does not make parents more knowledgeable about how to help their children with particular school problems…The older the child (after grade 1), the less overlap there is in the two environments, and the less the parent feels able to help the child in school." (Epstein, p. 29-30).

In a full-time, online learning environment, educators and parents should find ways to increase the amount of overlap in those spheres, even with older students.

The internal structure of the model deals with relationships between members of the school, community and family as they communicate with students or with the community at large. For example, there are interactions between school and family which do not directly relate to a particular student, but are announcements about community events or general policies at the school. Then, there are other communications between school and family that directly relate to the individual student and his academic progress. Epstein(2001) states that "children interact with, influence, and are influenced by, their families and especially parents, and by changes in their families and parental behavior that result from the actions of the schools" (p. 31). She also says that students and families influence what happens in the school. When schools and families

create a strong partnership, academic achievement of the child increases (Epstein, 2001). In the full-time, online learning environment, communication between family and school should influence the academic achievement of the student.

To increase parental and community involvement with schools, Epstein identified six types of involvement that schools could cultivate to increase the amount of overlap in the spheres of community, school and family (2001). These six are

1. Parenting
2. Communicating
3. Volunteering
4. Learning at Home
5. Decision Making
6. Collaborating with the Community (p. 43-44).

While some of these fit the online school environment better than others, cultivating those that are relevant could help students be more successful as schools and parents partner together in this endeavor.

Another segment of Epstein's (2001) model that has relevance to a full-time, online learning environment is what she terms "school-like families" and "family-like schools" (p. 32-33). Families who make every experience a learning opportunity are school-like families. They are those who actively engage their children in learning events appropriate for their ability and interest (Epstein, 2001). In the same way, schools where relationship is valued over rigid structure or rules and individual student needs and individual attention is valued can be called family-like schools. In the ideal online learning environment, both would exist.

Conclusion

Online learning environments are not a passing phase in American education but are increasingly gaining acceptance into the pantheon of school choices for students. With rising enrollment and advancing technology, full-time virtual schools are seeking to find the best way to help students gain success in this environment. Many schools have already begun employing highly-qualified teachers, research-based curriculum, and professional development to apply sound pedagogy. Further research is needed to uncover the role of parents in the online learning environment, utilizing their influence to increase achievement for the individual student (Black, 2009; Liu et al., 2010).

Chapter III

Design and Methodology

One of the challenges facing virtual schools is to determine the academic strengths and weaknesses of students in time to intervene. Students often enroll much faster than the records from their former school can follow them. Moreover, without daily synchronous interaction, students may fall behind before they seek assistance or teachers are able to know how to individually meet their unique academic needs. Students who are enrolled at full-time, virtual schools are often seeking an alternative to more traditional school choices and may already be at risk academically (Cavanaugh et al., 2009; Morabito, 2011).

Full-time virtual schools depend on parents to guide students through the organizational difficulties and technological crevasses that can create barriers to student success. A guiding assumption is that the role of the parent of a child in a full-time online program is vital to the academic achievement for the student. Even with that assumption in place and online school programs being built with increasing reliance on parents or other mentors, the research is virtually silent on perceptions of parents about their roles and/or the educational effect of a parent in a full-time, online school setting.

Research Design

The methodology best suited for this study is a complementary, mixed methods study. Greene, Caracelli and Graham (1989) suggest, "…qualitative and quantitative methods are used to measure overlapping but also different facets of a phenomenon, yielding an enriched, elaborated understanding of that phenomenon" (p. 5). Quantitative research is the most effective method for determining the correlation of variables to each other. Qualitative research is the best method to determine the role and impact of parents in the educational success or failure of

students who attend K-12 online schools. Marshall and Rossman (2011) assert "human actions cannot be understood unless the meaning that humans assign to them is understood" (p. 91). The use of a mixed-methods design gives the researcher flexibility in understanding the importance of relationships both from data sets and the words and actions of the participants.

Participants

In this study, participants were parents of students at Online High School (OHS), a full-time, online school in the Western United States. OHS is a charter school authorized by a state chartering entity. It has been a fully operational high school, attracting students from every county in this Western state, for over a decade. The independent school board of OHS contracts with an educational management company to provide management services, curriculum, and technology for students.

Since the advent of the *No Child Left Behind* legislation in the 2000's, increased achievement of all students has been in the forefront of every public school in America (Dee & Jacob, 2011). Virtual schools are no exception. Roblyer et al., (2008) conducted a study in which researchers could predict success or failure of students in a virtual course using a survey of likert-type questions ranging from the use of technology to self-esteem issues. Their research was apparently effective as they were able to correctly predict when a student was going to succeed or fail 95% of the time using the answers given to the questions. The limitations to the research included how most of the responders were classified as Caucasian, had taken an online course previously, and had demonstrated prior academic success (Roblyer et al., 2008).

At OHS, rather than use an instrument that had already been developed, such as that in Roblyer et al., (2008) to try to predict success for incoming students, it would be more effective to query the information already collected by the school seeking possible correlations to future

academic success. In this way, OHS staff may intervene more quickly and work proactively to develop programs of support for students who may struggle at the outset.

As directed by the OHS board of directors, a volunteer group of participants was sought for a series of semi-structured interviews. As part of the research design, it was favorable to find parents of a wide variety of students with diverse experiences in online education. Using an electronic notice and short telephone survey, the pool of volunteers were narrowed to parents of students who are indicative of those who choose to go to school online. There were driven students who chose to school online because they hoped that all of their classmates would be as serious as they were about education. There were students who made poor choices in their former school, either socially or academically. There were students who were fleeing from their former setting due to social anxiety or depression issues. There were students who were too sick to get out of bed each day, needed naps after a few hours work, and this was impossible in the traditional school. There were students who researched OHS on their own, determined that it was a good fit for their learning style and begged their parents to enroll them. There were others who came unwillingly, but parents were hoping for this school to be the one that made the difference in motivation or participation for their students.

Many of my participants lived in places far away from my office or my home. When that was the case, participants were interviewed using Blackboard Collaborate™ or using the speaker phone while recording to my computer with Audacity™(Audacity, 2013; Blackboard Collaborate, 2013). While this might seem unnatural or have the possibility of being stilted, all of the participants had experience with online learning and found it natural and convenient. To ease their minds and introduce myself, a visual display was created using Microsoft PowerPoint™

which included personal information about me as the researcher and the informed consent for us to review together.

To make any study more effective, researchers must protect all participants and not only ensure respect for individuals but also work within the structure and confines of laws that work to protect individual privacy (Marshall & Rossman, 2011). The Family Educational Rights and Privacy Act (FERPA) (20 U. S. C. § 1232g; 34 CFR Part 99) has outlined the acceptable use of student records when doing research in any educational setting according to § 99.31(a)(3). The agreement for research in the educational setting should reflect the purpose, scope, and length of the study along with the specific information to be disclosed. Schools allowing research in the educational setting should also require the researcher to protect student data from sources that do not have a legitimate interest in those records, as well as require the researcher to return or destroy any records when the study has been completed (U.S. Department of Education, 2011). Schools can release to public entities, upon request, appropriate directory information as defined by the local school policies.

For the first part of the study, aggregate student academic data was requested from the OHS administration in order to look for correlations between the following variables:

- grade level
- gender
- socioeconomic status
- family configuration
- educational level of the parent
- previous experience with online learning

Data was selected from academic years 2010-2012. Based upon these criteria, 350 records of students who were enrolled at OHS between the fall of 2010 and the spring of 2012 were selected randomly for data analysis.

Additionally, eight parents of current or former OHS students were selected to participate in semi-structured interviews to determine parent perceptions about their roles in the success or failure of their online students. Four parents of students who had been at OHS or Online Elementary School (OHS' sister school) for two to five years were selected, having shown success in the online setting with consistent attendance and academic performance. Four additional parents were selected whose students are no longer attending OHS due to lack of academic success or non-attendance. Each parent participated in two interviews, for a total of 16 interviews.

The process of selecting interview candidates began with a purposeful sample. Creswell (2008) encourages researchers to choose sites or populations which will increase understanding of the research problem. Online High School and parents who have experience with students learning online fit the criteria. The request was made and granted to have access to public directory information for parents at both OHS and the elementary and middle schools that are associated with OHS, from school years 2010-2011, 2011-2012 and 2012-13. The number of families who chose to allow their contact information in the public directories from those years totaled 4, 411.When all students in OHS' sister elementary school were removed, the list totaled 1,030 families who had experience with high school. The information provided included first and last names, addresses (including city and zip code), telephone numbers, and e-mail addresses. Using the e-mail addresses from the directory, an electronic notice was created to gather a purposeful sample, recruit volunteers for a follow-up telephone survey, and determine if

volunteers would be viable candidates for the criteria set forth in this study (see Appendix E). Snowball sampling was also employed as interview participants shared names of friends or colleagues who had attended OHS and were either successful or not successful during the period of enrollment.

As part of preparing to be an ethical researcher, training was completed, and certification for Human Research through the National Institute of Health was acquired (see Appendix B). Permission from the Superintendent of OHS and the OHS Board of Directors allowed the use of student data and contact of current and former parents using the public directory information (see Appendix C). Consent was also sought and obtained from the Human Research Review Committee (HRRC) at Northwest Nazarene University prior to commencing this study (see Appendix A).

Data Collection

Aggregate reports were generated using all high school students from October 1, 2010 through spring 2012, and a list of possible students was generated. One of the realities of school choice is students often register at a school and then elect to go elsewhere, never attending the first day of school. For that reason, in conjunction with OHS' registrar, we determined to use students who were enrolled after October 1 of each school year. From this population, the OHS registrar selected a random sample of 350 students was selected using Microsoft Excel. This aggregate report included the following variables: grade level, gender, socioeconomic status, family configuration, educational level of the parent, and previous experience with online learning. All identifying student information was removed by OHS' registrar prior to submitting the data for research. Having the data provided in this manner made the data truly anonymous. The data was stored on a protected USB drive in my home office. The data was also saved on a

backup USB device, and both devices were encrypted for security with the password being known only to me. In compliance with the Federalwide Assurance Code, data from this study will be kept for three years, after which all data will be destroyed (45 CRF 46.117).

With the aggregate data, associations between variables were analyzed to find correlations between the variables of grade level, gender, socioeconomic status, family configuration, educational level of the parent, and previous experience with online learning. Correlations provide information regarding how variables relate to each other (Tanner, 2012). Using Pearson's Correlation to find statistically significant relationships in the sample of OHS students could help school personnel to anticipate possible pitfalls and provide future OHS students with an improved educational experience. In this case, using student achievement as the independent variable, as measured by Grade Point Average (GPA), analysis using IBM SPSS Statistical Software Version 20 was used to determine if variables will have a statistically significant relationship and possibly could be future predictors of student success.

To solicit a volunteer sample of parents willing to engage in a short telephone follow-up recruitment call, an electronic notice was sent to 1,030 potential participants in September 2012 using Qualtrics, an online survey tool (see Appendix D). The initial electronic notice yielded 54 responses in which potential participants shared their contact information and agreed to a follow-up phone call. Two more responses were received, but they were blank and could not be used in this study. In late September 2012, a follow up reminder was sent via Qualtrics to those who had not yet responded to the electronic notice. Another 19 families responded to the survey at that time, for a total of 72 complete responses. Another 18 families started the survey and did not complete it. While that is only a seven percent response rate, the notice allowed me to find all

eight volunteer participants for this study. After gathering 90 responses, the Qualtrics notice was closed so no additional participants could volunteer.

Data gathered from that notice prompted a telephone calling campaign to recruit participants for the qualitative portion of this study. During this telephone call, a verbatim script was used to find possible participants (see Appendix E). All of the questions on this short telephone survey were designed to determine the success of the student while they attended OHS. Parents were asked to share the length of time students attended OHS. Data was also collected on parent's level of education and marital status. Information was solicited from parents about student GPA, and if the student was behind, ahead or on track to graduate before and after attending OHS. Other data collected determined what the student was currently doing for school; if the student had graduated, dropped out of school, or were currently attending. All participants were asked if they received an internet subsidy while at OHS, which is indicative of socioeconomic status.

All of these questions and any ancillary information that the parent chose to share during the telephone interview, allowed me to determine the likelihood that a student was successful or not while they attended OHS. Additionally, it allowed me to get to know some of my participants and gave a small indication if they might be willing to talk in a longer semi-structured interview.

Prior to conducting the first round of interviews, interview questions were piloted with the parents of three students who had experience with online education that are also faculty members or family members. Feedback was solicited from pilot participants about the interview process and the questions. Changes were made to the initial interview questions based on feedback from the pilot. In order to determine the best environment for conducting the interviews in the research phase of this study, interviews during the pilot phase were conducted using three

methods: 1) Blackboard Collaborate™ (2013), 2) recording an audio file on Audacity™ (2013), a free computer application, during a telephone interview, 3) and face-to-face at public venues, also recording on Audacity™ (2013). All of the pilot participants and their students were very familiar to me. Reflection on the pilot study brought the realization that I did not ask all of the questions scheduled in the interview since I felt like I already knew the answers. Some of the pilot participants were family members or lifelong friends who had experience with online learning. Knowing those participants intimately, there was no need to spend time getting to know the participants or their students. With that in mind, one of my pilot participants was asked to recommend a family of strangers who would be willing to be interviewed, as part of the pilot study. In this way, the structure, length and content of the interview were improved to reflect the scope of the study participants accurately. This fourth pilot interview was a true reflection of the experience to come with data collection.

From the pilot study, a determination was made to choose families of students at OHS that were unfamiliar to the researcher. Marshall and Rossman (2011) encourage researchers to recognize and bracket biases to protect the integrity of the study. It was at this point in the process where the dual roles of researcher and administrator could potentially collide. Reflection during the pilot revealed that interviewing strangers rather than acquaintances or friends is more effective and helps to minimize personal bias. As an academic administrator, some of the families may expect a higher level of student knowledge and may not be as candid in their responses as with someone who was less familiar. Recognizing the bias that academic administrators should have intimate knowledge of students helped to qualify or disqualify participants from this study. As a researcher, awareness of bias and awareness of my own comfort level might cause anticipation of the participant responses rather than listening for

answers. Participants were selected for the study, volunteers were contacted, but several disqualified for a longer interview as I personally recognized the parent and/or student names. This was to ensure researcher objectivity and increased knowledge of the experiences of the participants. Also, the goal was to endeavor not to taint the data collection with my own bias or experience as an administrator.

Semi-structured interviews were scheduled for the fall of 2012. All participants signed an informed consent agreeing to participate in this study, be audio recorded, and allow the use of direct quotations in the study (see Appendix F). In both electronic and face-to-face interviews, all parts of the informed consent were explained to each participant. During electronic interviews, Microsoft PowerPoint was utilized to showcase each page of the informed consent and read it with each participant. Additionally, participants were provided a copy of the informed consent electronically prior to the interview.

The first round of interviews were held either face-to-face or electronically in October and early November of 2012. Some interviews took place using Blackboard Collaborate™ (2013) or Audacity™ (2013), as participants lived in other geographical regions. Each interview took about an hour and a half using piloted interview questions (see Appendix G). This round of interviews was transcribed by a professional transcriptionist and checked for accuracy. Qualitative research is personal, and the researcher ethically must protect the identities of participants unless participants would like to have their identities exposed (Creswell, 2008; Marshall & Rossman, 2011). In this study, participants were given pseudonyms, and personal information was changed to protect identities. At the conclusion of each interview, a debrief statement was provided to each participant by way of email (see Appendix I).

The second round of interviews took place in late November and early December of 2012. These follow-up interviews were conducted face-to-face or electronically using Blackboard Collaborate™ (2013), or Audacity™ (2013). The questions for this interview (see Appendix H) were created using current research and follow up items for individual participants, as well as using some of the preliminary themes from the original interviews. This set of interviews was 27-55 minutes in duration. A professional transcriptionist was employed to transcribe this set of interviews, and each was checked for accuracy.

Analytical Methods

Data analysis took place using IBM SPSS Statistical Software Version 20 (IBM SPSS, 2013). Analysis was conducted to determine descriptive statistics about this ratio-scale data. Multiple tests were administered to look for tendencies within the sample that might be generalized to the wider population at OHS. Having a large sample allowed for control over outliers, obtaining a clear picture of the typical student population at OHS. After the initial tests were complete, the strength of each correlation was determined by finding the coefficient of determination or r^2. All of the data on a correlation matrix was reported, and from this matrix, variables were analyzed to find the greatest predictors of student success.

Two interviews were conducted with each of the eight participants for a total of 16 interviews. During the interviews, field notes, observing participants, setting and nuances were collected to aid in uncovering themes during data analysis (Marshall & Rossman, 2011). Immediately following each interview, observations and initial thoughts were recorded at the conclusion of the field notes to ensure detailed aspects of the experience were documented. Each of the 16 interviews was transcribed by a professional transcriptionist. After the transcription process, interviews were reviewed multiple times, looking for common themes (Creswell,

Hanson, Plano Clark, & Morales, 2007; Marshall & Rossman, 2011). Reading the transcripts while listening to the audio allowed a better understanding of the content of the interview, as well as the nuance behind the words of participants. After reviewing transcripts, themes were developed using thematic codes as outlined by Creswell et al. (2007) and Marshall and Rossman (2011). Initial coding began with codes that were anticipated to emerge based upon a lengthy review of the literature, such as technology issues, parental encouragement, and communication with school. Analytic memos were used to make interpretations while coding took place as new or unexpected themes emerged (Marshall & Rossman, 2011). As transcripts were reviewed, highlighting, underlining and writing in the margins were personally effective methods of coding. Educational phrases were often used, such as self-motivated or one-size-fits-all, to capture the thoughts of the participants in in vivo codes (Creswell, 2008). After reading the transcripts multiple times, Microsoft Excel was utilized to organize the participants' answers to collapse codes toward themes. The final time transcripts were read, Excel was utilized to tally responses from the participants and to manipulate the data to see any similarities and differences in the responses of those who identified their students as successful and those who identified students as unsuccessful in the online environment. In this way, themes were easily identified by question and participant.

Using qualitative research methods provided the flexibility to allow themes to emerge from the transcripts. At the end of the research process, a member checking email was sent to each participant via email, sharing with them the emergent themes, including paraphrases and direct quotes ensuring their voices were being represented effectively (see Appendix J).

Role of the Researcher

Researchers are not without bias. I have worked in online education since 2003 and have served as an administrator in online schools since 2006. That experience leads to a firm belief that online education has a place in the pantheon of educational options for families. I just as strongly believe that online education will never fully replace brick and mortar schools. Though research indicates that online education is just as effective as traditional schooling (Cavanaugh et al., 2004; US Department of Education, 2009; Zhao, Lei, Yan, Lai, & Tan, 2005), as a principal, it is difficult not to see the students who did not succeed and the parents who did not engage, and want to improve the success rate. There is also administrative bias as the role of academic administrator compels me to determine what is best for students, for teachers, or the budget and for the school as a whole. My role in this research is that of observer, earnestly seeking information from experts in the field which are those families who have chosen OHS.

Limitations

There are limitations to every research study. One such limitation is that the site for research was familiar. The advantage to using a familiar site is there can be a vested interest in improving the conditions of all students and a pressing desire to know how to increase student achievement. One drawback is as an academic administrator, my position is one of authority at the school and assurances will have to be made to participants, so they understand what they share will not reflect on the academic performance of their student in any way. They can participate voluntarily and even cease participation during the study, without any recourse.

While every effort was made not search the OHS database for student or parent information, in the course of my role as administrator, I recognized a student name that came across my desk as the child of one of my interviewees. It was clear from the memo on my desk

that the information given by this participant was not truthful or correct. The participant either knowingly inflated the student's performance or was denying the reality of the academic achievement of the student. This participant was excluded from the research study as it presented difficulty in analyzing the interview objectively. This participant never submitted an informed consent and was excluded for this reason as well. A replacement participant was found, and the entire interview cycle was completed with that parent.

Additionally, the ethnic distribution of the sample in this study does mirror that of the entire population at OHS. This is a limitation as the ethnic distribution is predominantly Caucasian, and generalizations should not be made about underrepresented populations based on this data set.

Another limitation to this study was that it was required by Family Educational Rights and Privacy Act, 20 U. S. C. § 1232g; 34 CFR Part 99 to gather volunteers from the opt-in parent directory as participants. Searching the OHS database for participants based on a set criterion was not permitted, so volunteers were sought. Volunteers for a research study may have other motivations for participating which could be a limiting factor.

Ethical issues in research do not end when the interviews are coded or when the researcher has stopped interviewing. Marshall and Rossman (2011) note, "ethical practice is ongoing…" (p. 48) and as a researcher, this is taken seriously. There is an ongoing effort to insure participants are treated fairly, giving them a voice and interpreting data based upon research findings.

Chapter IV

Results

Introduction

There is an agreement that more research in the area of K-12 online education is necessary to discern how to help students be more successful (Black, 2009; Cavanaugh et al., 2009; Rice, 2009; U. S. Department of Education, 2009). Most research in the area of online education is being conducted in the post-secondary arena or large state sponsored virtual schools where students may take just one online class at a time (Black, 2009; Feng & Cavanaugh, 2011; Hawkins et al., 2011**;** Liu et al., 2010; Liu & Cavanaugh, 2011; Lowes, 2005). With a growing number of students participating in K-12 online learning environments, gaps exist in research regarding factors that affect student achievement and the role of parents when students are enrolled in a full-time, online environment. Black (2009) studied the role of parents in a state virtual school but recommended that additional research be led by full-time virtual schools as well as encouraging the inclusion of qualitative analysis to determine parent perceptions about their role in student achievement. The questions guiding this dissertation study were:

1. What factors affect student achievement in a K-12 online school?
2. What variables correlate most strongly with student achievement in a K-12 online school?
3. What are the perceptions of parents concerning their role in the student achievement of their children while they were enrolled in a full-time, K-12 online school?

Chapter IV offers data pertinent to each question utilizing data gathered from ex post facto student records and a series of in-depth interviews conducted with parents of current or former students at Online High School (OHS), a full-time, online school in the Western United States.

Research Question #1

The effectiveness of online education versus that of traditional brick and mortar schools has been debated (Cavanaugh, 2001; US Department of Education, 2009; Zhao, Lei, Yan, Lai, & Tan, 2005). With growing enrollment in online courses and full-time, virtual schools, the discussion is transitioning to how to help students who are already engaged in online learning be more successful (Watson et al., 2011). With that in mind, the first research question posed in this study asks:

What factors affect student achievement in a K-12 online school?

Because students are not widgets, there are multiple factors that could affect student achievement in any school environment (Archambault et al., 2010; Bressler et al., 2010; Rice, 2006). If full-time, virtual schools are to meet the needs of students who enroll in that environment, increased research is required to understand the needs of special populations of students (Archambault et al., 2010; Black, 2009; Bressler et al., 2010; US Department of Education, 2009). For the scope of this dissertation study, seven factors were examined to discover whether or not any would indicate success or failure in an online environment. Those factors were identified as: student grade level, gender, socioeconomic status (as indicated by free and reduced lunch), family configuration, parental education level, previous experience with online learning, and parental involvement. Some of these variables were indicated in research as affecting students in other online environments referenced above (Artino, 2008; Bressler et al., 2010; Catsambis, 2011; Feng & Cavanaugh, 2011; Hughes et al., 2007; Liu & Cavanaugh, 2011; US Department of

Education, 2009). Other variables were selected because they represented a significant population at OHS, and yet another group of variables was chosen to increase transferability to schools in other locations. The data collected for the next two questions provided some guidance on the factors affecting student success in a full-time, online school environment.

Research Question #2

If online schools can determine variables affecting student achievement, they can establish individualized plans for students or intervene to increase student success. Online learning originally attracted students who desired to take advanced courses, dual credit, or foreign language courses that were not offered at their home school. Increasingly, online education is attracting students who are at-risk or have special needs (Archambault et al., 2010; Clark, 2001; Repetto et al., 2010; Thompson, 2010). For this portion of the study, quantitative research methods were considered to be the most effective way to determine the answer to research question number two, which is:

> What variables correlate most strongly with student achievement in a K-12 online school?

OHS provided a sample of 350 ex post facto student records that were analyzed using descriptive statistics and correlations. The sample was randomly selected from a population of all OHS high school students from school years 2009-2010, 2010-2011, and 2011-2012, who were enrolled after October 1 of each school year. In this way, all students who enrolled at OHS but did not attend were removed from the sample to control for outliers. The student records were compiled by the registrar at OHS and provided to the researcher devoid of any identifying information, ensuring an anonymous sample.

Ninety-five percent of the students at Online High School (OHS) are full-time students, with the remaining five percent attending OHS on a part-time basis while also taking classes at a brick and mortar high school part-time. OHS is a public charter high school and similar in demographics to the brick and mortar high schools in the state where it operates. Subset populations include students with special needs (>10% of the overall population), free and reduced lunch (>60%), a growing number of homeless students (<1%) and at-risk or emancipated youth (>20%). Table 1 illustrates student records studied are a representative sample of the entire population of OHS.

Student achievement was defined using the variable of grade point average (GPA). OHS uses a traditional four-point grading scale, with a weighted grade point opportunity for students who take Advanced Placement™ courses; thus a GPA could be higher than 4.0. For this sample, the mean GPA upon enrollment at OHS was 1.26 with a standard deviation of 1.34 (Table 2). Thirty-six percent of this data set included ninth graders who had not had the opportunity to earn high school credits. Their initial GPA reflected 0.0. The mean GPA for this sample on the date that it was generated, inclusive of withdrawals, graduates, or drop-outs, was 2.09 with a standard deviation of 1.06.

Additional analysis of credits earned prior to coming to OHS indicated that the mean number of credits earned by this sample before enrolling at OHS was 10.66 with a standard deviation of 12.97 (Table 2). Descriptive statistics show the sample of cumulative credits earned to date, inclusive of withdrawals, graduates, and drop outs, had a mean of 23.45 with a standard deviation of 15.65 (Table 2).

Table 1

Demographics on Ex Post Facto Data

n=350

Variable	*Number*	*Percentage*
Male	165	47%
Female	185	53%
9th grade	125	36%
10th grade	89	25%
11th grade	64	18%
12th grade	72	21%
Full time	328	94%
Part time	22	6%
White	311	89%
African-American	3	<1%
Hispanic	18	5%
American Indian	4	<1%
Native Hawaiian or other Pacific Islander	2	<1%
Other/Undefined	10	3%
Declined to State	2	<1%
Parents with some college experience	226	65%
Parents with high school education/GED	62	17.5%
Parent's education not specified	62	17.5%
Students with Special Needs	45	13%
Students on a 504 Accommodation Plan	15	4%
Single Parent (adult) Families	100	29%
Double Parent (adult) Families	250	71%
Prior Experience with Online Schooling	28	8%

Table 2

Descriptive Statistics for Ex Post Facto Data

n=350

Variable	*Range*	*Mean*	*Standard Deviation*
GPA prior to attending OHS	0.0-4.11	1.26	1.34
GPA after attending OHS	0.0-4.23	2.09	1.06
Number of credits prior to attending OHS	0-49	10.66	12.97
Number of credits after attending OHS	0-64	23.45	15.65

An effective way to find the relationship between two interval scale variables that are normally distributed is by using Pearson's Correlation (Tanner, 2012). In this study, all variables were correlated with GPA to determine if any had significant relationships with academic achievement. Correlations range from -1 to 1 (Salkind, 2011; Tanner, 2012). When analyzing correlations, the strength of the relationship between two variables is gauged from the distance from 1 or -1. Salkind (2011) reports strength of correlation relationships in this way:

- .8-1.0 very strong
- .6-.8 strong
- .4-.6 moderate
- .2-.4 weak
- 0-.2 weak or no relationship (p. 129)

For this study, we will test $H_o = \rho=0$. The null hypothesis states that there is no correlation between GPA and grade level, family configuration, education of the parent, previous online experience, gender or free and reduced lunch. Correlations were calculated as two-tailed probabilities with significance at $p<.05$.

Table 3 illustrates the results of comparing the variables of gender, age, socioeconomic status (as indicated by free and reduced lunch), prior experience with online education, and

education of the parents with GPA. Though the correlations of socioeconomic status, education level of the parent, gender and previous online experience are statistically significant at $p<.05$, they show weak or no relationship. Both family configuration and grade are statistically significant at $p<.01$. Family configuration, which is defined as whether the student has one or two adults in the home, has a weak relationship. Grade level of the student correlates with GPA as .470 which is a weak to moderate correlation. As this is a two-tailed test, though the correlations are weak, we can say with a 95% confidence level that relationships do exist between the variables.

Table 3

Correlation Matrix

Variable (n=350)	*GPA*	*Grade Level*	*Family Config.*	*Level of Educ.*	*Prior Online*	*Gender*	*Free/ Reduced Lunch*
GPA	1	.470**	.181**	.136*	.131*	-.125*	-.119*
Grade Level	.470**	1	.004	.010	.132*	-.116*	-.142**
Family Configuration	.181**	.004	1	.178**	.093	.014	-.091
Parent's Education	.136*	.010	.178**	1	.039	-.017	-.188**
Previous Online	.131*	.132*	.093	.039	1	-.004	-.062
Gender	-.125*	-.116*	.014	-.017	-.004	1	.095
Free/Reduced Lunch	-.119*	-.142**	-.091	-.188**	-.062	.095	1

*Correlation is significant at 0.05 (2-tailed)
**Correlation is significant at 0.01 (2-tailed)

For all significant relationships, the correlation of determination or r^2 was calculated to control for any variance that may be in the data (Tanner, 2012). Any p-value of less than .05 was considered significant. Table 4 displays all of the significant correlations for this data set including the p-values. For all of the correlations in Table 4, the null hypothesis is rejected as there are significant correlations between multiple variables.

Research Question #3

While there is a growing body of educational research in the field of online education, there continues to be a gap in the roles of parental involvement in online schools (Black, 2009; Liu, Black, Algina, Cavanaugh & Dawson, 2010; Rice, 2009). Black (2009) encourages continued study in to the roles of parents search concerning the roles of parental involvement in online schools (Black, 2009; Liu et al., 2010) in the online setting through the use of qualitative methods. Research question number three addresses this gap in research when it asks:

What are the perceptions of parents concerning their roles in the achievement of their child while they were enrolled in a full-time, online high school?

Table 4

Significant Correlations

Variables	Correlation	r^2	p-value
GPA-Free and Reduced Lunch	-0.119	0.014	0.026
GPA-Family Configuration	0.181	0.033	0.001
GPA-Parent's Education	0.136	0.018	0.011
GPA-Grade Level	0.470	0.221	0.000
GPA-Gender	- 0.125	0.016	0.019
GPA-Previous Online Experience	0.131	0.017	0.014
Free and Reduced Lunch-Parents Education	- 0.188	0.035	0.000
Free and Reduced Lunch-Grade Level	- 0.142	0.020	0.008
Family Configuration-Parents Education	0.178	0.032	0.001
Grade Level-Gender	- 0.116	0.013	0.030
Grade Level-Previous Online Experience	0.132	0.017	0.013

Correlation is significant at $p<.05$ (2-tailed)

Using a group of eight volunteer participants, 16 semi-structured interviews were conducted, transcribed, and coded for themes to determine the perceptions of parents concerning their roles in the achievement of their child. These participants were a varied group with diverse

journeys to having their children participate in online education. It is difficult to determine the perceptions of parents concerning their involvement in their students' education without spending some time describing the personal experiences that brought these families to online education. A greater understanding of the participants allows the reader to establish a paradigm for the parents' roles and the success factors of their students. Pseudonyms were provided to increase anonymity of all participants and their children as suggested by Creswell (2008) and Marshall and Rossman (2011). Table 5 describes the demographics of the parent participants in the order they were interviewed.

All of the parent participants attended college at some point in their educational journey. The mean online learning experience of the students in this group of families was 2.13 years. Half of the families qualified for an internet subsidy while their children were enrolled at OHS, which is indicative of having a lower socioeconomic status or qualifying for free or reduced lunch. Six of the eight participants were married, one was in a same sex relationship, and one was a single parent. Within these eight families, 11 students were represented, with varying degrees of success in the online environment. Diversity in experience was evident within some families, as one student was often more successful or participated more fully than a sibling. Of the 11 students, six had negative experiences and the remaining five succeeded as online learners. Two of the students dropped out of OHS as their last school, passed the GED test, and are currently employed. Two left OHS to attend other online schools and three are attending other brick and mortar high schools. Three students remain at OHS, and are on track to graduate with their cohort.

Table 5

Participant Synopsis

N=8

Pseudonym	*Family Status*	*Education*	*Free and Reduced Lunch*
Hillary	Same-sex relationship 2 children 1 learned online (F)	Graduate school	Yes
Michael	Married 4 children 1 learned online (M)	College	Not sure
Melody	Single parent 4 children 1 learned online (M)	Graduate school	Yes
Maria	Married 4 children 2 learned online (M/F)	College	Yes
Cari	Married 3 children 1 learned online (M)	College	No
Nathaniel	Married 4 children 1 learned online (M)	Graduate school	Yes
Elizabeth	Married 2 children 2 learned online (M/F)	College	No
Shelli	Married 2 children 2 learned online (M)	Some college	No

The setting, structure or culture of the prior school attended by the children influenced many of the parent participants to select OHS for their children. Three participants removed their

children from brick and mortar schools, enrolling them in OHS to help their children deal with social pressures.

Phoebe came to online learning in middle school and stayed through her first two years of high school. She was driven, very focused on her studies, and hoped that she would find a culture in an online school conducive to excellence. Her mother shared that the middle school she had attended was a negative environment for Phoebe, and Phoebe "hoped that everybody would be there [OHS] because they were really super focused on academics and wanting to work hard and learn a lot." She found a wide variety of students in the online school. She successfully attended online schools for four years and will graduate this year with honors from her brick and mortar high school.

Michael's son, Gabe, came to OHS to flee from social pressures that caused him to try to take his own life more than once. Originally, Michael's wife responded to my electronic notice. When the phone call was made to ask if Michael's wife would participate in a longer interview, she responded that it was too painful a time for her to discuss. Later, Michael responded to the email request volunteering to participate. Remembering those high school years when Gabe was suffering he recalls:

> "I guess he felt like he was picked on at times, and sometimes bullied, although he's a big kid. He's probably six-two or six-three, 230 pounds…He's a pretty sensitive kid, and he's really nice. He's just really a gentle giant type of thing, so I think he did feel intimidated by some of the kids at school."

Aside from bullying, other students came to OHS because they had debilitating social anxiety. Shelli's son, Porter resisted going to school for years. After a successful year in kindergarten, Shelli and her husband noticed that Porter was struggling socially in first grade.

Their older son, Preston, would wave to his parents, jump out of the car and go on the playground, but Porter would refuse to get out of the car or go into the school building. Shelli noted during one of the interviews:

> "…we literally had to drag him into school every day. After years of going through this with him, I mean, this went on through fifth grade, and after fighting him every day, every step of the way and him, you know, he would pretend that he was sick, and we didn't know if he was sick…is he really sick? Is he not sick? I mean he would go to his teacher, and then they'd call us from work to pick him up. I mean, this went on like I said, through fifth grade…It was just an emotional drain on us."

Porter and his family sought and found some relief with the online educational setting.

Multiple participants noted their students lacked motivation. While there was some communication between school and home in the brick and mortar school, by the time the parents were made aware that students were falling behind, it was too late for them to catch up. Maria shared that both of her students would come home telling her they had no homework and because she could not see exactly what they were doing in class all the time, she did not realize that they were struggling. "They always came home and said they never had homework, and then I would find out midterm that they were failing and they haven't been doing their homework." Elizabeth had a similar experience with her oldest child, Skylar:

> "He was skipping classes, and I wasn't getting calls from school. That being said, they've got a lot on their plate, budget cuts and all that kind of stuff, so I don't want to fault the school at all, so we had to kind of take a more active role in his schooling."

Other participants sought the flexibility of the online setting. Three of the participants had sons with disabilities. Cari's son, Christian, and Elizabeth's son, Skylar, have Attention Deficit

Hyperactivity Disorder (ADHD). Skylar also was diagnosed with Oppositional Defiant Disorder (ODD) shortly after starting at OHS. Both were on 504 plans, which afforded them accommodations in both brick and mortar and virtual settings. Shelli's son, Porter takes medicine for his social anxiety that flips his day. He sometimes slept late into the afternoon, and virtual school gave him the opportunity to do his schoolwork in the evenings or late into the night. Elizabeth's daughter, Lori was able to take on the responsibility of raising a guide dog due to her flexible schedule at OHS.

Physical illness drove Nathaniel to choose an online school for his son Brian. During the first semester of Brian's sophomore year in high school, he contracted Swine Flu and was never able to go back to a traditional high school. He attempted to go back several times. During the interview, the family noted:

> "He had a fever most days. He had several strep infections; I think he had six of them in a matter of two months. They tried all kinds of antibiotics; nothing seemed to really help. He had terrible abdominal pain. In fact towards the end of his sophomore year they took out his gallbladder and appendix and cleared up some scar tissue, but it never…nothing seemed to help him at all. He had two years where he was feeling really sick, too sick to do anything on a daily basis. In fact he still feels some of the effects from it today."

Table 6

Top 10 Frequent Codes from Interviews

Successful Students	Number of Responses	Unsuccessful students	Number of Responses
Parent Monitoring	37	Students need to be self-motivated	41
Students need to be self motivated	35	Parent available to support, encourage, coach	41
Time with student (positive)	29	Education cannot be one size fits all	36
Immediate Feedback for students	29	Students see relevance of education	35
Parent available to support, encourage, coach	29	Daily Schedule/lack of schedule	33
Being there makes a difference	28	Parent question and monitor	31
Flexible = preferred activity	25	Student needs increased accountability	29
Students see relevance of education	22	Student lack of participation	28
Student responsibility/accountability	21	Parent time requirement	28
Communication with school	18	Communication with school	27

Often, the participants had conflicting thoughts whether they had identified their student as successful or not successful. For example, the parents of successful students described students making their own schedules, setting a daily plan, and doing much of the work independently. Hillary shared:

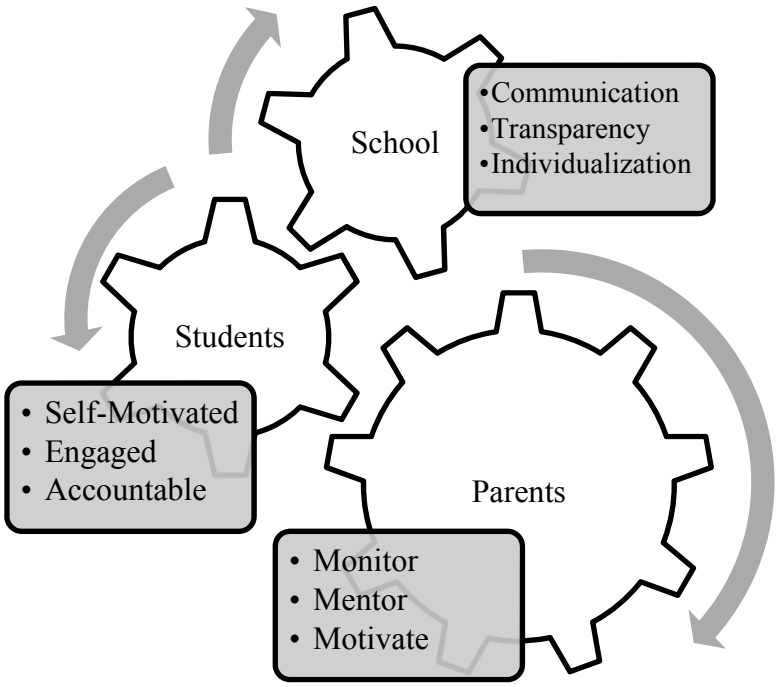
> "One of the things that made me think from the beginning that an online school would work for [Phoebe] is that she is a person who can really just get up in the morning and get to work, doesn't need to have much direction, is able to stay focused and accomplish a lot. So very much a self-starter and somebody who is intrinsically motivated rather than extrinsically motivated."

Parents of students who were unsuccessful online learners often responded that students could be more successful if they kept to a schedule or a daily plan and were self-motivated. For example, Michael shared that Gabe was capable of high level work "…if you can get him to do the work and apply himself. And that's the real challenge with Gabe is the motivation and discipline to keep at it." Both Hillary and Michael were sharing the same attribute of self-motivation, but sharing from different paradigms.

While interviewing the participants in this study, three main stakeholders emerged as present: parents, school, and students. Though the focus of this dissertation study was primarily on parental guidance and student success in the online environment, the full-time, virtual school also plays a role in facilitating parent and student success. Figure 1 is a visual representation of the themes that emerged from the interview data.

Figure 1

Themes from Interview Data



In this diagram, all parts work together to promote increased student achievement in the full-time, virtual school setting.

Conclusion

Chapter IV presented a summary of the findings from both quantitative and qualitative data collection methods in the field of online education. Descriptive statistics and Pearson's Correlation's found some statistically significant relationships between the variables of grade point average and socioeconomic status, family configuration, education of the parent, student grade level, gender and previous online experience. Since the relationships were weak to moderate, qualitative methods were necessary to gain further insight into the role of parental involvement in student success in the online environment. Themes from semi-structured interviews found that parents of current or former students in a full-time, online school perceive multiple facets of student success in the online environment. The school can provide support to

families by communicating, being transparent with tools, and individualizing instruction. Students must be self-motivated, engaged and participating, and accountable for their own learning. Parents should be available to monitor, mentor and motivate students. The data presented in this chapter will be expanded upon in the following chapter to discuss in more depth the factors affecting student achievement in an online school and ways in which parents can influence students toward success in that learning environment.

Chapter V

Conclusion

Introduction

Enrollment in full-time, online schools has increased by approximately 50,000 students in the United States between 2009 and 2011 (Watson et al., 2011). While enrollments continue to grow, the effectiveness debate remains with some research noting that online education is just as effective as face-to-face instruction while other studies state the opposite (Cavanaugh, 2001; US Department of Education, 2009; Zhao, Lei, Yan, Lai, & Tan, 2005). Scholars continue to debate the effectiveness between online education and traditional education. Online schools continue to enroll students and must find the most effective ways to educate those students (Rice, 2009).

Research in the online educational sphere is increasing, but often results are generalized in the K-12 setting using participants from other demographic groups. Multiple studies have been conducted using older participants from post-secondary institutions and are sometimes cited by policy makers or educators to make generalizations about K-12 education (DeTure, 2004; Dixson, 2010; Hung & Zhang, 2008; Karp et al., 2007; Priebe et al., 2008; Torres & Eberle, 2010). Another body of research in the K-12 segment of online learners comprises studies that utilize state virtual schools as their setting (Black, 2009; Feng & Cavanaugh, 2011; Hawkins et al., 2011; Lemley et al., 2007; Liu et al., 2010; Liu & Cavanaugh, 2011; Lowes, 2005; Wallace, 2009). With growing numbers of students earning a high school diploma in a full-time, online educational setting, research must be conducted in that setting (Black, 2009; Watson et al., 2011).

While there is a need for continued research on the type and effectiveness of K-12 online education programs, stakeholders in online education must not be overlooked when speaking

about student academic achievement. The popularity of online enrollments originally began as a way for advanced learners to have increased access to Advanced Placement™ courses, but at-risk students are also enrolling in online schools as an alternative to their current educational setting (Archambault et al., 2010; Cavanaugh et al., 2009; Morabito, 2011). Parents are one group of vital stakeholders nearly absent from literature related to K-12 online learning environments. Full-time, online schools partner with parents to oversee and support students who are completing their education in an online environment. Though parents play a significant role in educating students who school online, the research is nearly silent on their roles.

The questions investigated in this study were:

1. What factors affect student achievement in a K-12 online school?
2. What variables correlate most strongly with student achievement in a K-12 online school?
3. What are the perceptions of parents concerning their role in the student achievement of their children while they were enrolled in a full-time, K-12 online school?

Chapter V interprets the results of this study, how they relate to Epstein's model of school and family partnerships, and describes implications for future research.

Summary of Results

This study investigated factors that influence student academic success in a full-time, online high school. Because there are many variables affecting student achievement or failure, neither quantitative nor qualitative research independently was sufficient to explore the phenomenon fully. Creswell (2008) suggests "the use of both quantitative and qualitative methods, in combination, provides a better understanding of the research problem and questions than either method by itself" (p. 552). In this study, ex post facto data from high school student

records provided insight into factors that contribute to student achievement. In addition, a series of semi-structured, audio recorded, and transcribed interviews with parents of students in the online educational environment was designed to determine perceptions regarding the role of parents in student achievement.

This study examined high school students who selected to enroll at Online High School (pseudonym), an accredited, online high school in the Western United States. Ex post facto student records were examined to determine the strength of relationships between student achievement and the following variables:

- socioeconomic status
- family configuration
- education-level of the parent
- grade level
- gender
- previous online experience

Additionally, a series of semi-structured interviews were conducted with a volunteer group of parents representing current and former OHS students to determine perception and roles for parents while their children were enrolled in a full-time, online school. To solicit a volunteer sample of parents willing to engage in a short telephone follow-up recruitment call, an electronic notice was sent to 1,030 potential participants in September 2012 using Qualtrics, an online survey tool (see Appendix D). Data gathered from that notice prompted a telephone calling campaign to recruit participants. During this telephone call, a verbatim script was used to find possible participants (see Appendix E). All of the questions on this short telephone survey were designed to determine the success of the student while they attended OHS. Quantitative and

qualitative data was collected and analyzed concurrently throughout this study, and one informed the other equally.

Student achievement is paramount in schools today. *No Child Left Behind* (No Child Left Behind, 2002) brought increased accountability for all American public schools, and OHS is no exception. Student test scores and pass rates are monitored closely in an effort to increase achievement for all students. Additionally, online school research continues to explore the effectiveness of programs and school types, as well as meeting the needs of a spectrum of online learners (Archambault et al., 2010; Keeler & Horney, 2007; Repetto et al., 2010; Thomson, 2010; US Department of Education, 2009). Clearly, student achievement in online schools is vital to their success.

Quantitative Data

For this study, student achievement was defined as grade point average (GPA). Anonymous student records (n=350) were used to determine relationships between GPA and socioeconomic status, family configuration, education of the parents, grade level, gender and previous online experience. Relevant demographic factors could be collected at the time of student enrollment and used by OHS faculty and administration to determine the academic needs of students. Early intervention or correct placement could result in increased academic success. With that in mind, correlations were calculated using IBM SPSS Statistical Software, Version 20 (IBM SPSS, 2013). Table 3(page 64) illustrates the entire correlation matrix and table 4 (page 65) highlights significant correlations. For this study, we were testing $H_o = \rho=0$. The null hypothesis states that there is no correlation between GPA and grade level, family configuration, education of the parent, previous online experience, gender, or free and reduced lunch. Correlations were calculated as two-tailed probabilities with significance at $p<.05$.

GPA and grade level had the strongest correlation at r= .47 or 47%. While this is a moderate relationship (Salkind, 2011), it was significant at p< .01. This relationship exists with a 99% confidence level. Educational research in both brick and mortar and online settings support the relationship between success in online learning and age of the student (Artino, 2008; Bressler et al., 2010; Cavanaugh et al., 2004; Dabaj, 2009; US Department of Education, 2009). With a positive correlation of .47, a moderate linear relationship in the data shows that students' grade point averages increase as their age or grade level increases. Multiple studies have demonstrated the success of online learners in post-secondary settings, and these results indicate that there is a moderate relationship between those two variables with high school online learners as well (DeTure, 2004; Dixson, 2010; Hung & Zhang, 2008; Karp et al., 2007; Priebe et al., 2008; Torres & Eberle, 2010). Research indicates older learners are better suited for online learning but encourages giving younger learners more support, including teaching them strategies to be more successful online (Artino, 2008; Cavanaugh et al., 2004).

The correlation showing the next highest relationship was between GPA and family configuration. While a weak correlation at .181 or 18% (Salkind, 2011), since the p-value was .001, there is a significant relationship between those variables. In this sample of 350 student records, 100 students (29%) lived with one adult in the home, and 250 (71%) students lived with two adults. There were a variety of family configurations in this sample of data. Enrolled students reported living with parents, grandparents, aunt/uncle, foster families, step-parents, and older siblings. Many of these relationships were also represented in the homes of students who lived with one adult. Since the results exhibit a positive correlation, this data illustrates that GPA increases when students have more than one adult living in their home. One has to look to traditional school research to find information on student achievement and family configuration.

Ferrell (2009) found students with single parents were absent and tardy more often than their peers with two parents. Even though students with two parents had a higher mean GPA, Ferrell (2009) demonstrated there was not statistically significant differences between GPA's of students from single and two parent households. Similarly, Neild et al., (2008) found no difference in the number of high school drop outs between one- and two-parent households. In the sample of eight participants that were interviewed for the qualitative portion of this mixed-methods study, all but one came from two-parent homes (Table 5, p. 67). Of those 11 students who came from two-parent homes, 50% were identified as unsuccessful by their parents. There were two high school drop outs in that group, and both came from two-parent homes. The one student who was from a single-parent home was identified by his parent as being successful. This data corroborates both the traditional school research and the weak correlational relationships in the quantitative portion of this study. The positive correlation indicates that GPA increases as the number of adults in the home increases. However, it is a weak relationship and cannot completely explain success or failure in school.

As full-time, virtual schools partner with parents to take an active role in the education of students, one would assume that students from families where parents were more educated would exhibit greater academic success. With the ex post facto data set, there was a positive correlation between GPA and the education level of the parent at .136 ($p= .011$). At $p<.05$, this is a weak statistical relationship (Salkind, 2011). Results indicate that as parent's education increases, so does the GPA of the student. The sample of 62 records was inadequate to determine the educational level of the parent. In the sample, 64% (n=226) of parents had some college or higher, 18% (n=62) had a high school diploma or GED, and another 18% (n=62) was incomplete data. In the group of participants who were interviewed for the qualitative portion of this

dissertation, 12 students were represented, with half of them reported by their parents as being unsuccessful in the online environment. Table 5 (p. 67) shows 100% of the interview participants had some college or higher. Neild et al. (2008) found that in traditional schools, if parents had even some college or post secondary education, children were significantly less likely to drop out. Evaluating the population from the interviews, two of the students dropped out initially, later earning their GED, but both of them came from families where at least one parent had gone to college. While a positive relationship between education of the parent and GPA exists, it is not strong enough to explain the success or failure of students in the online environment.

Bressler et al. (2010) found a positive relationship between self-efficacy or confidence and the number of online courses previously taken. This data could be viewed in two ways: either students are more confident, so they do well in online courses, or they are confident enough to take multiple online courses. GPA and previous experience with online courses did have a positive correlation in this data. By evaluating student transcripts, eight percent of students in the sample (n=28) were found to have previous online course experience. With an r^2 of .017, it is found that there is a positive, yet weak correlation between previous experience with online education and GPA (Salkind, 2011). The positive correlation indicates that GPA rises with previous experience in online education. These results are promising and could be an indicator of future success. However, it would not fully explain success in the online learning environment due to the weak correlation. This experience was represented in the population of parents who participated in the qualitative portion of this dissertation. Lori's son, Skylar was unsuccessful at OHS and struggled with the rigor associated with the system at that online school. He later transferred to another alternative online school and was able to earn a diploma.

This could indicate that his prior experience with online education helped to increase his academic success when he chose to return to that setting.

The last two statistically significant relationships are negatively correlated with GPA: gender and socioeconomic status, as measured by free and reduced lunch. Negative correlations are often incorrectly identified as negative relationships (Salkind, 2011; Tanner, 2012). A negative correlation indicates that as one variable increases, the other decreases.

The anonymous sample of student records was nearly equal in gender distribution. One hundred eighty-five (53%) students in the sample of 350 were female, and 165 were male (47%). There was found to be a statistically weak relationship between gender and GPA with an r^2 of .016. Since males were assigned a higher number in the data set, in this sample, they show a weaker relationship with GPA than females. When examining traditional school research, Neild et al. (2008) discusses how males are more apt to drop out of school than are females. One additional study utilizing online students indicated males did not enjoy online instruction as much as females (Dabaj, 2009). The group of parents who volunteered to participate in the qualitative portion of this dissertation had a student population that seemed to mirror this finding. Of the 11 students represented in the eight families who participated, seven were identified as being unsuccessful by their parent. Of those seven academically unsuccessful students, 100% of them were male. While there is a statistically significant correlation between GPA and gender, it is not strong enough to explain academic success or failure in the online school environment fully.

With the number of research articles on the impact of socioeconomic status or qualification for free and reduced lunch in both traditional and online school research, it was surprising to find a weak, negative correlation (r= -.119). When evaluating traditional school

research, Catsambis (2001) indicated socioeconomic status was strongly related to achievement in 12th grade and the number of credits completed in high school. Families who reported being on public assistance during 8th grade were more likely to have a child drop out of high school (Neild et al., 2008). Students qualifying for free and reduced lunch were academically less successful in two studies conducted in a large, online course provider (Feng & Cavanaugh, 2011; Liu & Cavanaugh, 2011). Additionally, Liu & Cavanaugh (2011) found free and reduced lunch to be the second highest predictor of success or failure in the online school environment. Only time in the Learning Management System was an indicator of greater effect on student achievement (Liu & Cavanaugh, 2011). The negative correlation, though weak, also indicates that as socioeconomic status decreases, GPA increases. When evaluating the participants for the qualitative interviews, the opposite was found. All of the students identified by their parents as being academically successful qualified for free and reduced lunch. Only one student in the group that was identified as academically unsuccessful qualified for free and reduced lunch. While there is research and data to show that there is a statistically significant relationship between socioeconomic status and academic achievement, there is not enough data to fully indicate academic success in the online environment.

While all of the relationships discussed are statistically significant, few were found to have a strong r-value (Salkind, 2011). One distinction to make with this data is that students do not fit neatly into just one variable or another but would likely represent multiple categories. All students have at least one adult they live with, each of whom has some level of education and socioeconomic status. All students are male or female, and all are in high school. While the correlations are weak, students are complex, with multiple variables indicating academic success or failure when learning in the online environment.

Moderate-to-weak correlations alone cannot completely explain academic success or failure for students who learn online. There is an absence of demographic data collected at OHS to indicate the level of involvement and impact that parents have on student achievement. There is also an absence of research in the online environment about the roles and perceptions of parents regarding student achievement (Black 2009; Cavanaugh et al., 2004; Liu et al., 2010). Mixed-methods research is necessary when one methodology alone does not fully explain the phenomenon (Creswell, 2008). With weak to moderate correlations present in the sample of ex post facto data, quantitative methods alone do not tell the full story about academic performance of students in the online environment. Qualitative methods are necessary to paint a more complete picture of the nature of student achievement in a fully online high school.

Qualitative Data

Individual, semi-structured interviews allow researchers to collect data about the experiences of people by asking specific questions (Creswell, 2008; Marshall & Rossman, 2011). In the qualitative portion of this study, a volunteer sample of parents was gathered to participate in a series of semi-structured interviews conducted face-to-face or electronically using Audacity (Audacity, 2013) and/or Blackboard Collaborate (Blackboard Collaborate, 2013). After completing 16 semi-structured interviews ranging from 27 minutes to 105 minutes in length, transcripts were reviewed for accuracy, read multiple times, and coded for themes. Transcripts were separated into two groups: 1) parents who reported that students were successful in the online environment, and 2) parents who reported that students struggled or failed in the online environment. Each group of interviews was analyzed separately and coded (see Appendix K). Many identical codes emerged from both groups of participants. Table 6 (p. 71) illustrates the top codes that emerged from each group of interviews. The group of participants who identified

students as successful had 36 total codes in the interviews. There were five students represented in this group. The non-successful group represented six students and had 45 codes. Of the 45 overall codes, 27 were found in both sets of interviews (see Appendix K).

Creswell (2008) describes a process for identifying major and minor themes as one of the most common types of theme identification. The results for the major and minor themes for this dissertation study are illustrated in Figure 1 (p. 72) as a set of gears, rotating consistently and concurrently to ensure that students have the greatest opportunity to experience academic achievement and success. There are three gears, each representing one of the major themes of students, school, and parents. Under every major theme are minor themes, which will be discussed individually in this chapter. All will be illustrated with experiences of the participants in the study, available research, and Epstein's (2001) framework for parent, school, and community partnerships.

Theme One: School

School is the first major theme in the qualitative portion of this study. Participants purport that a connection with the school is important as students endeavor to go to school in an online environment. Under the overall theme of school are the minor themes of communication, transparency, and individualization.

Communication: A two-way street. Educational research in both brick and mortar and online settings indicates the importance of communication between school and home (Archambault et al., 2010; Black, 2009; Diaz & Entonado, 2009; Hawkins et al., 2011; Mandernach, 2009; Thomson, 2010a). Epstein (2001) includes communication as one of the six types of partnerships between school and family. When forming a partnership, all types of communication are important; from formal parent-teacher conferences to flyers and newsletters

keeping families informed of school events or opportunities for growth (Epstein, 2001). The first research question asked what factors affect student achievement in an online school. Parents report communication with the school affects success in an online school (n=45). Parents also discuss the effect not communicating with the school had on the achievement of their children. When asked specifically about the frequency of communication with instructors or administrators, answers from the eight participants varied. Two participants communicated with staff as needed, three indicated communication occurred about once a week, one indicated they communicated with staff up to three times each week, and the last two indicated the frequency of communication was once per month. Electronic communication was more frequent, ranging from daily (n=2) to once or twice per week (n=4) to every time email was received (n=1). One participant was unsure about the number or frequency of email communication with the school.

Communication with families at various points on the educational spectrum is highlighted in the literature. Communication with the school can help student's foster relationships within the school and develop a caring community for learners. Thomson (2010a) notes academically gifted students learning online benefit from frequent and prompt communication from instructors, whether it be directed at the entire class or individual students. Additionally, at-risk students can benefit from positive relationships with caring adults, including school personnel (Archambault et al., 2010). Cavanaugh et al. (2013) list a caring community as part of a framework for increasing success for students with special needs. All students can benefit from increased association with caring adults.

Communication with both students and parents in at-risk families should include information about the specific learning program and expectations (Archambault et al., 2010). Communication can be greater online as it is often incorporated into the design of the courses;

however, it should not always be initiated by students or parents (Diaz & Entonado, 2009; Hawkins et al., 2011). Black (2009) found parents were more satisfied with the educational program at the virtual course provider when teachers made monthly phone calls, but indicated the difficulty of this due to high student teacher ratios. The most successful students in the current study were those who had parents who communicated with the school regularly. Many parents reported checking electronic mail daily and calling teachers or school personnel regularly. Parents also spoke about communication coming from the school as positive, especially as they realized that student-teacher ratios at OHS are high, and teacher time is valuable.

Epstein (2001) reflected educators who strive to create a partnership "need to conduct positive communications to establish a base of good relationships to draw on if they need families to help student solve academic or behavioral problems" (p. 54). Just like in brick and mortar schools, relationships with school personnel are important in online schools. While parents had mainly positive experiences with teachers at OHS, all of them indicated the students would have connected with teachers more deeply had they been face to face. One parent relayed a very negative experience with a teacher that he felt was part of the reason his student dropped out of school. Another participant admitted that when her children were enrolled in a full-time, online school, she did not reach out to the teachers for help or resources, and her children are behind in credits as a result.

Regarding communication, participants also suggested the school communicate more fully about the resources provided to parents with the goal to help students be more successful. Multiple participants recommended in the first stages of learning online that the school provide connections and resources to parents, including partnering them with veteran, successful parents,

to utilize for assistance. Experiences with training were varied as Michael, Maria, and Melody all indicate training information from the school was sufficient. Michael notes the information "flowed freely…I mean, they had a lot of information for us and so it was definitely interactive..." Cari advocates on-demand parent training to increase knowledge of how to operate the learning management system (LMS). She mentioned by the time the first days of school arrived she needed to fully understand how to navigate the LMS in order to help her son be more successful, and on-demand parent training could have improved that experience. This is a valid suggestion as Liu and Cavanaugh (2011) and Roblyer et al. (2008) found a significant variable related to increased academic achievement was the amount of time spent on the LMS. Researchers suggest if time spent on the LMS is the most statistically significant variable to student success, then the LMS needs to be effectively organized for students (Liu & Cavanaugh, 2011). Parents in this study would add that parents need to understand how to use the LMS so they can assist their children, and indicate the necessity of the school communicating LMS training for families. Elizabeth cautions online schools that too much parent information can be overwhelming, and to provide it in usable chunks. In this study, participants indicate communication with the school is a factor affecting student success.

Transparency: Coming up vs. catching up. In this minor theme, whether parents were relating past school experiences, speaking about current practice, or advocating for an increase, transparency in online education was indicated as an important way for schools to help students be more successful when learning online. Parents often spoke of the transparency the school provided in terms of electronic tools making it possible for them to help students be more successful. The experience Michael shared about his son, Gabe is illustrative of multiple participants in this study. He notes:

> "In a traditional school, we were kind of behind the curve of knowing what was done and what wasn't done. Because he would tell us everything was fine, paint a pretty rosy picture until we found out that wasn't the case, and it was too late. It was a little different with the online school because we were closer to the real time of when he wasn't getting his work done."

Multiple parents shared similar experiences regarding students who were academically successful in the online environment and those who were not. Both Maria, Elizabeth, and Cari selected to send their students to OHS hoping increased transparency would allow them to help their students be more successful.

Regarding the minor theme of transparency for students, there is a gap in the professional literature due to insufficient research being conducted in full-time online school environments. A recommendation by Black (2009) is that online schools create systems for giving consistent and regular feedback to parents. This is an example of one of the problems with generalizing research conducted at online course providers to what happens in full-time, online schools. OHS has an extensive set of tools available for student and parent purview inside the Learning Management System (LMS). Students and parents have continuous access to student grades, time spent in each unit or lesson within a class, and on demand recordings of live class sessions. Maria shares that having this transparency is the best part about having her students in an online school. Maria notes:

> "Knowing what your kids are doing and knowing their grades and how they're doing in school and seeing, you know, that's the best part. Knowing exactly what they're doing and being able to see their grades and their schoolwork, and they can't just say, 'Oh yeah, I did it' when they didn't. I like that part."

While there is no peer-reviewed research about transparency in the online environment beyond the recommendation made above by Black (2009), participants in this study consistently pointed to the transparency of the virtual school technology system as a contributing factor in parents' ability to help students be successful. Having a well-organized LMS helps students be more successful (Duncan & Barnett, 2009; Reeder, 2010; Thomson, 2010a). The experiences of the participants indicate that technology is a barrier for students who are unsuccessful in the online environment. For parents who identified children as being less successful learning online, 22 instances during the interviews technology challenges were listed as a barrier to learning. Parents reported that when students could not log in to school, it was a readily available excuse to stop participating. Parents needed technology to work so that students would persist. In only two instances did parents of more successful students cite technology as a concern for their children. Technology should be transparent rather than a barrier to students while learning online (Kerr, 2009; Rice, 2009).

Transparency in technological systems can help students understand expectations for course assignments and increases feedback to parents (Black, 2009; Duncan & Barnett, 2009; Reeder, 2009; Uzner, 2009). In Epstein's (2001) model of school and parent partnerships, transparency would be best likened to the school's supporting learning at home. Since Epstein (2001) focused on traditional school sites for research, examples are given about improving skills on assessments and homework. In a fully-virtual school all learning is done in the home setting. Epstein's (2001) research advocates for the school to aid both parents and students to be successful at learning in that environment, including giving support and structure for curriculum-related activities. Parents of online learners add to the literature when they advocate for full transparency in systems so they can monitor the progress of students. Participants with

experience having students in both traditional and online school settings point to the tools available in the fully online setting, such as OHS provides, being superior and more transparent than experienced in the brick and mortar school.

Individualization: Learning is not one-size-fits-all. The minor theme of individualization is related to the rationale for enrolling students in an online school. Morabito (2011) posits that students select to attend asynchronous online schools for four general reasons: students report they disliked the setting or structure of the traditional high school; they felt the need for more flexible schedules; they noted prior issues with the culture of the school most recently attended; and/or they were seeking individualized instruction (Morabito, 2011).

Research in online education has initiated a discussion of individualization for students who have special needs, are at-risk, or who are advanced learners (Archambault et al., 2010; Repetto et al., 2010; Thomson, 2010a). In these instances, researchers advocate mastery-based learning. For students with special needs or students who are academically at-risk, mastery-based learning would require mastering a concept prior to moving on to the next one (Repetto et al., 2010). Thomson (2010a) encourages mastery learning for advanced learners so that they may advance at their own pace, using concepts they already understand to scaffold new concepts and skills.

For the participants in this study, individualized instruction proved far more important to parents who identified their students as being less successful than those whose students had been successful in the online environment (see Appendix K). Thirty-six times in the five interviews conducted with parents of less successful students, parents mentioned the need for individualized instruction for students versus being cited five times in the other three interviews.

Some of the representative students had been identified as having special needs, including some on Individualized Education Plans (IEP's) or 504 Accommodation plans. The sons of Elizabeth, Shelli, and Cari all struggle with Attention Deficit Hyperactivity Disorder (ADHD). Additionally, Elizabeth's son, Skylar, has Oppositional Defiance Disorder (ODD) and Shelli's son, Porter, suffers from anxiety disorders. The need for individualized instruction for these students is medically documented, and accommodations are provided by the school to help increase academic success. Online learning provided the freedom to minimize distractions or amend schedules to individualize instruction for these students. Archambault et al. (2010) support the participants in this study by noting at-risk students who are enrolling in online schools could be better supported in learning by utilizing small group or individualized instruction, mastery learning or ABC not yet type programs. All of these options give students more freedom and flexibility in learning. Mastery based learning alone may not be sufficient to meet the diverse needs of students at-risk of failing.

Multiple participants in this study expressed the need to increase awareness of student strengths and weaknesses, designing an educational experience that suits individualized learning. Hilary, a university administrator, noted the difficulty of providing individualized education for students. Hilary noted:

> "It's one of the challenges of public school administration, of any kind, you know, whether it's online or bricks and mortar, that you're trying to meet the needs of so many different kinds of students with a fairly limited set of resources."

Hilary reveals the reality that lack of resources is a barrier to individualized instruction in all educational settings. Black (2009) and Moore (1993) both identify additional obstacles when speaking about the high student-teacher ratios in online schools, and the considerable distance

separating student and teacher. The administration and faculty at OHS struggle to meet these challenges daily, and parents recognize those challenges, but are still looking for solutions for their own children.

Parents enrolling students in an online school were hoping technology could fill this need to individualize instruction for students. For some, online learning and the transparency a virtual school provided did make a difference, and allowed them to tailor education to their students. For others, the current online education system was not individual enough. Michael gave some suggestions for future course designers. He notes:

> "Nothing is impossible. In fact with technology, I suspect you could probably do it [tailor curriculum to each student]….How would you determine which one works for that person? So if you have a curriculum that was divided into different styles of teaching, and then even within that you're going to have students that want to move really fast, students who grasp it really quickly, students who move a lot slower, students who like interactive things, other students just say 'let me read it,' and other students will want to have a lecture or video, they're better at video than they are at audio. I don't know but I think you'd have to have a variation of that entire [curriculum] put together, and then the students can maybe pick what helps them best out of that."

Though he may not have known it, Michael was describing intelligent adaptive learning. This emerging technology may make completely differentiated instruction a possibility for students (Dreambox Learning, 2012). Because this technology is just entering the discussion, there are no peer reviewed studies to determine effectiveness or impact on student achievement. Responses from participants in this study indicate a desire for individualized technology to improve education for their particular students.

Whether it is in the allocation of resources, teaching to student strengths, mastery learning, or interactive technology, parents are looking for education to cease being one-size-fits-all, and to be individually tailored to meet the needs of their students. The shared experiences of the participants in this study indicated that two –way communication between school and home, transparency, and individualizing instruction for students could positively affect student achievement.

Theme Two: Students

The next stakeholder group important to student success in the online school is the students themselves. Epstein (2001) encourages schools and families not to forget to include students as participants when making decisions about education. Epstein (2001) notes:

> "It is more important, indeed crucial, to recognize that the student is the active learner, ultimately responsible for his or her education, and the main communicator between school and home" (p.61).

Parents in this study express that students must be self-motivated, fully participatory, and accountable in order to increase achievement in the online learning environment.

Self-Motivation. The minor theme of self-motivation, self-efficacy, or self-direction are consistent themes found in research regarding successful students in online school environments (Artino, 2008; Rice, 2006; Roblyer & Marshall, 2002; Ronsisvalle & Watkins, 2005). Artino (2008) defines self-direction as "Learning that occurs largely from the influence of students' self-generated thoughts, feelings, strategies and behaviors, which are oriented toward the attainment of goals" (p.38). Participants in this study indicate parental involvement encourages students to increase self-motivation or self-reliance. The necessity of students being self-motivated to achieve success in the online school was the top concern for parents of non-

successful students (n=41). Self-motivation was in the top two responses for parents of successful students, being mentioned 35 times during the interviews. All of the students who were identified as successful going to school online were also identified by parents as being self-motivated or self-directed. Additionally, all parents who identified their children as being unsuccessful indicated that self-motivation would have increased success for their own children.

Epstein (2001) advocates for students to be active in their own education. Evidence shows when learners have some control over their learning environment, they are more successful (Cavanaugh et al., 2013; Kerr, 2009; Rosa & Lerman, 2011; Thomson, 2010a; US Department of Education, 2009). Allowing students to have some control in decision making will increase independence in many areas of their lives. Parents of children who are showing academic success and exhibit self-motivation indicate they are able to allow students to set their own schedules (n=11) and have choice in preferred activities (n=25). They also suggest students who are self-motivated do not need as much monitoring as others (n=13). One parent said once her child demonstrated she was going to be successful learning online, she just had to add water and watch her grow.

Not all of the participants in this study would agree with the idea that increased freedom equates to increased success. Online learning is full of freedom and independence, yet over half of the participants in this study had students who failed. Most parents indicated too much freedom is detrimental to student success. One parent pointed to flexibility and freedom in learning as the reason her children are currently lacking the credits to graduate with their cohort group. Many students thrive with the freedom to make decisions about their own education as is noted in the literature, but the question remains does the choice and/or control create success, or are successful, self-motivated students inherently ready for freedom and control? It is not clear

from the literature which is the case. Parents of students in this study would indicate additional choice or freedom without consistent involvement by parents could result in increased failure rather than increased success.

Research suggests self-motivation as a trait helpful to students being successful in an online school but does not indicate how to foster self-motivation (Artino, 2008; Rice, 2006; Roblyer & Marshall, 2002; Ronsisvalle & Watkins, 2005). When asked if it was possible to teach a student to be self-motivated, parents were divided. Some thought children were born with it. Others thought that it was possible to teach children to be self-motivated, but that instruction was most effective when started at a young age, with appropriate tasks.

Participants also encouraged other parents considering enrollment in an online learning environment to examine the level of self-motivation or self-direction exhibited by the student to determine if online learning would be the best placement. Michael clearly stated that if the student is "unsure about what you want to do, or you're hesitant or don't really care for school, I think online school is a disaster." Nathaniel echoed the thought that students must be motivated to go to school online. He noted:

> "Ask them [other parents] if their child is highly motivated. If they are, I would say by all means, online school is a very good option. And if they were struggling to pay attention or to do their work in a brick-and-mortar school, I'd tell them to be very wary of it."

Roblyer and Marshall (2002) created a survey instrument to use with online high school students to determine if they could predict success or failure by assessing particular character traits. Researchers could predict success more often than failure with this instrument (Roblyer & Marshall, 2002). One finding from this study was the most important characteristic of a successful online learner is belief in the learner's ability or self-efficacy. Participants in this

study echo the finding that self-motivation or self-efficacy does affect student achievement. Parents report that parental roles and level of involvement change with the level of self-motivation for the student. Participants also advocate assessing the level of self-direction of the student prior to enrolling in an online school.

Student participation and accountability. Paired with self-motivation, this minor theme requires students to participate and be accountable for their own learning. Research in online education supports the need for students to be motivated to participate and complete courses (Archambault et al., 2010; Artino, 2008: Picciano & Seaman, 2010; Roblyer & Marshall, 2002). Epstein (2001) speaks to the amount of overlap in the forces of family and school when students are engaged in one or the other. When students are engaged in schoolwork, they may still be influenced by their family, and the converse is also true. In a full-time, virtual school, when school and family are so interrelated, it is important not to forget that participating students are vital to the equation. Participants in this study indicated students must be full participants in their education in order for online learning to be successful (n=49).

Parents of students at OHS corroborated Artino's (2008) finding that online learning does not work effectively if students are not involved or engaged. Nathaniel and Cari shared they had to sit with their children to get any participation from them. Cari related her experience with Christian going to OHS as a "full-time job"; if he was in class or working on an assignment, so was she. Christian would not participate and was not successful, even with that level of parent support.

Michael mentions if students are not independent or accountable, the online school is not going to "light a fire under them." Maria found just the opposite to be true for her children. Both Brock and Aria had attended regular public and brick and mortar charter schools prior to

enrolling at OHS. In Maria's opinion, they were academically unsuccessful in their former schools, but this changed, especially for Aria, upon enrolling at OHS. She shared:

> "She's [Aria's] more responsible now that she's been doing the online class because she knows she's responsible to do it. I think that's made her more responsible because she actually does all her work now, where she wasn't doing it all before…You know she gets up every morning and she gets right on the computer and starts doing work. If she has a project due, she does them on the weekend and stuff like that. I don't have to tell her to do it. And she was never like that before."

Kirby et al (2010), interviewed college students with prior online school experience during high school. This sample of students, who had successfully completed some of their education through an online program, were more likely to attend brick and mortar colleges and universities rather than trade schools or community colleges (Kirby et al., 2010). Nearly all students interviewed credited experiences learning online as preparing them to be more independent, responsible and self-disciplined in their postsecondary studies. They found students indicate their experiences attending school online helped them develop independence and self-discipline needed to excel.

Experiences relayed by participants such as shared by Maria above, indicate the findings in Kirby et al. (2010) are accurate for some students. Other experiences related by parents of less successful children denote when students are not accountable or participatory in their own education, the benefits of increased self-motivation or the hope for added independence go unrealized. Multiple parents, who had difficulty eliciting participation from their children, thought it might be easier to do the work for their children than to fight them to participate; however, all noted even that would not have been effective.

The experiences of the parent participants in this study do not always follow research such as in Kirby et al. (2010) showing that online school experience can increase achievement for students. Online school experience can positively influence student achievement as long as students fully participate in their own education and are accountable for learning. According to the parents in this study, no amount of parental involvement will be able to overcome an unwilling student.

Theme 3: Parents--Monitor, Mentor, and Motivate

Multiple studies addressing student success in the online environment list parental involvement or adult mentoring as an important factor of that success (Archambault et al., 2010; Black, 2009; Cavanaugh et al., 2013; De la Varre et al., 2010; Feng & Cavanaugh, 2011; Liu et al., 2010; Liu & Cavanaugh, 2011; Repetto, Cavanaugh, Wayer, & Feng, 2010; Roblyer & Marshall, 2002). While studies identify the importance of having a caring adult or mentor to guide students while they are in the online environment, none discuss the perceptions or roles of parents in an online school. There is a gap in professional research related to the roles of parents in a full-time online school. Research question three endeavored to uncover the perceptions of parents concerning their role in the achievement of their children while enrolled in a full-time, online school. In all cases, parents reported their roles to be that of monitoring, mentoring, and motivating.

Individuals who participated in this study were all actively engaged in the education of their children. All indicated they communicated with teachers multiple times each month, checked their students Learning Management Systems (LMS) several times each week, asked their children about their school work every day, and helped with assignments many times each week. Those who indicated their students were not successful in an online school as evidenced

by failing courses, dropping out, or being credit deficient, reported they were diligent in their roles, but were unable to get their students to participate.

When asked about time commitments of parents with students at an online school, parents reported they spent much more time engaged in learning with their students while they were in an online school than they spent when students were enrolled in a traditional school. If a student was spending 30 hours per week engaged in school activities, parents reported a mean of 13.8 hours spent engaged in learning with the students. The range was from two hours through 29 hours for the parent for every 30 hours the student spent. Parents of successful students reported spending less time with their students once routines were established. In sixteen instances, it was noted students who were more successful did not need as much monitoring as other students.

Beyond the time commitment, parent participants noted they felt that monitoring children included questioning about assignments, monitoring assignment completion (n=68), setting a schedule for/with the student (n=44), and advanced preparation of student materials (n=22).

Several studies have found negative correlations between parental involvement and student achievement at brick and mortar schools. Chen and Gregory (2009) and Fan and Williams (2010) both indicate parent communication with the school has a negative relationship according to student perceptions. Both authors postulate a reason for this negative relationship may be that by the time parents communicate with the school, students are in trouble due to a lag in academic performance or because of disciplinary issues. Only parents of less successful students related perceptions indicating monitoring causes conflict (n=12). Nathaniel remembers many nights, after working all day, coming home to sit with Brian to ensure he was completing some work. He shared about half of the time, this level of monitoring caused discord, and

Brian's work would remain unfinished. Black (2009) surveyed parents and students at Florida Virtual School to determine the effect of parental involvement in the online setting. This study found there was a statistically significant relationship between parental instruction and reinforcement. Parental reinforcement or encouragement can increase a student's grade by 0.583 (Black, 2009). Parental instruction, though, had a negative relationship and impact on student achievement, lowering grades by 0.61. This could be attributed to parents attempting to engage their students in difficult tasks or seeking to help them persist when learning is difficult. Parents also indicated that the amount of time spent endeavoring to inspire participation from the child who was less successful caused conflict with their other children, as well. Again, parents of successful students did not report any conflict or difficulty with inspiring their children through instruction, even when students were academically challenged.

Much of the research related to parental involvement is conducted in elementary settings and parental involvement abates as students get older (Catsambis, 2001; Chen & Gregory, 2009; Epstein, 2001). High school parental involvement research often centers on the relationship between parental aspirations and future success, or relationships between parents attending school activities and student success (Catsambis, 2001; Chen & Gregory, 2009; Fan & Williams, 2010; Mo & Singh, 2008). The type of daily monitoring required for parents of children in a full-time, online school is more like the teacher in the classroom. Participants in this study noted their roles being like a teacher many times (n=18) as well as providing advanced preparation of materials and/or schedules for students (n=55). Current research studies do not include effectiveness of this level of involvement and monitoring for parents currently. Chen and Gregory found high school students would prefer their parents to support them from afar (2009). Researchers make the assertion teenagers would like their parents to be involved by expectation

rather than by monitoring their homework or serving with the parent teacher association. The authors further explain this may be related to students asserting their autonomy in this stage of their lives.

Even with conflict or the possibility of negative relationships between parental involvement and student perceptions, the participants were clear that in the online learning environment monitoring was important to student success, and lack of parental involvement could result in failure. Shelli shares that both of her students are behind their graduation cohorts because of lack of monitoring in the later years that the boys attended online school. In the early years, when the boys were in elementary and middle school, Shelli's husband was able to be home with them during the day to monitor their education, but a job change meant that both boys were home alone. Shelli shared:

> "This last couple of years, the boys were kind of a little more on their own. So that's kind of where we stared to flounder, is because we weren't here to…what do you call it? Keep an eye on them. And so basically, the older they got, the more we trusted them that they did their work, and they were doing what they were supposed to be doing, and they were doing the work while we were gone at work…I hate to admit, because they've got the whole house to themselves and they've got, you know, access to TV's and video games and computers, and you know, so it was easy for them to want to slack off because they had nobody at home to monitor them."

Along with monitoring progress at school, parents interviewed for this study indicated student mentoring was important when going to school online. Students are seeking connections and mentoring (Catsambis, 2001; Chen & Gregory, 2009). One way parents mentor students is by being available for them for immediate feedback. Thirty-eight times this theme of immediate

feedback was discussed by participants. Parents encouraged students to reach out to teachers but knew that being available to help students when needed or requested made a difference in achievement for students. While there is a gap in the professional literature regarding parents providing immediate feedback to students, one study did indicate that students in a distance education program who got electronic feedback from teachers (more immediate) versus feedback by mail (less immediate) had greater academic achievement on the final exam in the course (Lemley et al., 2007). Being careful not to over generalize, parents of both successful and unsuccessful students discuss part of their roles when students are in a full-time, online school is that of teacher (n=13). If parents are taking the teacher role, then more immediate feedback received from present parents could increase achievement.

Coupled with being available to answer questions or increase student understanding, parents report that a very positive element of their role included spending time with students and engaging in learning with their children. Mo and Singh (2008) found a relationship between positive parent/child relationships and increased student engagement in a traditional school setting. All of the parents in this study were engaged in the home environment with their students. They all report positive relationships with students, and point to experiences in the online learning environment as enhancing parent/child relationships. Because all learning happens in the home setting, often with parents present, all parents reported enjoying learning about student academic strengths and weaknesses (n=26). A benefit of children attending school in a full-time, online school is parents can try to motivate their students as they have an intimate knowledge of children and their needs. Many parents point to motivating students as important to their success. Cari talked about her increased understanding of her son, Christian and his ADHD. She shared:

> "I learned a lot about Christian. About how he thinks and how he learns. I actually recognized more of the struggle he has to put thoughts together with the ADHD. I mean, that challenge, [I] understand a little bit more about how that makes things harder for him to put things together. Not that it's impossible, but I can see the hurdles that he has to go through to do that. I did think it was a positive thing to get to know him better and do spend that time with him."

Where some of the parents would question the finding above in Mo and Singh (2008) is in the claim of increased student engagement. Parents who could not engage students in high school curriculum by sitting with them, attending class, or encouraging, would not say improved parent-child relationships amplified student engagement in school.

Parents who engage in learning activities with children are not unique. Epstein (2001) discusses this type of parental involvement as having a "school-like family" (p. 32). A school-like family is one where learning and family activities are interconnected and natural. Parents take students on educational outings, increasing knowledge and academic skills as a purposeful part of their roles as parents. Many parents in this study indicated regardless of the school setting their children were engaged, involvement would be part of their responsibility as parents. Melody, a single mom, states this emphatically:

> "…Whether you choose public school, the standard public school, or an alternative form of homeschool, or any other thing, I think parental involvement is huge and really impacts a child's education no matter what direction you choose. And I worry that as a society parents have gotten away from that a little. Probably also because of the need for everyone to go off to work and earn a living and it's hard to deal with. But I think that part of what we've seen in the break down in education is not just a breakdown in the

> education system, it's a breakdown in what is happening at home and the parents drifting away from that concept."

A unique aspect of full-time, online schools in this regard is parents can, and often do, attend class with their children. Maria attends most of the Spanish classes with her students as she finds them enjoyable. Multiple parents noted working through assignments and projects with students regularly. On occasion, a second time through the course for the parent helped their own attitude toward a difficult subject.

Parents indicated 44 times during the interviews that time with their student, whether it was struggling through a proof in geometry or just being able to eat lunch together, was a positive outcome of being part of a full-time, online school.

Parents of students interviewed for this study suggested an important parental role in an online school is motivating their children to strive to attain a better future. Research conducted in brick and mortar settings suggests parental aspirations for children are related to future student success (Catsambis, 2001; Chen & Gregory, 2009; Fan & Williams, 2010; Mo & Singh, 2008). Researchers suggest parents who discuss with their children their future expectations positively affected the academic success or failure of those students. Fan and Williams (2010) also found a strong correlation for parental aspirations. They suggest high school students who knew their parents were engaged in their education exhibited increased confidence in their own abilities and were more interested in school. All of the parents in this study shared specific hopes and dreams for their children. Participants indicated they took opportunities to impart those expectations and dreams to children directly through conversations and by example. When a student struggles to succeed in school, parents sometimes have to re-evaluate their aspirations for that particular

student. Nathaniel discusses this experience when his son, Brian dropped out of school and took the GED test rather than earning a high school diploma. He shared:

> "When your child is born, you have certain expectations and hopes. And as they get older, you discover that they have a mind of their own and interests of their own. And as a parent, you try and adjust your dreams and aspirations and try to help them succeed. I guess that's how we've dealt with it. It's been a very painful process though."

Parents continue to share aspirations with their students through school and beyond, hoping to affect the future for their students.

Aspirations research is effective for students who are successful in school, and researchers show that it makes a difference in academic achievement (Catsambis, 2001; Chen & Gregory, 2009). The participants in this study all explicitly shared their hopes, expectations and dreams with their students, yet, over half of them failed. They were involved in student activities from booting up the computer through checking grades on the assignments, yet sometimes they could not rouse students from their beds. Parental involvement and parental aspirations did not improve student achievement for the two students who dropped out of OHS and never finished a high school diploma. In this way, the shared experience of parents does not match some of the current literature regarding parental aspirations affecting student achievement.

In fifty-seven instances during the 16 interviews, parents determined helping students discover the relevance or importance in their own education as a factor to increase success. Epstein(2001) echoes this sentiment when she discussed both teachers' and parents' recognition of the fact that students are key players in their own education. In this study, parents repeatedly related their experiences with children acknowledging the importance of education as a factor in

their success. Maria's experience with Aria illustrated student awareness of the relevance of an education in their lives can make a difference in performance. She stated:

> "I think she [Aria] has finally learned the importance of school and an education. I don't think she cared before. It was all about boys and socialization. And she's come to realize that school is important; it's something you need. You need an education to go on. And I don't have to make her, and I used to nag her all the time."

Michael, whose son Gabe struggled to find relevance in school, encouraged parents to be supportive of students and to guide them toward an understanding the importance of planning for the future. Michael stated:

> "Every child is different and so you just have to find what their skills are and try to build upon those skills and try to keep them vested in their future, recognizing the fact that I think the hardest thing with teenagers is to get them out of the here and now. That they will actually have a future and they should probably do something now to prepare for that."

Students like Gabe and Aria have different educational experiences and outcomes, but their parents have the same desire for them. Parents recognize education is the key to a better future and a more productive life for their children. Even if children do not understand educational relevance currently, parents hope they will someday grasp those ideals to create a better future. It was because of this hope that parents made the sacrifice of time and energy to monitor, mentor, and motivate children while they were enrolled at OHS. The experiences of parents in an online school indicate that in a full-time, online school, the primary roles of the parent are to monitor, mentor, and motivate.

Conclusions

The questions examined in this mixed-methods study were:

1. What factors affect student achievement in a K-12 online school?
2. What variables correlate most strongly with student achievement in a K-12 online school?
3. What are the perceptions of parents concerning their role in the student achievement of their children while they were enrolled in a full-time, K-12 online school?

No single factor affects student achievement in a full-time, online high school. In this mixed-methods study, ex post facto data was examined for relationships between student achievement and socioeconomic status, grade level, family configuration, gender, the education level of the parent, and previous online experience. Significant correlations were found between GPA and grade level (r=.470), family configuration (r=.181), education of parents (r=.136), previous online experience (r=.131), gender (r=-.125), and socioeconomic status (r=-.119).While the correlations were weak to moderate, all students in the data set have characteristics represented in multiple variables. Because students exhibit multiple variables, it is difficult to determine the effect that a single relationship has on an individual student.

A series of semi-structured interviews were conducted with parents of children who currently attend or formerly attended a full-time, online high school. The shared perceptions of participants demonstrated achievement for students is affected by the performance of school, students, and parents. Scholars and parents agreed that the online school must communicate effectively in multiple ways with both parents and students (Archambault et al., 2010; Black, 2009; Diaz & Entonado, 2009; Hawkins et al., 2011; Mandernach, 2009; Thomson, 2010a).

Parents agreed full communication about resources would encourage families to engage in school more effectively. The experiences of parents add to the literature when they advocate for parent training on demand and partnerships with veteran parents during school start-up. Parents also illuminated the fact that when parents do not utilize the resources provided by the school or communicate with school personnel, students fail.

Participants in this study overwhelmingly appreciated the transparency provided for them in the LMS. Parents had full and continuous access to student grades, progress, time spent on lessons and units, and on-demand recordings of live class sessions. Parents indicate that knowledge of student progress gave them the tools they needed to assist their children. There are no peer-reviewed studies about transparency in the online environment, so the voices of parents do add to the body of knowledge. Scholars do indicate that time on the LMS is a significant variable related to increased academic achievement (Liu & Cavanaugh, 2011; Roblyer et al.,2008). The school must provide transparency to families through tools in the Learning Management System and information about student growth to parents. Parents of students who were not as successful were grateful for the tools provided by OHS, but transparency alone did not motivate or inspire increased success when learning online.

Finally, schools must also seek to individualize the student learning experience. Parents of students who were already struggling in school sought out a different experience for their children at a full-time, online school (Morabito, 2011). In some instances, the flexibility and control students had online was helpful and motivated students to be more successful as the literature indicated (Cavanaugh et al., 2013; Kerr, 2009; Rosa & Lerman, 2011; Thomson, 2010a; US Department of Education, 2009). In other cases, that freedom increased failure. Emerging technology utilizing adaptive computer testing to fully individualize the student

educational experience (Dreambox Learning, 2012) is promising, but too new to be vetted by research. Parents of children who were unsuccessful in the online learning environment admitted their children have been unsuccessful in multiple school settings, but indicate again they are looking for education to adapt to fit the particular needs of their student. It is in this way that they believe their children will experience success.

Students must be self-motivated, engaged in curriculum as a full participant in their own education, and held accountable. Research in online education supports the need for students to be motivated to participate and complete courses (Archambault et al., 2010; Artino, 2008: Picciano & Seaman, 2010; Roblyer & Marshall, 2002). Parents of children who were self-motivated, fully participating, and accountable found the transition to a full-time, online school to be pleasant and rewarding. They not only watched their children achieving and thriving in the online environment, but also could participate in learning themselves. Parents who identified students as not being successful were very involved, sometimes sitting with students for every lesson. Yet, they struggled to get students out of bed some days, and half of the children failed. Their experiences validate the research that students who are unwilling participants will not be successful learning online. While there is limited literature regarding the consequences of not being motivated to participate, the experiences of parents adds to the body of knowledge noting when students are not accountable or participatory in their own education, any benefit of increased independence or self-motivation provided by going to school online are unrealized.

Parents are the boots on the ground for full-time virtual schools. They are critical to the success of their children by being available to monitor, mentor, and motivate on a daily basis. Most of the research conducted in the area of online education is conducted in other settings (post-secondary or virtual course providers) and generalized to the K-12 setting (Black, 2009;

Dixson, 2010; Feng & Cavanaugh, 2011; Liu & Cavanaugh, 2011, US Department of Education, 2009). Though a thorough review of current literature was conducted, there were no studies investigating the perceptions of the roles of parents in the achievement of students enrolled in a full-time, online school. The volunteer participants in this study lend their voices to the discourse. Parents perceive their role as vital to children being successful. The parental roles vary based on the motivation level of the child, with self-motivated students needing reduced involvement from parents than less motivated students. Unfortunately, there are occasions when parents are unable to inspire their children to be active participants in their own education. In those instances, students are unsuccessful and often fail. If students are unwilling to be involved in their own education, and parents are unable to motivate them, it is rare that an outside force, such as the school, would be able to either.

The question regarding the factors affecting student achievement in an online school is as complex as the students who enroll. Students are not widgets, and cannot be expected or predicted to always act a certain way. That is what makes education of all types so complicated. Students are influenced by multiple factors, including those relationships found to be statistically significant such as grade level of the student, gender, or the education level of the parent. Students are also influenced by continuous involvement by their parents when they are going to a full-time, online school. As was evidenced by the experiences of the parents in this study, all of those variables influence success or failure of students, but unfortunately, not one is the solution for all students.

Recommendations for Further Research

It is important to continue studying the phenomenon of full-time online education as it is growing in popularity and scope in the United States (Cavanaugh et al., 2009; Watson et al.,

2011). While this study focused on ex post facto data and perceptions of parents in a full-time online setting, further research is vital in the field of online education to increase student achievement.

Due to the nature of a volunteer sample, parents who participated in this study were well-educated and actively engaged in the education of their children, regardless of the students' success or failure in the online environment. This was identified as a limitation of this study, and it would be enlightening to determine if sampling a population of parents who were less engaged would alter the conclusions. A more purposeful sample may highlight additional methods to assist students in this situation to be more successful at learning online. Catsambis (2001) describes how most of the research in parental involvement is conducted in the elementary setting, highlighting the need for additional research in the secondary setting. Students are more independent as they grow older, therefore additional research in the high school setting with less engaged parents could yield additional results.

This study did not examine the perceptions of teachers in a full-time, online high school. Moore's theory of Transactional Distance (1993) could be explored with both academically successful students and those who were less successful. With new initiatives such as blended learning, synchronous class sessions, and flipping the classroom, it would be informative to determine if the distance between teacher and student could be mitigated. Qualitative research exploring the perceptions of teachers in a full-time online school might alter teacher training and professional development for teachers in this modality.

Students who have selected to participate in a full-time online school is another stakeholder group that should be examined. Students have a great deal of responsibility and accountability in this setting. This study echoes the findings of other scholars who agree that

students who are self-motivated are more successful in the online environment (Artino, 2008; Rice, 2006; Roblyer & Marshall, 2002; Ronsisvalle & Watkins, 2005). Qualitative research is recommended to further determine how students become self-motivated, and what encourages them to work independently in an online environment.

Intelligent Adaptive Learning is a technology that warrants further study. The ability for a school or teacher to utilize technology to create an individualized educational plan for every student could change the way education is viewed online and in the traditional setting (Dreambox, 2012). Currently, there is no peer reviewed research examining the effectiveness of this modality of learning. Both quantitative research on effectiveness and design are necessary, as well as a qualitative study examining the experiences of students and parents.

The final recommendation for future study is to determine the causes for the difference in academic achievement for males in an online setting. In this study, gender had a correlation to academic performance, with males being slightly less successful than females. In the qualitative interviews, all of the children who were identified by parents as being unsuccessful were males. There may be other factors present in the high school education of males that help increase student achievement, such as extra-curricular activities, which are not as prevalent in an online school.

Implications for Professional Practice

There is little research conducted in full-time online schools (Black, 2009; Cavanaugh et al., 2009; Rice, 2009; U. S. Department of Education, 2009). The results of this study will be helpful to any online setting that is a diploma granting institution. Better understanding the needs of parents in the online setting can help schools like OHS provide training and support for newly enrolling families. Recommendations for parent training on-demand come from the participants

in this study and are a good idea for all online schools. The startup process is rigorous and can be confusing for families. Parents indicated that better communication from the school regarding start up could help students be more successful. Online schools need to provide adequate communication so that students get more positive start.

While schools such as OHS are public schools which generally have open enrollment, the parents in this study all agree with scholars that students who are self-motivated or independent learners have more success (Artino, 2008; Rice, 2006; Roblyer & Marshall, 2002; Ronsisvalle & Watkins, 2005). It could be effective to assess families prior to enrollment to determine if online learning is a good fit for the student, and if the parent is able to provide the level of monitoring, mentoring and motivation that is necessary to give students the greatest opportunity to succeed. Providing some type of screening during enrollment could help families make better decisions prior to enrolling in an online school to help avoid future failure.

Currently, Alabama, Florida, Michigan, and Virginia have mandated online learning for high school students as part of graduation requirements (Davis, 2013; Sheehy, 2012; Vander Ark, 2012). Multiple districts have also mandated an online course requirement for high school graduation (Sheehy, 2012). After the State Board of Education mandated online education in Idaho, voters in 2012 passed a series of referenda that overturned this mandate (Russell, 2012). The results from this study do not support a mandate for online education. Clearly, not all students are successful in this modality, even with constant support from school and parents. The parents in this study were involved, communicating with the school regularly, monitoring and motivating their students in a variety of ways, and yet, half of the students represented failed. Several did not complete a high school diploma. In addition, not all students are self-motivated, and only half of the parents believe that self-motivation or self-efficacy is able to be taught. If

that is the case, mandating online learning at the district or state level could have negative consequences for student achievement. States or districts that mandate online education need to guarantee that proper support is in place for students to be successful in that environment.

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Appendix A

Human Research Review Committee Approval

July 20, 2012

Heidi Curtis
2620 S. Rhineriver Court
Nampa, ID 83686

Dear Heidi:

This letter is to inform you that your project entitled "Parental Involvement and Student Success in K-12 Online Education" has been approved by the Human Research Review Committee. Your reference number is 3062012.

The required forms have been signed and a full copy is being retained in the Human Research Review Committee files.

Please let me know if you have any questions.

Sincerely,

Stephen C. Mountjoy

Chair, HRRC

scmountjoy@nnu.edu

Appendix B

National Institute for Health Certification

Certificate of Completion

The National Institutes of Health (NIH) Office of Extramural Research certifies that **Heidi Curtis** successfully completed the NIH Web-based training course "Protecting Human Research Participants".

Date of completion: 10/22/201Certification Number: 791782

Appendix C

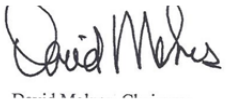
OHS School Board Research Approval

April 26, 2012

To Whom it May Concern:

This letter is notice that the XXXXXXXX Board of Directors gives our approval for Heidi Curtis to conduct her Doctoral Research at XXXXXXXXX. The scope of her research has been reviewed by the board and we are satisfied that this research could be beneficial for our school and other virtual schools.

Sincerely,



Chairman

Board of Directors

Appendix D

Electronic Notice

Email Text

Greetings!

My name is Heidi Curtis and I am a Doctoral Student at Northwest Nazarene University, studying the roles of parents in full-time, online schools. You are receiving this survey because you either have students currently enrolled at OHS or you have formerly had students enrolled and consented to allow your name to be on the school directory list.

I am looking for a sample of parents to participate in two interviews with me this fall. The questions will center on your hopes and dreams for your student, your role during the time that your student was enrolled at OHS, and why you chose virtual schooling as an option for your student. Each interview will be around 45-60 minutes.

If you are willing to allow me to contact you by phone for a short follow-up interview, please put your name and phone number in the blanks below.

Your responses will provide valuable information for policy makers, school administrators, and others in the field of online education as we endeavor to better understand how to help students succeed. Thanks for considering your part in this study.

If you have any questions, please don't hesitate to contact me. hlcurtis@nnu.edu or [redacted].

Qualtrics Text

For this research study, I am looking for parents who currently or previously have had high school students in a K-12, full-time, online school. The goal of this research is to understand the roles of parents when their children are engaged in an online school.

The research will consist of one or more short interviews during the next few months. If you are willing to be considered for participation in this dissertation study, please put your contact information in the boxes below. I will follow up with volunteers to determine eligibility for this study.

I am seeking parents of students who fit any of the criteria below:

- With students currently enrolled or previously attended a full-time, online school,
- With students who were academically successful or not academically successful in that environment
- Who enjoyed their experience or would never do it again,
- With students who are graduated, still attending school somewhere or dropped out of school

I am interested in **all** student experiences and parental roles. Please consider your participation in this research study. You are the pioneers in this field of study, and your experiences are valuable to expanding effective online education for students in Idaho and across the country.
If you are willing to participate in a short follow up phone call, please put your name, phone number, email address and best time to call in the box below.

Appendix E

Verbatim Telephone Script

Hello! My name is Heidi Curtis and I am a doctoral student at Northwest Nazarene University. Do you remember recently filling out a short survey about your role as a Learning Coach while your child was enrolled at Online High School? On that survey, you indicated that you would be willing to do a short follow up telephone interview. Is this a good time to chat for a few minutes?

[If yes] proceed

[If no] Is there a time that would be better that I can call again? Thank you for your time. I will call back at our appointed time.

[If not home, left message] My name is Heidi Curtis and I am a doctoral student at NNU. I am calling to ask _____ (participants name) a few follow up questions to an online survey he/she filled out. I will give him/her a call back at another time.

- How many students do/did you have at OHS?
- How long did you school at OHS?
- Is your student currently enrolled, attending another high school, gradated or not attending/not graduated?
- What was the approximate GPA range of your child while they were enrolled at OHS? 3.0-4.0, 2.0-2.99, below 2.0?
- Before you came to OHS, was your student on track to graduate, ahead of his/her cohorts, behind his/her cohorts?
- After you left OHS, was your student on track to graduate, ahead of his/her cohorts, behind his/her cohorts?
- While your student was enrolled at OHS, were you married, single, divorced, widowed, never married or other?
- While your student was at OHS, did you qualify for an internet reimbursement?

Thank you for being willing to consent to a follow up call. I appreciate your time. I will narrow my participants list call you back to schedule a longer interview with you if you are willing.

.

Appendix F

Informed Consent

A. PURPOSE AND BACKGROUND

Heidi Curtis, M. Ed., a doctoral student in Educational Leadership at Northwest Nazarene University is conducting a research study related to parental involvement and student success in K-12 online education. With this study, we hope to improve the educational experience and academic success of students who choose to school online. We believe that parents are vital to that success. We appreciate your involvement in helping us investigate how to better serve and meet the needs of students who school online.

You are being asked to participate in this study because you are the parent of a current or former online high school student.

B. PROCEDURES

If you agree to participate in the study, the following will occur:

1. You will be asked to sign an Informed Consent Form, volunteering to participate in the study.
2. You will meet with Heidi Curtis, primary researcher, twice for an interview either face to face or via the Internet with audio/webcam technology.
3. You will be asked to answer a series of interview questions about your experiences with online education and the role of parents/Learning Coaches in that process. This interview will be audio taped and it will last up to an hour.
4. You will be asked to reply to an email at the conclusion of the study asking you to confirm the data that was gathered during the research process.

These procedures will be completed at a location mutually decided upon by the participant and the primary researcher and will take a total time of about 120 minutes.

C. RISKS/DISCOMFORTS

1. Some of the interview questions may make you uncomfortable or upset, but you are free to decline to answer any questions you do not wish to answer or to stop participation at any time.
2. Confidentiality: Participation in research may involve a loss of privacy; however, your records will be handled as confidentially as possible. No individual identities will be used in any reports or publications that may result from this study. All data from notes, audio tapes or files will be encrypted and password protected known only to the primary researcher. In compliance with the Federalwide Assurance Code, data

from this study will be kept for three years, after which all data from the study will be destroyed (45 CFR 46.117).

D. BENEFITS

There will be no direct benefit to you from participating in this study. However, the information you provide may help educators to better understand the roles of Learning Coaches in the success or failure of students who attend full-time, online schools.

E. PAYMENTS

There are no payments for participating in this study.

F. QUESTIONS

If you have questions or concerns about participation in this study, you should first talk with the researcher. Heidi Curtis can be contacted via email at hlcurtis@nnu.edu, via telephone at [redacted]. If for some reason you do not wish to do this, you may contact Dr. Loredana Werth, Doctoral Committee Chair at Northwest Nazarene University, via email at lwerth@nnu.edu, via telephone at [redacted], or by writing: 623 University Drive, Nampa, Idaho, 83686.

G. CONSENT

You will be given a copy of this form to keep.

PARTICIPATION IN RESEARCH IS VOLUNTARY. You are free to decline to be in this study, or to withdraw from it at any point. Your decision as to whether or not you participate in this study will have no influence on your present or future status in your online school.

I give my consent to participate in this study:

_____ _____

Signature of Study Participant **Date**

I give my consent for the interviews to be audio taped in this study:

_____ _____

Signature of Study Participant **Date**

I give my consent for direct quotes to be used in this study:

_____ _____

Signature of Study Participant **Date**

_____ _____

Signature of Person Obtaining Consent **Date**

THE NORTHWEST NAZARENE UNIVERSITY HUMAN RESEARCH COMMITTEE HAS REVIEWED THIS PROJECT FOR THE PROTECTION OF HUMAN PARTICIPANTS IN RESEARCH.

Appendix G

Interview Questions

1. Spend some time to get to know the participant and the student(s)
    a. The schooling history of their student
    b. Family Configuration
    c. Previous Online Experience
    d. Gender
    e. Grade level
    f. Education of the parent
    g. Academic Record of the student(s)
        i. GPA (approximate range)
        ii. Number of credits earned while at OHS (on track to graduate now or when they left?)
        iii. What is student doing now (HS graduate? Drop out? Schooling somewhere else?)
        iv. Student plans for the future
    h. Academic strengths/academic challenges
    i. Working experience of the family (is someone at home with the student, or is he home alone)
    j. What extra-curricular activities are students involved in?
    k. What other socialization are students getting?
    l. What drew this family to a full-time, virtual school?
2. Tell me about your own high school experience? Positives? Negatives?
3. Tell me how your high school experience is different than that of your student? Similar?
4. Tell me about a typical day of school for your student?
5. Tell me about your duties during that day?
    a. Advanced preparation?
    b. Number of hours during that school day?
    c. Grading Monitoring student?
    d. How do you help _____ monitor his education?
6. How was/is that role different than it was when your child attended a brick and mortar school? (Can be changed to how it WOULD be different if your child was attending….)
7. In your experience, what qualities do students need to have to be successful when learning online?
8. In your opinion, what should parents do to help their students be successful learning online?
9. Which of these that you mentioned are you the best at? Are some of these qualities more challenging than others?

10. Do you think parents should have responsibilities or accountability in the success or failure of students who learn online? Why?
11. If you were giving yourself a grade for your level of involvement with your child while they were at OHS, what grade would you give yourself (A-F) and why?
12. Series of questions about their involvement with online learning:
    a. How often did you communicate with teachers?
    b. How often did you check your child's LMS?
    c. How often did you read and respond to email?
    d. How often did you ask your student about schoolwork?
    e. How often did you help your student with an assignment?
    f. If your student was going to school at OHS 30 hours per week, how many hours would you say you were engaged in school related activities with your child?
    g. Was this more or less time than you were spending before?
13. Why choose a full time school rather than just homeschooling?
14. What is the best part about being a learning coach?
15. What were some of the more frustrating parts about being a learning coach?
16. On the days when you wanted to quit, what kept you going?
17. How much responsibility did you take on for the success or failure of your student? Did their performance reflect on you?
18. What are some of the positive things you gained by having your child enrolled in OHS?
19. Did you have negative experiences at OHS? Are you willing to share any of those with me?
20. If you are not attending OHS any longer, why did you leave?
21. Can you give me two or three adjectives that describe your role in your student's education?
22. If you had the chance to start over again, what would you do differently, if anything?
23. Share with me two or three things that you specifically did you help your child be more successful schooling online?
24. What advice would you give to others to help them be a successful learning coach at OHS?

Appendix H

Second Interview Questions

1. Did your student ever:
    a. Take a credit recovery class online
    b. Take an AP/Dual Credit or Concurrent Credit class online
    c. Take an elective through another school that was not offered in our catalog
2. What was the level of involvement of your student when making the enrollment decision to attend an online school?
3. One thing that the research shows is that families choose an online school option for flexibility.
    a. Can you tell me what type of flexibility an online school gave to your family, if any?
    b. Can flexibility be both positive and negative? How?
4. When you first enrolled your students at OHS, what did you understand your role to be?
5. How did that role change over time, if at all?
6. What did you get or what did you need from the school to help you in that role?
7. How would your student's experience have changed if you were not involved in his/her education?
8. Talk to me about relationships with teachers or other adults within the school.
    a. What involvement did your child have with his/her teachers?
    b. How did relationships with teachers make any impact on your student's education?
    c. What things did teachers do to make the experience for you and/or your student more effective? What could they have done to help your child be more successful?
    d. Were experiences with teachers in the online environment mainly positive or negative in your opinion? Please explain.
9. Did using technology, including Blackboard collaborate, email, LMS tools, gradebooks, dropboxes, intimidate you at all or cause a barrier to your child's education?

    No---go on

    Yes---In what ways? How did you overcome it?
10. How can parents help their student be more self-reliant or self-directed in their education?
11. Can you tell me about your expectations and goals for your student?
12. How have you been able to communicate those to your student?
13. How should the online school partner with parents to help students as successful as they can be?
14. Do you mind sharing with me your hopes and dreams for your students?

15. The working title of my dissertation is “Student success and parental involvement in a full-time, online high school.” With that title in mind, do you have anything else to add about your role as a parent in your child’s education?

    Thanks for talking with me over the past few weeks. Is there anything you would like to add to what you have provided or share any additional information with me before we conclude?

Appendix I

Debrief Statement

Thank you for your participation in this study.

After we have an opportunity to analyze the data, we will email you the results and ask for feedback. Mainly we want to ensure that we captured the essence of our discussion, accurately portraying our discussion and your thoughts. This study will conclude by March 31, 2013.

Questions
In the meantime, if you have any questions or concerns, Heidi Curtis can be contacted via email at hlcurtis@nnu.edu , via telephone at [redacted].

Thank you for your participation!

Heidi Curtis
Doctoral Student
Northwest Nazarene University
HRRC Application# 3062012

Appendix J

Member Checking Email

Date

Dear---

I hope that this email finds you and your students well. Thank you for your participation in the study entitled *A Mixed Methods Study Exploring Parental Involvement and Student Success in High School Online Education.* I wanted to let you know some of the themes that resulted from the interviews in this particular study (see below). Please let me know if these accurately depicted our conversation. If you have any suggestions, modifications, or questions, please let me know by Monday, March 4, 2013.

The purpose of this study was to explore the perceptions of parents of students who were/are enrolled in a full-time, online school to find out about parental roles in academic achievement.

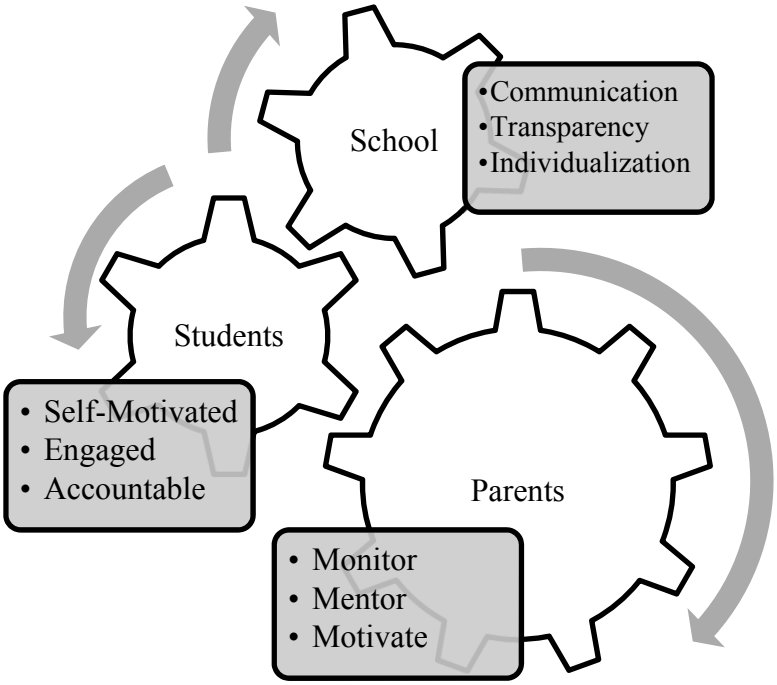
The guiding research questions in this study were
1. What factors affect student achievement in a K-12 online school?
2. What are the perceptions of parents about their role in the achievement of their children while they were enrolled in a full-time, online K-12 school?

There were many themes that emerged from the interviews that you participated in. After reading, re-reading and coding the transcripts, the results showed that student achievement is affected by three main groups: The School, the student and the parents. The figure below is my visual representation of these themes.

Schools: For students to be successful, communication should be a two way street. Communication between home and school is important to encouraging success for students. Communication would include on demand parent training so that parents know the system and how to help their students be successful.

Online Schools should provide opportunities for transparency. Parents noted that the transparency they found in the online setting helped them help students have more success. There was the idea that in their former schools, parents were not aware that students were behind until it was too late. In the online school, one of the things that was helpful to parents was to have the tools necessary to see what was coming up in the curriculum.

The last theme that emerged was that school should not be one size fits all. Online schools should use tools and technology to help individualize instruction for students. While this idea is a good one, participants note that it would be difficult to do and the technology might not be there yet to make it happen.



With increased communication, transparency, and individualization, schools can help students be more successful online.

Students have a role in their own education as well. Students who are self-motivated are more effective online learners than those who need careful monitoring. Some of you responded that the parental role changed as your students became more independent learners. Others mentioned that online schools were effective learning environments for students who were self-motivated.

Students in the online setting must be engaged and participating. Some of you shared experiences about students who did not engage and would not participate in their own learning. Many of you agreed that parents and teachers cannot do the work for students and they needed to be active in their own learning to be successful.

There is increased accountability for students in the online setting. Students must be able to reach out to teachers and communicate effectively, advocating for themselves to be successful. Others of you mentioned that you had seen online schooling help your students to be more independent as you set expectations early.

The parent role when students are enrolled in a full-time, online school is to monitor, mentor and motivate. Many of you used these exact words when speaking of the part that you play in the education of your children. You talked about setting expectations, creating a schedule and checking the LMS to make sure that work is being completed. You talked about checking work and being available for immediate help so that students are not stuck. You reported that the time commitment was larger with online schooling than it had been in a brick and mortar school, but also spoke of the time that you spend with your kids as being a positive benefit of going to school online. You talked about the monitoring sometimes causing conflict and the balance between family and school. You talked about the danger of allowing students too much freedom

and that without your monitoring, students might fail. You also talked about being available for students to help push them through their studies and that this role was vital to student success.

If these ideas do not reflect your experience or you would like to comment further, please respond to this email or contact me at the number below. Thanks again for participating in my dissertation study. It would not have been possible without you.

Heidi Curtis
Doctoral Student
Northwest Nazarene University
hlcurtis@nnu.edu
Telephone: [redacted]
HRRC Approval# 3062012

Appendix K

Complete List of Codes from Interview Data

Successful (importance)	# of responses	Unsuccessful (importance)	# of responses
Parent monitoring	37	S. need self-motivation/drive/focus	41
Self- Motivated	35	P.Available/support/encourage/coach	41
Time with student (positive)	29	Educ not one size fits all	36
S. Immediate feedback	29	S. relevance of education	35
P.Available/support/encourage coach	29	Daily schedule/lack of schedule	33
Being there makes difference	28	P. Monitor and Question	31
Flexible schedule=preferred activity	25	S. Needs increased accountability	29
S. relevance of education	22	Technology challenges /LMS	29
P. High Expectations	22	S. Lack of participation	28
S. responsibility/accountability	21	Requires more parent time	28
Communication with school	18	Communication with school	27
Transparency	14	Immediate Feedback (sitwith them)	20
More success=less monitoring	13	Flexible Schedule (need/utilized)	17
Self-organize/self-schedule	11	Know your student	17
Access to teachers (positive)	11	Transparency	15
Advanced Preparation for student	10	Time with student (positive)	15
Feedback from teachers	10	P. Trying to motivate	14
Know your student	9	Access to teachers	13
S. Maturity helps	8	Monitoring causes conflict	12
Parent assumes teacher role	8	Advanced Preparation	12
Fun learning with student	7	Not monitoried=not successful	12
Quality of curriculum	7	P. sit with them to do work	11
S. Perfectionist	6	Teacher role	10
T. Engagement of students	6	S. Did not connect with teachers	9
Developing Capacity (let them fail)	6	Developing Capacity (let them fail)	9
Educ is not one size fits all	5	Fun learning with student	9

Parent time commitment	4	Minimize distraction	9
Tech challenges/LMS	4	T. Engages students	7
Dedicated study area	2	Can't do it for them	6
Accreditation/diploma important	2	P. Responsibility for failure	6
		P. don't understand student motivation	5
		Dedicated study area	5
		S. same result in future?	4
		S. Negative experience with teachers	3
		High Quality curriculum	3
		Successful students=less monitoring	3
		Accreditation/diploma	3
		T. Knowledge of students	3
		Large S. T. Ratio	3
		Attendance	2
		High Expectations	1
		T. Show own personalities	1
		Maturity helps	1