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The Effect Academic Self-Efficacy and Locus of Control Have in the Successful Completion of High School Cyber Courses

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THE EFFECT ACADEMIC SELF-EFFICACY AND LOCUS OF CONTROL HAVE IN THE SUCCESSFUL COMPLETION OF HIGH SCHOOL CYBER COURSES

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Little is known about the inner workings of virtual schools, and despite this, increasing numbers of parents and students are choosing cyber school as their platform for their education. Growth in the number of cyber charter schools, and their enrollment, continue to climb higher despite limited evidence of their educational effectiveness. Indications are that cyber charter enrollment demographics, while being somewhat elusive, show that many cyber charter schools are enrolling a larger percentage of students who may not possess the internal beliefs, or skill sets, that are suggestive to being successful in the online educational environment.

This mixed methods study examines the relationship between students' academic self-efficacy, their locus of control, and their earned grades in the completion of high school cyber courses. The answer to these questions could have implications on how schools and students decide if online learning is a suitable choice for particular individuals.

The quantitative findings in this study provided support to the relationship of academic self-efficacy and students' earned grades in high school cyber courses. This study did not find quantitative support for a relationship between locus of control and students' earned grades in high school cyber courses. The qualitative findings of this study, while supporting the quantitative results, revealed the complex process of student migration from brick-and-mortar schools to virtual schools.

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I would like to dedicate this dissertation to my late father. He never truly knew the extent in which he has influenced me and my life's journey. I look forward to the day in which I can tell him.

The last six years have been trying times. Thankfully, I have been surrounded by supportive people in all facets of my life. I wish to thank my committee members, Dr. Douglas Lare, Dr. Meghan Twiest, and Dr. Richard Otto. To Dr. Lare for his passion and challenging perspectives. To Dr. Twiest, who knew when a kind word of support would help the most. To Dr. David Rheinheimer, for without his statistical mastery, this effort would be far less complete. To Adam, who is always there when I needed him. To the members of cohort 5 from which I have learned so much over the years.

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While online education has made great strides in recent years to become an accepted component of higher education, with many colleges now offering accredited online degree programs, the current opportunities and challenges of online K-12 education are still awash in the turbulent waters of regional politics, temperamental technologies, changing study skills for students, untested learning theories, and numerous innovative yet experimental teaching methods. From completely online charter schools to informal networks of home schools, the evolution of online K-12 education has been persistent since the earliest developments of the Internet. Questions of academic achievement, retention, progression toward degree, and social development of students in online programs is, however, a continuing question for distance educators.

Tammy Ronsisvalle & Ryan Watkins (2005)

CHAPTER ONE

INTRODUCTION

"The current opportunities and challenges of online K-12 education are still awash in the turbulent waters of regional politics, temperamental technologies, changing study skills for students, untested learning theories, and numerous innovative yet experimental teaching methods" (Ronsisvalle and Watkins, 2005). Despite the unsettled environment, online learning continues to grow in both numbers of organizations providing it, and in student enrollment. The continued growth in online learning is centered in the segment of full-time virtual schools (Molnar et al., 2014; Watson, Murin, Vashaw, Gemin, & Rapp, 2013). It is estimated that the annual growth in enrollment within full-time virtual schools in the school year 2012-2013 was up 13%, with fourteen states experiencing enrollment growth above 18%, and 5 states experiencing enrollment growth in full-time virtual schools above 50% (Watson et al., 2013). The virtual movement is strong due to the potential to provide all students with increased access to a growing world of educational opportunities at a lower cost (Molnar et al., 2013), and the ability to provide students access to their education at any time, from any place (Mupinga, 2005). Also driven by external forces for a marketplace educational model, such as the implementation of laws supportive to the cyber charter mission and educational vouchers (Molnar & Garcia, 2007), online learning continues to thrive despite the reported short-comings of its performance as it relates to the common educational metrics of today (Miron & Urschel, 2012; Molnar et al., 2014).

As a method of delivery, online learning was originally utilized by smaller more remote schools to provide a limited number of students with enrichment opportunities or advanced placement courses, due to the lack of local funding or the inability to find qualified teachers (Barbour, 2009; Repetto, Cavanaugh, Wayer, & Liu, 2010). Today online learning attempts to

serve the entire spectrum of students, including those with special needs and students at-risk of dropping out of school (iNACOL, 2013; Repetto et al., 2010; Vadell, 2013).

Cyber schools are not only serving a more diverse student population than originally conceived for, but the purpose for online learning has also evolved. When provided a choice to identify the purpose for which a school determined the need for delivery of courses through online content, 92.9% of respondents to Vadell's 2013 study of Pennsylvania schools, responded with "Credit Recovery" of previously failed classes as their main purpose. Other reasons for delivery of online content were also noted in Vadell's study, such as: remediation, Alternative education, acceleration, original credit acquisition, summer school, and home-bound instruction, were all notably rated at 75%. Despite the evolution of online learning and its intended purpose, limited research provides conflicting reports as to the level of student success achieved through online learning (Barbour, 2009; Bernard, et al., 2004; Journell, 2010; Molnar et al., 2013; Russell, 2001; Summers, Waigandt, & Whittaker, 2005; U.S. Department of Education, 2011; U.S. Department of Education, 2012).

Given the reported claims of cyber schools having poor academic performance, high student attrition rates, that online learning is used mainly for the purpose of credit recovery, and the high enrollment of students at risk of failing out school, further research is needed to determine what is needed to better ensure the success of all students participating in online learning (Barbour, 2009; Molnar et al., 2013). There are many variables that play a role in students' success and or failure in the online environment, this study examined the role of two specific variables: academic self-efficacy and locus of control.

Purpose of the Study

The purpose of this study was to examine and describe the extent at which academic self-efficacy and locus of control impact a student's earned grades in high school cyber courses, if any. A total of eight research questions are presented. The first main question examined the relationship, if any, of academic self-efficacy and the student's earned grades in online cyber courses. This was followed by three sub-questions controlling for the number of prior cyber courses taken, gender and ethnicity. The second main question focuses on the relationship, if any, of student locus of control and the student's grades earned in online cyber courses, followed by three sub-questions controlling for the number of prior cyber courses taken, gender and ethnicity.

The answer to these questions could have implications on how schools and students decide if online learning is a suitable choice for particular individuals. This research may also provide cyber organizations with information that may assist in the altering of the typical cyber school offerings and methodology to better ensure the success of all online students.

Statement of the Problem

The problem and the need for this research revolve around the responsibility of communities, school districts, legislators, and educators alike, to provide each K-12 online student the support needed to be academically successful in the online environment. The reported common personal characteristics and attributes related to successful online learning such as, self-motivation, being positively disposed toward school, having good prior academic performance, and an internal locus of control (Dupin-Bryant, 2004; Kirby & Sharpe, 2010; Parker, 2003; Street, 2010), did not appear to be in alignment with the typically reported characteristics of a student at-risk of failing out of school who reportedly currently make up a

majority of the online learning population (Archambault et al., 2010). As Dupin-Bryant (2004) stated, "…until the relationship between retention and pre-entry attributes are more clearly identified, steps will not be taken to help students at-risk complete online courses and drop-out rates may remain high" (p. 200). This suggested the need for a more focused examination of the some of the variables that influence a student's success when learning online. Two such variables are academic self-efficacy and locus of control as it relates to the online high school students cyber course performance.

Theoretical Background

This study was framed in the general theoretical background of Rotter's (1966) social learning theory. Rotter's theory of social learning was a departure from the instinct and drive based theories of the time (Mearns, 2015). Instead, Rotter chose the path of motivation, and selected the *empirical law of effect,* to be the basis of his theory. Essentially, Rotter believed that people are motivated to seek positive experiences (stimulation/reinforcement) over negative experiences (stimulation/reinforcement). In Rotter's social learning theory, positive experiences tend to strengthen an *expectancy* that a particular behavior will result or be followed by that same positive experience in the future (Rotter, 1966). Rotter further explains that should the positive experiences (stimulation/reinforcement) not occur; the *expectancy* of that particular behavior will dissipate.

Over time, these expectancies will begin to generalize from certain specific situations to a series of situations that are deemed similar, which essentially transforms into a generalized attitude, belief, or expectancy (Rotter, 1966). These generalized attitudes, beliefs, and expectancies, act to regulate choice behaviors, and can be subjective to influence depending on the value of the reinforcement. One strength of Rotter's social learning theory is that it allows

for the blending of specific and general constructs, allowing for more accurate predictions from these variables (Mearns, 2015).

Research Questions

The following research questions will guide this study:

1. What role, if any, does academic self-efficacy play in the grades earned in high school cyber courses?
    A. What role does academic self-efficacy play in the grades earned in high school cyber courses controlling for gender?
    B. What role does academic self-efficacy play in the grades earned in high school cyber course controlling for prior cyber course experience?
    C. What role does academic self-efficacy play in the grades earned in high school cyber courses controlling for ethnicity?
2. What role, if any, does locus of control play in the grades earned in high school cyber courses?
    A. What role does locus of control play in the grades earned in high school cyber courses controlling for gender?
    B. What role does locus of control play in the grades earned in high school cyber course controlling for prior cyber course experience?
    C. What role does locus of control play in the grades earned in high school cyber courses controlling for ethnicity?

Significance of Study

Academic self-efficacy and locus of control have been known to play a role in the success or failure of students' academic efforts, particularly for students in college (Cho & Shen, 2013;

Hodges, 2008; Putwain, Sander, & Larkin, 2013). However, little research has been performed for high school students in the virtual environment, in regards to the influence of one's academic self-efficacy and locus of control has on successful cyber course completion.

The results of this study could provide valuable information regarding the probability of success for students who wish to participate in online learning. This study may also stimulate renewed attention to the specific needs of students who are thinking of enrolling in cyber schools. In addition, the early identification of the potential lack of success in the online learning environment could greatly influence the current dropout rate associated with online learning by alerting students and schools for the possible need of interventions.

Every 29 seconds another student drops out of school, and not without significant impact at both the individual and societal levels (Dunn, Chambers & Rabren, 2004; Watson, & Gemin, 2008). For example, at an individual level, the typical median annual income for a person between the ages of 18 and 67 who has not completed high school is $25,000 in 2009. However, for the high school graduate in the same age bracket, the median annual income is $43,000 a year. From a societal perspective, the typical high school dropout costs the economy $240,000 in his or her lifetime in lower tax contribution and higher reliance on entitlement programs, and is more likely to be unemployed and in worse health (U.S. Department of Education, 2011).

Historically, schools have struggled with identifying and meeting the needs of students at-risk of failing out of school (Archambault et al., 2010; Repetto et al., 2010), as they may present a specific set of issues not easy to address in school such as, significant behavioral problems, emotional disabilities, and cognitive disorders. Increased political pressure, increased competition for financial resources, and the societal movement toward pro-choice opportunities, has made the struggle to educate all students even more difficult, for these schools can be

penalized or lose valuable financial resources that sometimes follow students as they move into the online learning environment (Molnar & Garcia, 2007).

For these reasons, further research is needed in determining the role academic self-efficacy and locus of control play in the success of students taking cyber courses.

Definition of Terms

1. Online learning – refers to the general process of a student learning through the use of a computer connected to the internet, in association with cyber schooling or virtual schooling, may also be referred to as distance education.
2. Cyber Charter School– associated with the homeschooling movement, represents full-time cyber charter schools and educational management organizations (EMO's), student is not typically enrolled in a brick-and-mortar school, all schooling is typically online with the parent being considered the "teacher" in a legal sense, teacher is essentially a director, cyber school provides the online materials needed, student to teacher ratio is two to three times higher than virtual or brick-and-mortar schools (Barbour, 2009).
3. Virtual Schooling – a system of educational delivery using asynchronous and synchronous methods, the teacher is leading the learning, similar teaching strategies used as traditional brick-and-mortar face-to-face schools when in synchronous mode.
4. Brick-and-Mortar – refers to a physical building where one would find an actual school. In this context, it relates to the traditional school setting.
5. Face-to-Face – refers to the interaction between teacher and student in a traditional classroom.
6. GPA – refers to the average grade points a student has received for completion of a course of study.

7. Blended Learning – an educational program that incorporates both online and face-to-face components.
8. Academic Self-Efficacy – a way of thinking about the beliefs that a student holds about their own academic abilities and is defined as a belief, or a confidence, that one can achieve a particular academic goal or outcome on a specific academic task (Bandura, 1977).
9. Locus of Control – an individual's belief regarding the causes of their experiences and the factors to which a person attributes their success or failure which is either internal or external (Rotter, 1966).

Overview of Methodology

This research study was composed of both quantitative and qualitative components, which were analyzed to determine to what extent does academic self-efficacy and locus of control influence a student's success in high school cyber courses. This study incorporated school districts of Northeastern Pennsylvania. Students must have been enrolled in at least one online high school cyber course.

Those students who wished to participant were requested to complete a relatively short survey of questions associated with determining the participant's level of perceived academic self-efficacy, as well as their locus of control frame of reference. The results of the surveys were then formulated and a determination was made as to the level of each student's perceived level of academic self-efficacy and locus of control frame of reference, being either internal or external. Students' final course grades were cross referenced with their academic self-efficacy levels and locus of control.

Traditional statistical procedures, including descriptive and inferential analyses, were utilized to analyze the quantitative data generated from the participant's survey results. Independent variables included the academic self-efficacy and locus of control measures, and the demographic variables included participant's gender, and the number of previous cyber courses taken. The primary dependent variable for this study was the study participants' average GPA for their cyber courses at the end of the 2015-2016 school year.

Descriptive statistics included means, standard deviations, and correlations for interval/ratio data and chi-square analyses for categorical data. Inferential procedures includes, t-tests, and multiple regression analyses to investigate the relationships between the independent and dependent variables. The sample size was $n = 48$.

The qualitative portion of this research study was the analysis of interviews involving a random selection of students who participated in the survey and have agreed to a personal interview. The Grounded Theory approach was utilized to examine the transcripts of student interviews, and that analysis helped to validate the results through a triangulation of a portion of the data. The intent of the interview portion of the study was to go beyond the description of data and to "generate or discover a theory" (Creswell, 2007), that supported our findings. The interviews consisted of questions that include the student's perceptions of their academic self-efficacy and locus of control. The sample size for this portion of the research was 10 students.

Delimitations, Limitations and Assumptions

There are some delimitation's, limitations, and assumptions related to this study which should be recognized. One delimitation is the study has a limitation geographically as the student selection is confined to Northeastern Pennsylvania schools and participating students. Thus, one should be cautious in generalizing the results for other counties, schools, and students.

The first limitation is that both academic self-efficacy and locus of control can appear on a continuum, and may vary depending on the particular task or topic; therefore caution should be taken in generalizing the results for all students and all tasks or topics. A second limitation is that the students participated in various courses of different curriculum and design, and this may have had an unknown influence on resulting data. A third limitation is that there may be other variables not included within this study which could account for additional variability in the dependent variable. Lastly, we must make the assumption that the students did answer the survey and interview questions truthfully as requested.

Summary

According to the research reviewed, online learning enrollments continue to grow at a comfortable pace. In addition, opportunities for all K-12 students to participate in some form of online learning continue to grow. The reported common personal characteristics and attributes related to successful online learning at the collegiate level such as, a high level of academic self-efficacy, and an internal locus of control (Dupin-Bryant, 2004; Kirby & Sharp, 2010; Parker, 2003; Street, 2010), do not appear to be in alignment with the typically reported personal characteristics of students who currently make up a majority of the secondary online learning population (Archambault et al., 2010).

As a result, this research study examined the relationship between a student's academic self-efficacy and their related success with online high school cyber courses. Additionally, this study also examined the relationship between a student's locus of control and their related success with online high school cyber courses. This study could provide school districts, and virtual schools alike, valuable information in addressing the educational needs of students who decide to attend today's cyber schools.

To best understand the issue at hand, it is important to review the history of online learning, and gain an understanding of the infrastructure supporting the virtual learning expansion. Discovering the forces responsible for cyber school development and its continued growth, becoming familiar with the students it serves, and the current state of legislative support, will help provide an additional valuable perspective to the complete issue at hand.

CHAPTER TWO

REVIEW OF LITERATURE

This study examined and described the extent at which student academic self-efficacy and locus of control impact student's earned grades in high school cyber courses. This chapter includes a review of literature that is pertinent to the topics of academic self-efficacy, locus of control, the students who attend cyber schools, as well as supporting topics that will aid in a more global understanding of the virtual learning arena.

In reviewing the literature, a number of topics emerged as necessary to explore to provide a solid foundation of knowledge to enhance credibility of this research. First, an understanding of the history of cyber school development is important so one can truly appreciate the current state of virtual education today. Secondly, educational policy over the past 30 years has had a profound influence on today's education (Molnar & Garcia, 2007; Molnar et al., 2013), and it is felt a brief review of this topic is needed as efforts to privatize education continue to shape the world of public and virtual education. Third, the infrastructure that delivers today's virtual education is both expansive and evolving (Watson et al., 2013), and requires examination. Having current knowledge of that infrastructure, and how it is evolving, is vital to have an understanding of the virtual school education process. Fourth, the list of characteristics describing the typical cyber students, a majority of which are at-risk of failing out of school, is expansive (Archambault et al., 2010; U.S. Department of Education, 1983; Watson & Gemin, 2008), and provides valuable insight to their learning needs. Lastly, an in depth review of current and historical research on the topics of academic self-efficacy and locus of control complete the offering.

Literature Selection

Several types of literature were chosen for this review. The literature, which included books, studies, and articles, came from several locations including peer-reviewed journals that included; *American Journal of Distance Education, Journal of Research on Computing in Education, Review of Education Research,* and more. This literature review examines and discusses research that has been conducted on the topics of online learning, academic self-efficacy, locus of control, at-risk youth, predictors of learning success, the characteristics of the typical online learning student, as well as other pertinent topics. Several statistical databases were consulted as were other national education websites.

Overview of Cyber School History

To know the history of cyber schools, we must start by examining the origins of distance education and recognizing that the development of K-12 distance education has gone through five phases all related to the technology used as the source of delivery (Barbour, 2009). Moore and Kearsly (1996) reported correspondence education (the very first form of non-traditional learning) was first utilized by the Calvert School of Baltimore in 1906 (as reported by Barbour, 2009). This was followed by the use of educational radio in 1929. Then the use of television was ushered in and America began using instructional television as a delivery method of a student's education. It was in the late 1970's and early 1980's, that the roots of what would become the virtual learning of today were planted. The technology used for delivery at that time was audio-graphics. Audio-graphic products of that era used a system of bridged telephone lines and modem linked computers to connect student to teacher, in what would eventually evolve into the web-based or online educational programs of today.

Online learning, or virtual learning (as defined by using computers), actually began in Canada in the early 1990's, in an effort to reach K-12 students who had unique academic needs such as enrichment opportunities, advanced placement courses, world language courses, International Baccalaureate programs, and where schools may have been smaller or more remote and could not afford or find qualified teachers (Barbour, 2009; Repetto et al., 2010). However, virtual schooling in the United States was mainly the result of state and federal initiatives in 1994, with virtual schools providing supplemental public offerings, and cyber schools being charter-based full-time schools (Barbour, 2009).

Coinciding with these mandates were the numerous legislative bills facilitating the growth and expansion of various forms of virtual learning, both private and public (Molnar et al., 2013). Many of these bills have fostered a marketplace model for public education, allowing for-profit providers to establish publicly-funded online cyber school programs, all in the belief that online technology will revolutionize education by decreasing the cost and increasing availability of a high-quality education (Molnar et al., 2013). There were 22 such bills approved between 2001 and 2007. Furthermore, "from 2008 to 2012, 157 bills that the National Conference of State Legislatures categorized as related to distance/online/virtual learning became law in 39 states, territories, or the District of Columbia" (Molnar, 2013, p. 3).

Influential Factors of Development

There have been other influential factors in the development of online learning. The Freedom of Education Choice movement which includes school vouchers, scholarship tax credits, education savings accounts, charter schools, public choice, and virtual schools, has likely influenced the documented growth in online learning through the intended increased competition for educational funding associated with each student (Molnar & Garcia, 2007). The marketplace

model of education nurtures a strong profit motive by Education Management Organizations (EMO'S) who have spent nearly $95 million dollars in taxpayer receipts, advertising their online schools since 2007, as reported by *USA Today's* Greg Toppo (2012).

Today, many cyber schools serve the entire spectrum of academics. The expansion of online learning, government mandates, and societal changes in attitudes towards public schools, has pushed cyber schools to now offer remediation courses, as well as credit recovery opportunities, in an effort to retain students at-risk of failing out of school (Repetto et al., 2010; iNACOL, 2013). Additional factors have also influenced online learning offerings and growth such as requirements for closing the achievement gaps, increasing graduation rates, and brick-and-mortars historical challenge of trying to serve the at-risk population (Repetto et al., 2010). This has resulted in a surge of online course enrollment for credit recovery, which now accounts for an estimated 62% of all K-12 enrollments (iNACOL, 2013). Despite the intense growth of cyber schools and the equally strong growth in online course enrollment, some claim that there is little of a research base on online courses let alone studies of the effectiveness of online learning for all K-12 students (U.S. Department of Education, 2012).

Privatization and the Impact on Education

The educational policy preferences over the past 30 years have had a profound influence on education as they have increasingly leaned toward privatization (Molnar & Garcia, 2007). With the implementation of the No Child Left Behind Act of 2001, and the American Recovery and Reinvestment Act of 2009 (ARRA), the federal government continues to expand its role and influence on education reform efforts (Superfine, 2011). This represents a shift from the 1990's focus on civil rights issues and ensuring the proper financial resources for poor and minority students, to a government focused on sanctioning schools when students fail to demonstrate a

certain level of performance (Superfine, 2011). In addition to spurring on state level policies that focus on educational improvement, the ARRA also spearheaded expansive charter school policies as key to educational reform. The two monumental acts, NCLB and ARRA combined, have favored methods of privatizing education starting initially with the creation of vouchers and the school choice movements. This later led to the organization and proliferation of charter schools, many utilizing a for-profit business model.

This continued preference toward the privatization of public education through the school choice movement has produced an entirely new educational model based on the for-profit business model (Molnar & Garcia, 2007). The advantages of the business model, or free-market model, for public education have been of great interest and much discussion over the last two decades (Molnar & Garcia, 2007). The nexus of the free-market educational model is the increased educational services offered will foster competition among providers. Ultimately, the intent is to improve educational services provided, at a cost less than services currently provided by public entities (Kozinski & Bentz, 2013).

Within the world of K-12 education, the efforts to privatize essentially fall into two categories: the overall management of schools, and the providing of supplemental educational services (Molnar & Garcia, 2007). Much of the privatization activity in the management of schools involves Education Management Organizations (EMOs), which were created and fueled by state charter school legislation when the school voucher programs began to fade in popularity. EMOs are organizations separate of school districts that essentially operate or manage public schools with public funds. This idea has been further supported by the No Child Left Behind (NCLB) legislation that imposes severe sanctions on schools failing to demonstrate Adequate Yearly Progress (AYP) through the federally mandated standardized testing requirements.

While EMO's typically operate for profit, only as of recent, has there been an emerging trend to non-profit EMO's (Miron, Urschel, Yat Aguilar, & Dailey, 2011). As of 2010-2011, for-profit EMOs are operating in 33 states, and non-profit EMOs are operating in 29 states. Together, they operate 35% of all charter schools, and enrolling almost 42% of all students in charter schools. The number of for-profit EMOs has grown from five in 1996, to approximately 100 as of 2011.

The second area of privatization that has been promoted through federal policy has been in the area of providing supplementary educational services; an area of recent growth for the for-profit EMO's (Miron et al., 2011). Here, NCLB created a massive financial opportunity for private for-profit providers to deliver private tutoring, operate summer schools, provide test preparation services, sell curriculum materials, as well as other services (Molnar & Garcia, 2007).

One requirement of any profit driven business model is the continued need to maintain profits. Given the nature of education, being labor intensive with a majority of expenses being for personnel, it has proven to be difficult for the for-profit EMO to operate brick-and-mortar schools at profit levels suitable for most EMOs (Molnar & Garcia, 2007). Because of continued pressure for profits, and the need to cut costs, the business model of education has ushered in a new method of delivery using online learning. That, perhaps, has been the most significant outcome of the education reform efforts to this point, resulting in the significant investment in the creation of virtual schools and online learning.

In the last decade, online learning has become the focus of the K-12 public education reform plan with advocates, including for-profit business leaders to non-profit service providers, and everyone in between. All proponents of online learning are touting the revolutionizing

impact of reduced cost and increased availability of a quality education (Molnar et al., 2013), to a point today, where some states are requiring online experience as a requirement for high school graduation (Watson et al., 2013). Supporting evidence is within the research by Watson, Murin, Vashaw, Gemin, and Rapp (2010), that estimates half of all school districts in the United States either have, or are planning to have, a cyber school of some form soon. The fact that 50% of schools are considering a cyber school of their own may represent something more significant. Many schools may be considering the creation of their own cyber school in an effort to plug the growing leak of critical funding that follows the child as they move from the public school to a private charter (Vadell, 2013).

The actual number of students taking some form of online learning is unknown. It is estimated that the number of students participating in online learning is likely to be several million students, which makes up over 5% of the K-12 population of the United States (Watson, Murin, Vanshaw, Gemin & Rapp, 2012), but not all online students are served their education through the same formats.

National Legislative Snapshot

In their 2014 report on the politics, performance and policies of virtual schools in the United States, Molnar et al., stated that "virtual education has become the focal point for policymakers interested in expanding education choices and improving the efficiency of public education…assumptions about the cost-effectiveness of virtual schools, coupled with (legislative) policies that expand school choice and provide market incentives attractive to for-profit companies, have fueled a fast-growing virtual expansion in the United States" (p. 1). This virtual expansion has been associated with substantial legislative activity.

In their comprehensive analysis of all proposed and enacted virtual school legislation if the U.S., Molnar et al. (2014) discovered over 1,400 bills, with nearly every state considering some form of legislation related to virtual schooling in the years 2012 and 2013 combined. A closer analysis revealed over 250 legislative bills related directly to K-12 virtual education, being introduced in the years of 2012 and 2013. Over 30 states were involved, enacting 70 bills, having over 90 fail, and over 90 still pending. Seven states alone had eight or more bills proposed in each, they include: Arizona, Florida, Pennsylvania, Tennessee, Utah, North Carolina, and Washington. The numerous proposals cover a wide spectrum of virtual school issues, some being narrow in scope, such as testing a preschool virtual curriculum, to others that provide funding for the exploration or creation of new virtual schools.

Some prominent themes regarding virtual legislation have been identified by Molnar et al. (2014) in their current analysis, those being finance and governance, instructional quality, and teacher quality. Legislative actions by state policymakers regarding these prominent themes are having different results. For example, Florida created a funding system that has substantially reduced enrollments within the state virtual school, and shifted those funds and enrollments to the for-profit organizations who lobbied for the legislation. In Pennsylvania, legislators have proposed 33 virtual school bills between the years 2012-2013 attempting to increase accountability and decrease funding of cyber charters, and all 33 bills have either failed or are pending. Molnar et al. (2014) also noted, that while some states continue to debate how to fund full-time virtual schools, especially recognizing the cost differences between cyber schools and brick-and-mortar schools, no state has yet to accept a proposed funding formula that ties costs of operating virtual schools to funding allocations.

Overall, efforts by policy makers to provide accountability of virtual schools through governance structures related to expenditures, and practices related to student benefit, have had little success. In the last several years, 11 states have proposed legislation calling for task forces and commissions to access and evaluate the virtual learning models; yet little success has been realized as only 3 states (Colorado, Maine, and Michigan) enacted any legislation, while bills in the other states (Arizona, North Carolina, Virginia, Oregon, Oklahoma, Pennsylvania, Iowa, Nebraska) have failed or are pending (Molnar et al., 2014).

Pennsylvania Legislative Snapshot

In 2012 and 2013, several Pennsylvania state legislators responded to the public controversies revolving around for-profit education management organizations (Molnar et al, 2014). Their efforts to curb the profiteering of education management organizations was aimed at reducing per pupil tuition allocations, capping state and school enrollments, and providing greater oversight of these organizations. As a result, in 2012, Pennsylvania proposed four bills that would address cyber-charter's ability to use public funding for advertising, lobbying, legislative action or consulting. In addition, the proposed bills would address compensation and bonuses for cyber school employees. All of the above bills failed. However, on June 30, 2012, house bill PA H 1330, passed and created a 17-member panel dedicated to examining the funding of charter and cyber-charter schools among other responsibilities. Again, in 2013, Pennsylvania had proposed numerous bills aimed at creating higher accountability and transparency of for-profit educational management organizations, such as K12 Incorporated, however, all bills have failed or are still pending.

Online Education Infrastructure

Over the years, the infrastructure to support and deliver online learning, to what is now estimated at several million students, has evolved considerably. Currently, there are six structures which online, and blended learning, utilize to deliver K-12 educational opportunities to students (Watson et al., 2013). First, there is the **single-district online program** that was created by a district primarily for students within that district (Watson et al., 2013). This delivery system may be fully online; it usually provides supplemental online courses for students who are enrolled full-time within its physical school (Watson et al., 2013). This is the fastest-growing sector of both online and blended learning, and in the school year of 2013-14, it is believed that 75% of all districts have some form of this option available. Once again, this growth may be the result of an effort to retain student funding within the district, as opposed to losing it to a private for-profit cyber-charter school (Vadell, 2013).

Second, a recent development to the online education infrastructure, is the arrival of the **blended school**. This is an increasingly important and rapidly expanding category of online learning (Watson et al., 2013). Blended schools are stand-alone schools that, with a traditional school code, deliver much of the school curriculum online. However, the blended school retains some element of control over the time of curriculum delivery, the place in which it is delivered, and the pace at which it is delivered. Unlike a true cyber school, students of blended schools are required to show up at the physical site for more than just state assessments (Watson et al., 2013). Typically, blended schools are charter schools, managed or owned by EMOs, which allows for the increased flexibility in meeting the students' needs. Blended schools are such a new development that data for the category as a whole is not yet available.

Next are the **multi-district fully online schools** that primarily educate their students who do not have the need or requirement to attend the physical school to access any part of their education. Sometimes, these schools will draw students from across a state. A large percentage of this type of educational service is managed and operated by EMOs, and these schools operate as full-time schools for students. This category has continued to experience an increase in student enrollment across the United States, but it has actually experienced a decline in the number of states that support such a model. Following the growth of this particular category of online schools has been complicated, as some state legislators have placed one or more restrictions on the inception and operations of these schools.

A popular structure for delivering an online education is the **state virtual school.** There are state virtual schools currently operating in 26 states in the school year 2013-2014 (Watson, Pape, Murin, Gemin, & Vashaw, 2014), with enrollments ranging wildly from under 150 to almost 400,000; with the top ten schools in this category enrolling over 90% of all state virtual school enrollments (Watson et al., 2014). These schools are created by legislation, or by a state-level agency, and are administered by a state education agency (Watson et al., 2013). They are typically funded by state appropriations or grants to deliver an education to students across the state. States are experiencing various levels of success with this particular model of online learning. Depending on the funding methods, some schools have experienced unprecedented growth while others have experienced markedly shrunken enrollments.

In 2012, state-level cyber school opportunities at some level did exist in 49 of the 50 states (Watson et al., 2012); however, the actual online offerings vary considerably by state. For instance, the state of Delaware has no major cyber offerings for its students, yet Florida provides one of the most comprehensive online educational offerings in the country, serving over 400,000

students in the 2012-2013 school year (Watson et al., 2013). Overall, state virtual schools lead the way in online learning enrollment growth with a 16% increase in 2012. State virtual schools account for 619,847 course enrollments (one student taking a one-semester-long online course), which is nearly one-third of the 1.5 million course enrollments for secondary students in the United States (Molnar et al., 2012). This leaves full-time online schools and individual school districts accounting for the balance. While growth has slowed somewhat in full-time cyber school enrollment, research indicates that there are approximately 300,000 K-12 students enrolled in the approximately 300 plus full-time cyber schools located in 31 states throughout the United States (iNACOL, 2013; Miron & Urschel, 2012; Molnar et al., 2013). It is easy to see how difficult it must be to maintain enrollment accuracy when online learning can take on so many forms.

Another delivery system of an online education is the **consortium programs**. Consortium programs are usually developed by districts, education service agencies, or intermediate units, wanting to save expenses by combining resources (Watson et al., 2013). Typically, consortium programs serve the multiple districts within the consortium, and are run by a group of school districts, or a non-profit agency working with the districts, or the intermediate education agency serving the districts. These programs may offer supplemental course offerings, may be fully online, blended, or a combination thereof.

The last category of schools entering the online learning field is **private schools**. Private schools, whether independent or associated with any other organization, are beginning to adopt online and blended courses (Watson et al., 2013). Watson et al., (2013) report that there are even some online and blended private consortia starting to develop.

Method of Delivery

Online learning can take several forms depending on the purpose and student it must serve. Online offerings for the K-12 student range from full-time online schools, to single course offerings for the purposes of enrichment or credit recovery, and even single lesson offerings. Some online schools require students to be online with instructors at the same time (synchronous education), and others allow students to visit the online course when it is convenient for the student (asynchronous education). As mentioned previously, we have seen the development of the blended form of instruction, where the combination of online instruction and in-person classroom instruction make up the course.

Historically, there have always been two primary methods of delivery of online learning: synchronous and asynchronous. Synchronous delivery is achieved when the instructor and the student, while in separate locations, access the virtual classroom at the same time for the educational experience. This, of course, requires students to maintain a schedule as would be in the brick-and-mortar school. Research has found that teachers who employ synchronous techniques for their virtual delivery perform more like traditional classroom teachers (Barbour, 2009). Yet, Bernard et al. (2004) found in their meta-analysis of comparative literature of distance education, that in the case of achievement, synchronous delivery was second to the typical classroom face–to-face method, a result duplicated in the area of student attitudes towards online learning as well.

Asynchronous delivery differs from synchronous in that the student may access the educational lesson at any time without the presence of the instructor. Yet, while some programs offer synchronous delivery, most rely on the asynchronous method of delivery, which is more aligned with students' educational desires of control over pacing and timing of learning, as well

as reduced logistical issues (Gonzales, 2005; Roblyer, 1999). Bernard et al. (2004) notes in the case of achievement, that synchronous delivery outcomes slightly favored online learning over classroom learning in their meta-analysis. However, Bernard et al. (2004) also point out that the dropout rate in asynchronous delivery was substantially higher than with synchronous delivery, a point worth noting since asynchronous usage is more popular.

Some would argue the idea that the skills needed to teach successfully online go beyond those required in today's typical classroom (Watson et al., 2010). In response to the current needs of students, some virtual schools are blending both online learning and face-to-face in their delivery. This gives the student some control over time, pace, and place in the educational process. This instructional model is becoming an increasingly important category because schools maintain some control over the student's interaction with the curriculum, and it provides opportunity for personalization of instruction (Watson et al., 2013). However, little research is available on the blended model of instruction, especially concerning full-time blended schools (Watson et al., 2010).

Reasons for Choosing Online Learning

This study would be incomplete if we did not examine reasons why students, teens in particular, would choose online learning over brick-and-mortar schools. Limited research on this topic exists, especially at the high school level. In a study involving 68 high school students, Roblyer (1999) found that high school students place a greater importance on the need for control over pace and time of learning than interaction with other students. Online learning could provide the flexibility of slowing or quickening the pace of the education to meet the student's current learning needs. Another reason why online learning may be chosen, as already expressed, is credit recovery. The idea here would be that the student could pick up a class that

he/she has perhaps previously failed at a time that is convenient for their schedule, allowing them to continue to attend the brick-and-mortar school during the day. This logically leads to a third reason a student, particularly a teen, would pick online learning, and that is due to that student's unique schedule needs that allows a student to be gainfully employed or time to pursue other interests (Mupinga, 2005). Perhaps a student has the need or desire to graduate early; online learning could allow such a possibility. Of course, one of the foundational reasons for online learning was to enable students to access higher-level courses that could not be offered within the current school in which that student attended (Barbour, 2009).

We cannot forget the possibility of less appealing reasons for choosing online learning. Some students may select online learning to avoid bullying, or to separate oneself from a particular peer group, or even to allow for the chance to better focus on their education without the many social distractions of the typical school. Finally, while this researcher has found no research to support this claim, students could be swayed to choose online learning for disciplinary reasons as well.

However, the choice to select online learning is not only the students to make, and is often influenced by a parent or guardian. It is reasonable to assume that some parents are no longer committed to the traditional method of delivery for their child's education. Could they simply be discouraged with what they deem as educational bureaucracy and lacking trust in their local district? While research has not been found to support these various reasons for parents choosing online learning over the brick-and-mortar school, these possible reasons cannot be totally discounted. None-the-less, online learning plays a significant role in education today.

Online Effectiveness

The proliferation of online learning has caused researchers to ask whether virtual schooling is actually better than face-to-face learning. Generally, research indicates there is no significant difference between online learning compared to face-to-face (Bernard et al., 2004; Russell, 2001; Summers et al., 2005). Supporting this statement are the results of a meta-analysis of both college and K-12 data that included 2,262 research abstracts covering over 25 years of education. The results showed that the effectiveness of distance learning or virtual schooling is neither better nor worse than brick-and-mortar schools in the areas of achievement outcomes, overall student attitude, and retention due to the wide variability in outcomes (Bernard et al., 2004). Those results of little difference have been supported in other studies done on individual courses effectiveness found in cyber-school versus traditional brick-and-mortar (Journell, 2010; Summers et al., 2005). Barbour (2009) suggests we should proceed with caution when claiming that student performance (course effectiveness) in the virtual world is as good as or better than traditional face-to-face, hence it is important to examine the topic from additional perspectives.

If one were to judge online learning effectiveness using Adequate Yearly Progress (AYP), as dictated by No Child Left Behind, they would find significant evidence for poor performance. Virtual schools run on average 22 percentage points behind traditional brick-and-mortar, with no improvement trend in sight (Molnar et al., 2013). As noted by Molnar et al. (2013), in 2011, only 24% of the virtual schools operated by EMOs made AYP, while nearly 52% of the brick-and-mortar schools did make AYP. On-Time graduation rates are another common metric used for school performance. On-Time graduation rate refers to the percentage of students who graduate within four years after starting 9th grade. The mean on-time graduation rate for virtual

schools as compared to all public schools is less than half the national average of 79.4% (Molnar, 2013). Molnar et al. (2013) cautions the continued rapid expansion of cyber-school given the current performance results.

Students' perceptions of learning experiences in online situations are important to examine if we are to gain a true perspective on online learning. In a small qualitative study, thirteen high school students and their teacher were interviewed about their general perceptions of online learning and the ability to learn the required content. Journell's (2010) research found that students felt online learning was best used for rote memorization or information transmission, than it was for active or social learning. Journell also found that the online students craved the social, personal interaction that was experienced in the brick-and-mortar classroom. Peer interaction and cooperative learning are contributors to the social personal interaction, and are both difficult aspects to incorporate within online learning settings, yet are common in face-to-face learning (Journell, 2010). While little research exists concerning high school students' perception of their online learning, this limited study postulates a need for unique considerations to meet students' expectations when designing online courses for the "typical" student.

Typical Online Learners

Understanding who is being served in the high school online environment is an absolute requirement to better the success of all online programs. However, as mentioned previously, the lack of student accountability within the online learning arena makes this request very difficult. So who is the typical online distance-learning student after all? A quick examination of some recent research provides confusing results. In a recent study of 35 public high schools encompassing the Eastern Canadian province of Newfoundland and Labrador, Kirby and Sharpe

(2010) utilized a survey that addressed all students. Kirby and Sharpe found the typical e-learner participant to be: a) female, b) completing a demanding academic program, c) having a positive attitude to school, d) not currently employed, and e) confident in their computer and reading abilities. The study went on to suggest that distance learners are often very academically capable, highly motivated, self-disciplined and independent workers (Kirby & Sharp, 2010). While this study was recent, it may be geographically influenced, as it appears to be in direct conflict with other available data.

Archambault et al. (2010), found a different typical online learner than did Kirby and Sharp. In 2010, Archambault et al. sent a survey to the members of the International Association of K-12 Online Learning, which included 22 different online programs representing some of the largest online programs existing today. The list of members receiving the survey included various cyber-charter schools across the United States and Canada. The survey asked the members of the organization to report how many enrolled in their programs are considered students "at-risk", as defined by the following characteristics: "at risk of dropping out of school,…including students with identified special needs, students in racial/ethnic minority groups (which may be proxy for low socio-economic status), students with high absenteeism, students with behavior problems, students with low academic skills, students with high residential mobility, students in larger families, students with convicted parents, students with low attachment to school or community, and/or students who are not native English speakers" (Archambault et al., 2010, p. 4).

The data provided in response to the survey had shown that a quarter of the respondents felt they had more than a 75% enrollment of K-12 students that would be considered at-risk. Twenty-one percent of the respondents claimed to have enrollments of 51% or higher that

included students at-risk. All 22 programs confirmed at least some enrollment of students at-risk.

Molnar et al. (2013) provides some additional data as to the typical online learner that seems to be in direct conflict with Archambault et al. (2010). Molnar et al. (2013) found in their research that "three-quarters of the students in virtual schools are white-non-Hispanic, compared with the national mean of 54%" (p. 26). They also found Blacks and Hispanics are served at significantly lower rates in virtual schools than in traditional public schools. Further review provides a slight edge in favor of girls over males in student population, especially in charter schools and for-profit programs. When considering the percentage of students eligible for free or reduced-price lunch, Molnar et al. (2013), found virtual schools are substantially lower than your typical public school. For students classified as special education, virtual enrollments are about half of the national average. Lastly, virtual school membership is comprised of mostly ninth through 12 grade students. In a study of our nation's largest virtual institutions, Molnar et al. (2013) suggest today's "virtual schools serve relatively few Black and Hispanic students, tudents who are poor and special education students" (p. ii), and few who are typically associated with being at risk of successfully finishing high school.

As mentioned previously, not all research is in alignment on this topic. Barbour's (2009) research suggests the depiction of the typical e-learner as being academically capable and highly motivated (as described by Kirby and Sharp), is not an accurate claim. Barbour's research would further convey that the previous description might not be appropriate for the majority of students in the United States. The group of students that Barbour considers a more likely typical candidate of online learning is students at-risk of failing out of school.

The Evolution of Students At-Risk

Since it appears probable that the student population of online learning organizations is comprised primarily of students at-risk of failing school, it is imperative we examine the typical characteristics of these students prior to our examination of academic self-efficacy and locus of control. As the characteristics of a typical online learner have evolved, or at least appears to have evolved, so too have the characteristics of a student at-risk of failing out of school. Overall, a student at-risk is a student who is most likely to drop out of school prior to graduation. From a more traditional perspective, the National Center for Education Statistics reported through the National Education Longitudinal Study of 1988 the following characteristics of students at-risk:

- Blacks, Hispanics, and students from low-socioeconomic backgrounds
- Students deficient in math and reading skills
- Students from single parent families
- A student who constantly changes schools
- Students with academically dis-engaged parents
- Students of parents that hold low academic goals for their children
- Students who have repeated a grade
- Students who do little homework
- Students who are frequently unprepared for class
- Students who cut class or are frequently tardy or absent
- Students thought to be passive, disruptive, inattentive
- Students from urban schools with large minority populations

While the above characteristics are still as viable today as they were in 1988, research has expanded the definition as to just who is the typical at-risk student. Donnelly's (1987) research

supports that often these students are low academic achievers, have low self-esteem, come from low socioeconomic families, are more commonly males and minorities, and come from parents who have low expectations of their student children. In addition, Donnelly's research adds a more psychological perspective when she notes these students are students who do not participate in school events and have minimal connection with the school. Importantly, Donnelly notes, as these students experience the failure associated with their poor performance in school, they fall behind their peers and the educational process becomes a negative influence on their self-esteem.

The evolution of defining students at-risk of failing out of school continues as Grayson (2001) notes that students at-risk will have poor social skills, or will be in a negative peer group, and or have a family situation characterized by stress that lacks structure and rules. Funk (2005) adds that academic success is further complicated by the typical at-risk student's external locus of control. These students can often be hindered from participating successfully in school by additional complications such as drug addiction, teen pregnancies, having English as a second language, and psychological factors (Archambault et al., 2010). Having a learning disability was also identified as a significant influence on a student's potential for dropping out (Repetto et al., 2010), as was the student's perception of how he or she was being prepared for life after high school (Dunn et al., 2004). Research continues to expand the typical characteristics of at-risk youth to a point that now encompasses a more holistic view, not only including what students at-risk experience in their lives or how they behave, but also considering the impact of that student's disability on their chances of graduating from high school.

Locus of Control – Predictor of Success

Julian Rotter introduced the idea of locus of control in 1966 within the framework of social learning theory. Rotter (1966) states, "The role of reinforcement, reward, or gratification is universally recognized by students of human nature as a crucial one in the acquisition and performance of skills and knowledge" (p. 1). Using that framework, Rotter (1966), reveals the concept of "generalized expectancies for internal versus external control of reinforcement, which refers to the belief or expectation that control of reinforcement for future outcomes, exists primarily within oneself or in external sources" (Landis, Altman, & Cavin, 2007, p.126). Essentially, students with high internal locus of control have higher academic achievement than those students with low internal locus of control or just an external locus of control (Drago, Rheinheimer & Detweiler, 2016; Hasan & Khalid, 2014; Landis et. al., 2007; Messer, 1972). Generally, research has shown that men tend to score more internal than women in the area of locus of control (Specht, Egloff, & Schmukle, 2013). Additional research has also revealed that locus of control could be impacted by numerous variables such as: whether the child has an involved father, health, income, gender, parents' education, and a person's education (Lascano, Galambos, Krah, & Lachman, 2015; Parker, 2003; Specht et al., 2013).

In theory, a person who is said to have an internal locus of control considers the outcomes in their life as a result of their efforts and under their control. This is a very powerful idea for keeping people resilient. A person who is said to have an external locus of control considers the outcomes in their life as a result of chance or fate. While an external locus of control can be beneficial in some instances by providing a reduction in stress related to a failed accomplishment, it is generally related to poor outcomes in academics, health, income, and other life related situations.

Much of the research available for review related to predictors of successful online learners involves colleges or universities using undergraduate or graduate students as participants. The relationships of those findings to the K-12 school environment have yet to be validated (Ronsisvalle & Watkins, 2005). However, in this section this researcher will refer to some of this research available, while noting in advance that any generalizations to the K-12 school environment would need validation before relationships could be suggested.

In general, current research attributes online learner academic success to the student's personal and psychological characteristics (Parker, 2003, Ronsisvalle & Watkins, 2005). These characteristics typically are self-regulatory skills, *self-efficacy*, motivation, and an *internal locus of control* (Ronsisvalle & Watkins, 2005). In addition, those students who have performed academically well in online learning; usually have higher GPA's prior to taking a course, as well as more online experience. Despite the limited number of studies, numerous variables have been recognized as significant predictors of success in online learning, and few have been as consistently recognized as locus of control (Parker, 2003). Locus of control has been identified in research as an indicator of persistence related to successful experiences in the educational environment (Drago et al., 2016; Hasan & Khalid, 2014; Landis et al., 2007; Rotter, 1966).

In a study performed in a mid-sized public university in Pennsylvania, Drago et al., (2016) surveyed 499 college students in a multifaceted examination of the relationship between locus of control, academic self-efficacy, and tutoring. Using an instrument that included the Rotter scale for locus of control, and a locally developed measuring tool for academic self-efficacy, Drago et al., (2016) reported significant correlations between locus of control and student's academic achievement.

Hasan and Khalid (2014) also performed a study examining the relationship of locus of control of high and low achieving students. Like the previous study, this study involved 187 undergraduates in their final year of their bachelor program. The group consisted of 126 high achievers, and 61 low achievers, made up of both men and women. The results of the study were intriguing. Hasan and Khalid (2014) determined that while both groups had an internally oriented locus of control, the higher achieving group (average GPA of 3.2) had experienced better academic results, as compared to the lower achieving group (average GPA 2.2). Hasan and Khalid (2014) go on to report that their findings support the idea that underachievers have a less strong academic self-concept, and use ineffective study techniques.

Research regarding locus of control and online learning is limited. However, in 2003, Parker performed a study of 95 community college students, of which 52 were online learners and 43were brick-and-mortar learners. Parker investigated the role of locus of control as it related to completion rates of both online and traditional classes. The results found, using Rotter's locus of control scale, that students who scored an internal locus of control were more likely to complete an online course than those who had scored an external locus of control. In fact, a statistical analysis of the results indicated a strong correlation between academic persistence and internality, or self-motivation, in online courses. Parker's research also found that "locus of control had no significant value in predicting the completion rates in the traditional classroom" (p. 59). Lastly, Parker's study revealed that students who are scored moderately internal tend to grow more internal, self-motivated, as the online class proceeds. It should be noted that this result was not duplicated in the traditional classroom. Parker (2003) stated, "A person who is consistently reinforced for personal accomplishments will be more likely to

possess an internal locus of control than a person who receives reinforcement sporadically or inconsistently" (p. 56).

Studies regarding locus of control that involve high school or elementary students are difficult to find. However, in a 1972 study by Messer, 78 students were compared on school grades and the relationship of locus of control. As in previous studies involving college students, those elementary students who held an internal locus of control where found to have higher grades and achievement test scores that students holding an external locus of control.

Locus of control is a fluid state of consciousness and changes throughout the span of one's life (Specht et al., 2013). Rotter (1966) has noted that locus of control is on both on a continuum, and is situational, resulting in changes in either direction (internal or external) based on generalized expectancies of reinforcement as life progresses. Generally, research suggest that the notion of control progresses from a predominantly external value toward an internal value as cognition develops with age (Malkus and Musser, 1999), in a rare study of 138 students grades 3 through 5, found supporting evidence of the external to internal movement. Their study indicated that 5th graders has significantly more internal locus of control than 3rd graders, who in turn had significantly more internal locus of control than first graders. Research also suggests a typical rise in perceived control (locus of control) up to age 25, followed by a steady decrease after one's early 30's through the early to mid-40's. However, perceived levels of control can be influenced in a positive or negative manner later life by many factors. Factors such as health, wealth, or occupation, can have an influence on a mature person's life. Because of the potential negative influence of an external locus of control in later life, Lancaster and Richmond (1983), recommend schools provide some form of educational development to students having an

external locus of control that contributes to their ability to make the needed connections between their behavior and the resulting outcomes.

In summary, locus of control is a concept of generalized expectancies for outcomes related to either internal or external sources of reinforcement (Rotter, 1966). A person with an internal locus of control considers the outcomes in their life as a result of their efforts and those outcomes are under their control. A person with an external locus of control considers the outcomes in their life a result of chance or fate and not within their control despite all efforts. At times an external locus of control can be beneficial by providing a reduction in stress related to a failed accomplishment, essentially blaming the outcomes of forces beyond ones control. However, an external locus of control is generally related to poor outcomes in academics, health, income, and other life related situations. Locus of control is found to be on a continuum that moves from primarily external at a young age, to internal at an older age. While locus of control has a well-researched and documented relationship with academic achievement within colleges, less evidence exist for high school and elementary students.

Academic Self-Efficacy – Predictor of Success

The idea of self-efficacy itself was introduced by Bandura (1977), as a component of the overarching social learning theory (Zimmerman, 2000). Originally associated with individuals attempting to gain control over stressful or otherwise emotionally taxing situations, self-efficacy has been expanded to include cognitive processes, emotions, and self-regulated behaviors (Schunk, 1991). Bandura (1977) defined self-efficacy as one's personal beliefs for judgments regarding their abilities to form and perform plans of action to attain certain goals. He also defined the key aspects of self-efficacy; level, generality, and strength, as it relates across activities and contexts (Zimmerman, 2000). The *level* of self-efficacy refers to the relationship

of the difficulty of a task. For example, the level of self-efficacy would need to be higher in the case scaling a dangerous mountain, versus going for a hike on a walker friendly trail. *Generality* refers to just how transferable the self-efficacy beliefs are to other tasks. Using the mountaineering example above, one would ask what beliefs are transferable across the activities of hiking and mountaineering. *Strength* of self-efficacy refers to the amount of one's certainty to complete the task at hand, such as one's beliefs to complete a particular mathematical equation.

In Bandura's (1977) theory of self-efficacy, he proposes that individuals gain their self-efficacy information, which they process cognitively, from four primary sources: performance accomplishments, vicarious experiences, verbal persuasion, and physiological states. Performance accomplishments provide the highest level of influence on one's self-efficacy, as it is based on personal mastery experiences. When a student experiences success with a particular experience, efficacy is raised. Repeated failures with a performance experience lowers self-efficacy. If failure takes place early on in the attempts to master a performance accomplishment, self-efficacy is negatively impacted dramatically. In relation to online learning, this method of gaining self-efficacy information is most likely relied upon given the isolating nature of such learning.

Vicarious experience is yet another method of gaining self-efficacy, although not as dependable, or influential, as performance accomplishments (Bandura, 1977). Seeing others perform a particular activity with success or adverse consequences can generate expectations in observers. In the online learning environment, this method of obtaining self-efficacy information regarding one's abilities would seem limited, given learning is done primarily in isolation.

Because of its ease, and being readily available, verbal persuasion is another method a person can gain self-efficacy (Bandura, 1977). This method of enhancing self-efficacy is yet

weaker than the previous provided, and can be quickly diminished in the face of disconfirming experiences. In the online learning world, this method of self-efficacy building is also limited to the method of delivery, especially if performed in an asynchronous fashion.

Finally, emotional arousal is yet another source of self-efficacy information (Bandura, 1977). People who recognize their physiological arousal as being high in a given situation can reduce their self-efficacy and inhibit their performance. A student who works alone in the online environment gets little assistance with this type of information when trying to learn.

In applying the theory, academic self-efficacy is one way of thinking about the beliefs a student may hold regarding their own abilities to accomplish or achieve a particular academic goal or obtain a particular academic outcome (Hodges, 2008; Putwain et al., 2012). Previous research has conceptualized academic self-efficacy as domain-specific beliefs in a particular academic subject (Putwain et al., 2012). Previous research has also determined that academic self-efficacy is a reliable predictor of students' academic related outcomes, such as student motivation, and learning (Bandura, 1977; Bandura, Barbaranelli, Caprara, & Pastorelli, 1996; Putwain et al., 2012; Zimmerman, 2000).

In a 2012, Putwain et al., performed a study that was aimed in part at determining the relationship between academic self-efficacy and academic achievement, when operationalized as confidence in study-related skills and behaviors. In a sample of over 200 first-year undergraduates, Putwain et al., determined that self-efficacy in study related skills was the critical variable that may play an important role in academic achievement and is a predictor of academic success. Specifically noted in this study was the strong relationship of confidence in study skills and independent study as they relate to academic self-efficacy.

In yet another study performed in 2011, Adeyinka, Adedeji, Adeniyi and Olufemi, also found similar results in regards to self-efficacy being a predictor of academic success. This study was focused on 500 secondary students between the ages of 12 and 15. Adeyinka et al., found that while self-efficacy made the least contribution to academic success, followed by locus of control and interest in schooling, it was still significant. However, this study like the study mentioned before it, were completed in the traditional school setting of face-to-face brick-and-mortar.

Up to this point, all discussion regarding self-efficacy has been related to studies and research utilizing face-to-face learning. Self-efficacy beliefs are context-specific and must be analyzed carefully as situations and measured tasks change. Such a change requiring further analysis would be in the method of delivery in education, for example changing the learning environment from face-to-face to online learning (Hodges, 2008). In his review of literature concerning self-efficacy in the context of online learning environments, Hodges (2008) notes that the majority of research on self-efficacy took place prior to the establishment of the internet as an educational tool. With that in mind, Hodges (2008) states that the research of academic self-efficacy as it relates to online learning is in its infancy and is inconsistent. The research on self-efficacy and the use of computers is not necessarily related to online learning as it is more related to people's confidence in using computers or technology (Hodges, 2008).

With few studies existing that examine the relationship of academic self-efficacy and its influence with online learning, one such study was performed by Cho and Shen (2013). They surveyed 64 college students participating in an online graduate course, and found that both intrinsic goal orientation and academic self-efficacy had an influence on meta-cognitive and interaction regulation which influenced academic achievement.

While there exist a dearth of research involving high school online learners, academic success, and academic self-efficacy, some researchers still predict a similar relationship as with face-to-face learning. In a 2002 article discussing the rapid development of technology and the internet, Bandura proposes that the many online tools will only enhance achievement for students who possess self-efficacy.

LOC and ASE Differ

Bandura (1977) recognizes that locus of control is often referred to as comparable to self-efficacy in certain respects. This is a practice that Bandura discourages. Bandura (1977) states that, "Rotter's (1966) conceptual scheme is primarily concerned with causal beliefs about action-outcome contingencies rather than with personal efficacy" (p. 204). Bandura goes further to suggest that personal beliefs of outcomes, that are the result of one's actions and experiences, can have various effects on one's self-efficacy and behavior. If a person regards an outcome as personally (internally) determined but lacks the requisite skills to accomplish the outcome, then that person would experience low self-efficacy and view the activity with much futility. For example, if a student cannot grasp the mathematical concepts that they perceive course success is dependent upon, then they would have substantial reason to be disheartened.

Figure 1, provided below, is Bandura's representation of the how self-efficacy and locus of control relate to each other. In summary, the outcome expectations (locus of control) are a person's beliefs or estimate that a given behavior will lead to a particular outcome. An efficacy expectation is the belief that one can successfully perform the behavior that is needed to produce the believed or estimated outcome (Bandura, 1977). This relationship is separable in situations where outcomes are poorly linked to performance quality (Schunk, 1991).

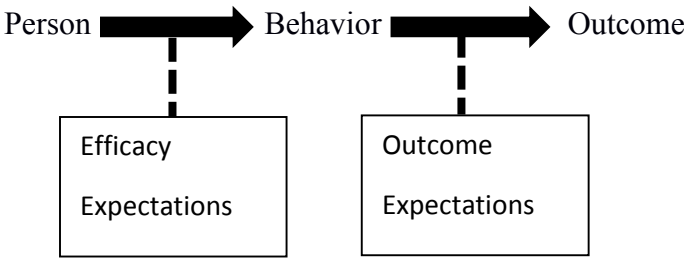

Figure 1. Bandura's Self-Efficacy. This diagram represents the difference and the relationship between efficacy expectations, and outcome expectations. Bandura, A., (1977). Self-Efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191-215. Retrieved from http://www.uky.edu/~eushe2/Bandura/Bandura1977PR.pdf

Predictors of Success for Online Learners

As mentioned previously, there exists a void in research that directly addresses academic self-efficacy, locus of control, and academic success for high school online learners. However, there are a number of studies that do address learner characteristics of online students, and an argument could be made for their inclusion.

In their meta-analysis to develop a reliable model for predicting failure and promoting success in online learning, Roblyer, Davis, Mills, Marshall, and Pape (2008) set out to develop a tool for determining which students are likely to succeed in an online environment. Borrowing from previous studies, their research focused on two primary areas, learner characteristics, and learning environment characteristics. Their study included 4,100 K-12 online students. The results of their study provided a model that incorporated four factors, some of which are related to self-efficacy and locus of control. Those factors they measured included: technology use/self-efficacy, achievement beliefs, instructional risk-taking (related to locus of control), and organization strategies. Roblyer et al., (2008) noted that over 80% of the students rated their technology skills at a high level and that 75% of the students passed the course with a D or better

grade. Roblyer et al., (2008) also reported their students as having rated themselves as believers of high achievement and self-regulation, both related to academic self-efficacy.

Ultimately, Roblyer et al., (2008) determined that students' past ability, as reflected by the student's GPA, was a significant predictor of current success in online learning; however, other variables were noted as significant. Those additional variables included; technology access, *self-efficacy*, achievement and organizational beliefs, and certain learning conditions (computer at home, time in school to complete the virtual course). Roblyer et al., (2008) caution that their study may not be generalizable given their population was 77% white and they state…"that this type of schooling is benefiting the already advantaged learners more than the under-served populations who most need it." (p. 107)

Another study performed by Cheung and Kan (2002), which included 168 college students in a distance-learning business course, also could be related to academic self-efficacy. Cheung and Kan's findings supported previous research in that they found a correlation between previous academic achievement and student performance (Kirby & Sharp, 2010; Parker, 2003). However, Cheung and Kan's research also noted a correlation between the student's relevant academic background and previous learning experiences with student performance. An additional significant positive association between student performance and gender was also noted in the study. Cheung and Kan's study revealed that women generally outperformed the men in the online environment, a result supported by other researchers (Diaz, 2000; Kirby & Sharp, 2010).

In a study that included 231 California college students, Diaz (2000), concluded like previous studies, that students with higher GPA's outperformed students with lower GPA's when participating with online learning. Diaz noted that online students were twice as likely to drop

out of an online course, as those of traditional courses were. However, Diaz's research revealed those who were successful with the course were likely to be females. Lastly, Diaz revealed that the successful student profile included those students who had more life and academic experiences making them better suited for the independent self-directed style of learning online.

In a study composed entirely of 317 secondary high school students, from 35 public high schools in the Canadian province of Newfoundland and Labrador, Kirby and Sharpe (2010), revealed the typical profile of that online learner, who completed a distance education course, to be similar to that described in previous research. The typical online learner for Kirby and Sharpe was likely to be a female, participating in a rigorous academic program, positively disposed toward school and academics, with confidence in operating computers, and reading. More significantly, Kirby and Sharpe noted that the students who completed the online courses were three times more likely to have participated in and completed a rigorous academic program, as well as three times more likely to be positively disposed to school and academics. Those students with confidence operating computers were five times more likely to complete the online course, and those with a high degree of confidence in reading were 30 times more likely to complete the online course. Additionally, those students who completed the course were likely to have an 80% overall academic average.

Further support for the idea of confidence with operating computers as a significant factor needed for online success has been provided by Dupin-Bryant (2004), in her study of 464 adult online learners. While Dupin-Bryant noted that previous computer experience was positively correlated, she specifically noted that the right "type" of computer experience was more crucial to student retention and ultimately success than was general computer operating. Additionally, Dupin-Bryant's research found that completing students had an average GPA

higher than those who did not complete the course, a factor supported in other research (Bernard et al., 2004; Diaz, 2000; Kirby & Sharp, 2010; Roblyer et al., 2008). Again, this researcher recognizes that many of the previous mentioned studies involve post-secondary students, and that we must proceed with caution when generalizing the results of these studies with the high school population.

In summary, given the previous review of literature, the typical profile of a successful online learner is described as a female who has completed a rigorous academic program, who is confident with their computer skills, who is confident with their reading skills, enjoys school, has had a positive academic experience, and is internally driven to succeed, independent and organized. These characteristics appear to be in stark contrast to the typical at-risk student.

Systemic Virtual Concerns

As evidenced in the previous pages, online learning has grown considerably since its conception, and this has caused some to express caution and concern regarding the virtual system. As expressed earlier, enrollments in online courses, classes, and full-time schools, are increasing annually at a rapid pace (Watson et al., 2013). However, some researchers are expressing concerns over the rapid pace of expansion. Molnar et al., (2013) have expressed concern specifically over full-time publicly funded virtual schools in the following statement:

> At this point, technological and business model innovations have far outpaced research on the impact of virtual teaching and learning. Yet even though little is known about the efficacy of online education generally or about individual approaches specifically, states are moving quickly to expand taxpayer-funded virtual education programs. (p. i)

Molnar et al., (2013) state, that after a recent review of data concerning 311 full-time publicly funded virtual schools, it was determined that serious and systemic problems exist and that the current expansion of cyber schools is considered unwise. Molnar et al., (2013) say growth continues at the state and district level despite the virtual schools history of students falling behind their peers academically or dropping-out at higher rates. Watson et al. (2012), repeat a similar message in their 2012 report, *Keeping Pace with Online and Blended Learning*. Watson et al., (2013) make a plea for better measures of online student achievement, through creating better data systems, improving student tracking, and increasing accountability measures for online learning. Their research shows these important systems and measures are not present in most states today.

Today, many high schools offer supplemental courses while providing mostly face-to-face opportunities. In these situations, the student remains connected and enrolled in his/her local school, a point that could be significant. In online learning situations like the above, local schools have better control over educational expenses associated with online learners. However, there also exist cyber schools that are privately owned and for-profit in nature. Students in these schools are not enrolled with their local schools and control of educational expenses is lost to the for-profit cyber provider. In addition, clear systems for accurate student tracking and accountability, both items needed to determine if online learning is fulfilling its promise, appear to be missing in the privately owned and for-profit cyber charters.

Online learning has experienced tremendous growth in the last decade. This growth is not without its problems or concerns. It appears that different organizations are drawn to online learning for different reasons. Whether it is profit oriented or simply a way to retain critical funding, both are stimulating further growth in the industry. Through this growth, different

forms of online learning are developing to serve an ever increasing and diversifying student population. Like their brick-and-mortar counterparts, online learning organizations must now provide a quality education.

Summary

In summary, the research reviewed within this study related to online learning has revealed a considerable lack of consistency. Despite the research suggesting that online learning is neither more or less as effective as face-to-face learning (Larson & Sung, 2009; Russell, 2001), and that the quality of the experience, as rated by the students, favors face-to-face classroom learning (Barbour, 2009; Kirby et al., 2010), school districts and EMO's alike, continue to plan for the increased implementation of online learning.

Just who is taking online courses also seems to in question. The answer to this question could have a profound impact on so many areas of online learning. One may be inclined to side with Barbour (2009) and his research on the typical student of online learning, as being the at-risk student attempting to make up failed courses for credit recovery. There is growing information that indicates that virtual schools are in fact becoming the school of choice for students at-risk, including those with disabilities (Barbour, 2009; iNACOL, 2013; Repetto et al., 2010). Yet, despite the research on who is the typical "successful" cyber school student appearing misaligned with suggested current student enrollments, online learning enrollments continue to increase across the nation on an average of 13% (Watson et al., 2013).

Despite the poor general performance on common education metrics such as, Adequate Yearly Progress, state performance rankings, and even graduation rates, clearly favoring face-to-face learning in traditional brick-and-mortar schools over the virtual education model (Carr, 2000), lawmakers continue to pass legislation to support online learning (Molnar et al., 2013).

Over the claims of the lack of research, the calls to halt the expansion of online learning until better research is provided, and the obvious role potential financial profits play in the situation, the continued investment of taxpayer dollars continue to flow into the online learning world.

Above it all, there is a more important concern at this point, and that concern is that many of these students at-risk of failing school, many of which have significant disabilities, such as attention deficits and specific learning disabilities, have reached their last alternative to finish high school when they choose, or must choose, joining a cyber school program (Repetto et al., 2010).

More specifically, upon review of literature related to the characteristics of both at-risk youth and the typical successful online learning, there appears to be a lack of overlapping characteristics. Research supports the typical at-risk student as one who does not possess the skills and attitudes that have been identified with being a successful online learner (Barbour, 2009). Yet some researchers are estimating that over 50% of all online learners are in fact students at-risk (Archambault, 2010). Moreover, others are reporting attrition rates of greater than 40% in the online learning realm. Combined with the typical issues of a growing industry, such as lack of appropriate regulation and accountability; online student achievement appears to be lacking. With more states requiring online learning experience to graduate, it is more imperative than ever to determine in advance the potential for success of all online learners, and to prepare those who do not have the proper skills and attitudes to ensure their success online.

While academic self-efficacy and locus of control have been clearly related to academic performance and achievement in brick-and-mortar schools at both secondary and post-secondary levels, there exists a lack of research for these topics as they relate to high school online learners. Given the unlikely nature that online learning growth and popularity will suddenly cease, and

that student attrition rates and academic success within cyber schools will suddenly reverse, it is imperative to determine what key characteristics are directly related and imperative for student online achievement. Hence, the ultimate purpose of this study is to determine if academic self-efficacy and locus of control, both attributes clearly identified for success in face-to-face educational settings and post-secondary learning, play a role in the student's earned grades in high school cyber courses.

CHAPTER THREE

METHODOLOGY

Introduction

The goal of this study was to determine if a relationship exists between academic self-efficacy, locus of control, and academic achievement, for high school students learning in the online environment. In order to examine this relationship, a mixed-methods research study was completed. Data from two sources was utilized for the study, including a student survey and student interviews. This study did benefit from both quantitative and qualitative research methods in providing answers to these general guiding questions:

1. What role, if any, does academic self-efficacy play in the grades earned in high school cyber courses?
    A. What role does academic self-efficacy play in the grades earned in high school cyber courses controlling for gender?
    B. What role does academic self-efficacy play in the grades earned in high school cyber course controlling for prior cyber course experience?
    C. What role does academic self-efficacy play in the grades earned in high school cyber courses controlling for ethnicity?
2. What role, if any, does locus of control play in the grades earned is high school cyber courses?
    A. What role does academic self-efficacy play in the grades earned in high school cyber courses controlling for gender?

B. What role does academic self-efficacy play in the grades earned in high school cyber course controlling for prior cyber course experience?

C. What role does academic self-efficacy play in the grades earned in high school cyber courses controlling for ethnicity?

Chapter 3 includes a description of the methodology used in this study. Included in this chapter is the research design, a description of the data collection instruments and procedures, and the data analysis procedures.

Statement of the Problem

The problem and the need for this research revolve around the responsibility of communities, school districts, legislators, and educators alike, to provide each K-12 online student the support needed to be academically successful in the online environment. The reported common personal characteristics and attributes related to successful online learning at the collegiate level such as, a high level of academic self-efficacy, and an internal locus of control (Dupin-Bryant, 2004; Kirby & Sharp, 2010; Parker, 2003; Street, 2010), do not appear to be in alignment with the typically reported personal characteristics of a student at-risk of failing out of high school who currently make up a majority of the secondary online learning population (Archambault et al., 2010). This suggested a need for a more focused examination of the relationship of academic self-efficacy and locus of control as it relates to the online high school students cyber course performance. As Dupin-Bryant (2004) stated, "…until the relationship between retention and pre-entry attributes are more clearly identified, steps will not be taken to help students at-risk complete online courses and drop-out rates may remain high" (p. 200).

Purpose of the Study

The purpose of this study was to examine and describe the extent at which student academic self-efficacy and locus of control impact student's earned grades in high school cyber courses. A total of eight research questions were presented. The first main question examined the relationship, if any, of academic self-efficacy and a student's earned grades in online cyber courses. This was followed by three sub-questions controlling for the number of cyber courses previously taken, gender and ethnicity. The second main question focuses on the relationship, if any, of student locus of control and a student's earned grades in of online cyber courses, and was followed by three sub-questions controlling for the number of cyber courses previously taken, gender and ethnicity.

The answer to these questions could have implications on how schools and students decide if online learning is a suitable choice for particular individuals. This research may also provide cyber organizations with information that may assist in the altering of the typical cyber school offerings and methodology to better ensure the success of all online students.

Research Questions

The following research questions will guide this study:

1. What role, if any, does academic self-efficacy play in the grades earned in high school cyber courses?
    A. What role does academic self-efficacy play in the grades earned in high school cyber courses controlling for gender?
    B. What role does academic self-efficacy play in the grades earned in high school cyber course controlling for prior cyber course experience?

C. What role does academic self-efficacy play in the grades earned in high school cyber courses controlling for ethnicity?

2. What role, if any, does locus of control play in the grades earned is high school cyber courses?

    A. What role does locus of control play in the grades earned in high school cyber courses controlling for gender?

    B. What role does locus of control play in the grades earned in high school cyber course controlling for prior cyber course experience?

    C. What role does locus of control play in the grades earned in high school cyber courses controlling for ethnicity?

Hypothesis

This researcher's hypothesis was that there is a statistically significant relationship between academic self-efficacy, and/or locus of control, and a student's grades earned in an online cyber course. The null hypothesis was that there is no statistical relationship between the academic self-efficacy, and/or locus of control, and a student's grades earned in an online cyber course.

Research Design Instrument

This study utilized a mixed methods approach, which employed both quantitative and qualitative methods in an effort to describe the relationship, if one exits, between a students' level of academic self-efficacy, their locus of control, and their grades earned within a high school online cyber course. A detailed analysis has been completed in an effort to identify if there is any relationship to academic self-efficacy, locus of control, and grades earned in an online cyber

course while controlling for number of cyber courses previously taken, gender and ethnicity. The ultimate goal in using this mixed methods approach was to gain a greater depth of understanding of what may be influential predictors of student success in virtual classes.

Quantitatively, this study collected data using both an abbreviated version (13 questions) of Rotter's 29-item locus of control instrument (Rotter, 1966) and the Muris (2001) 8-item Academic Self-Efficacy Scale (See Appendix A). The consolidation of both scales, and the addition of two demographic questions will complete the 25-item survey. The 8-item academic self-efficacy sub-scale measured youths' perceptions of their ability to manage their own learning and succeed academically. The two demographic items requested were students' gender and number of cyber courses taken previously.

The Rotter component of the survey is comprised of items for which a student must pick one of two selections. Originally referred to as the I-E scale by Rotter, each selection of the survey is awarded either a 0, or a 1. A total of 13 points can be achieved with this section. A high score will relate to an external locus of control, and a low score relates to an internal locus of control. For the purposes of this study, those students scoring a 6 or less, out of 13 possible points, were considered as having an internal locus of control. For students who scored a 7 or more out of the possible 13 points on the Rotter scale, those students were considered having an external locus of control.

The academic self-efficacy subscale designed by Muris (2001) is a 9 item questionnaire utilizing a 5 point Likert scale ranging from a low of “not very well” to a high of “very well.” The options were converted to a 1-5 numerical scoring for data analysis. The higher the score relates to a higher level of academic self-efficacy, meaning the student with a high score believes that he/she has a high ability to manage their own learning and to succeed academically.

Students could score between 9 and 40 points. The subscale was rated for students between grades 8 to 12, and has a reported reliability score in which Cronbach's Alpha is .88 (Muris, 2001). The reliability of the data collected for this study has been calculated and reported in later chapters.

Qualitatively, a small group of voluntary participants were randomly selected from the group of students who responded positively on the survey to take part in a personal interview. The interview originally consisted of 8 questions, but was reduced to 7 after initial responses to the additional question appeared to make the students uncomfortable (See Appendix B). Information obtained in this portion of the study was analyzed using a Grounded Theory approach. The intent of this portion of the study was to go beyond the description of data and to "generate or discover a theory" (Creswell, 2007) that will support our findings as to the relationship, or lack thereof, between locus of control, academic self-efficacy, and student achievement in a high school online cyber course.

Data Collection

The 25 item survey instrument was administered in the spring of the 2015-2016 cyber school year. Students from various local school districts and cyber charter schools were solicited to volunteer. All parents and students were provided the approved informed consent forms to participate, and the confidentiality of the study was reviewed with all participants. Transcripts of the student's cyber related grades were requested at the end of the spring semester, for only the spring semester, as a variable to be used within the data analysis. Once the survey was collected, the data was logged into a computer base using number codes to identify the participants. Confidentiality was maintained for all data users.

Sample

The study sample included high school students in grades 9 through 12, who were currently enrolled in cyber school courses during the spring of the 2016-2017 school year. Due to the study data requirements, only schools within Monroe and Northampton county borders were utilized. The volunteer participants were enrolled in one or more high school online cyber school courses within the virtual programs located within Northeastern Pennsylvania. The total population of available participants receiving the direct mailing was 200. Using a traditional methodology in determining sample size while maintaining a confidence level of 95%, it was determined a sample size of 100 would be appropriate for the survey portion of this proposed study. However, only 48 recipients replied with all documents complete. A sample size of 10 students was used for the qualitative interview portion of this study.

Pilot Study

After the researcher obtained written permission from the superintendents of the related school districts mentioned in the previous section, approval was granted from the IRB. Next, a selection of 10 students were solicited by phone to participate in the pilot study. The parents of the selected student participants were mailed a copy of all the related survey documents, after a confirmation phone call was made. Parents and students were to read all contained documents and complete the enclosed survey. After the all documentation was complete, participants placed all documents in a provided self-addressed stamped envelope addressed to the researcher. After all the pilot study surveys were collected, student participants were called and questioned regarding their understanding of the procedures and ease of completing the survey. The resulting data was also analyzed for its accuracy and level of completion. Numerous minor changes were

made to the survey and procedures as a result of the pilot study efforts. These changes were documented, sent to the IRB, and subsequently approved.

Quantitative Procedures - Survey Distribution

After receiving IRB approval, an introductory letter, providing information regarding my study and future mailings, was sent to 100 of the 200 potential participants. Within 5 days of ending the initial introductory letter, the survey and its related documents were sent in a large envelope. Included in the survey was the opportunity for each participant to receive a gift card as a thank you for participating. A second letter, reminding possible participants of the importance of the documents sent was mailed to each individual who did not respond within 9 days. Follow up phone calls were made after the second letter went unanswered. This process was repeated approximately 2 weeks after the initial 100 piece mailing, to attempt to reach the second 100 possible participants. All documents contained required IUP identification as well as proper contact information of related parties to the study.

Qualitative Procedures – Participant Interviews

Within the survey portion of the mailed documents, parents and student participants had the option to indicate if they would be willing to take part in a short interview regarding their cyber experiences. After all data packs were collected from the 48 respondents, a list of potential interviewees was created. The list consisted of 12 possible candidates from which the researcher was only able to interview 10. Two of the 10 interviews were done face to face. The remaining 8 interviews were conducted over the phone. All interviews were recorded and transcribed for further analysis. (See Appendix N)

Data Analysis

The methodological design of this study included both quantitative and qualitative analyses. Traditional statistical procedures, including descriptive and inferential analyses, were utilized to analyze the quantitative data generated from the participant's survey results. Independent variables included the academic self-efficacy and locus of control measures, as well as demographic variables including the participant's gender, number of previous cyber courses taken, and ethnicity. The primary dependent variable for this study is the participant's average GPA for their spring semester cyber courses for the 2015-2016 school year.

Descriptive statistics include means, standard deviations, and confidence intervals for interval/ratio data. Inferential procedure was a multiple regression analysis to investigate the relationships between the independent and dependent variables. A self-efficacy total score was calculated by computing the mean score of all 9 self-efficacy items for each participant. A locus of control total score was calculated by summing the locus of control item scores across all 13 locus of control items for each participant. These total scores were used as the self-efficacy and locus of control measures for the regression analyses.

The Bonferroni correction was applied to the confidence interval calculations for the self-efficacy item and total score confidence intervals to maintain the overall Type 1 error rate at .05 (Field, 2009). The Bonferroni correction is applied by dividing the original alpha level (.05) by the number of confidence intervals to be calculated (10). Therefore, alpha level of .005 was used for calculating the ten confidence intervals for the self-efficacy variables.

The qualitative data was analyzed using the Grounded Theory method. Grounded Theory is an inductive research method that enables the researcher to generate a theory from systemic research (Strauss & Corbin, 1990). Grounded Theory is a set of procedures which eventually

lead to the emergence of conceptual categories or patterns in the data. These concepts or patterns provide a foundation on which the researcher can stand to conceptualize a theory that can explain the data or phenomena.

Summary

The goal of this study was to provide ground level information regarding the influence locus of control and academic self-efficacy have, if any, upon the success of students participating in various high school cyber courses. This study has particular significance as, according to research, many of these students participating in the cyber courses may be students at risk of failing out of high school, and these students typically do not possess positive levels of these attributes related to academic achievement. This researcher utilized a survey comprised of two well established and validated instruments; an abbreviated version of the Rotter's Locus of Control Scale (1966), and a sub-scale from Muris' Academic Self-Efficacy Scale (2001), which targets student's perceptions of their ability to manage their own learning and academic success, and three demographic questions. Personal interviews were also performed in an effort to obtain the most reliable and accurate data available regarding this study and its related topics of focus. The data, which was collected in two parts, was analyzed separately, and then used as a whole, to identify themes and answer the research questions presented prior in this document.

It is the hope of this researcher, utilizing a mixed methods approach to this study has provided valuable information regarding whether a relationship exists between a students' locus of control, academic self-efficacy, and academic achievement in high school online cyber courses.

CHAPTER FOUR

DATA ANALYSIS AND RESULTS

Introduction

This study was designed to examine the relationship between a student's level of academic self-efficacy, their locus of control, and their grades earned in high school cyber courses. More specifically, this study examined what role, if any, does academic self-efficacy play in the grades earned in high school cyber courses, controlling for a student's gender, number of previous cyber courses taken, and ethnicity. In addition, this study also examined what role, if any, does locus of control play in grades earned in high school cyber courses, controlling for a student's gender, number of previous cyber courses taken, and ethnicity. The primary dependent variable for this study was the student's average GPA as provided for the spring semester of the 2015-2016 school year. The results of data analysis will follow in the coming pages.

Quantitative Analysis

Population Size

The quantitative study sample included high school students in grades 9 through 12, who were currently enrolled in cyber school courses during the spring of the 2016-2017 school year. The volunteer participants were enrolled in one or more high school online cyber school courses within the virtual programs located within Northeastern Pennsylvania region. The total population of available participants receiving the direct mailing was 200. Of the 200 surveys mailed, a total of 48 completed surveys were returned, providing a return rate of 24%. The resulting sample size was $n = 48$.

Grade Level

Only students grade 9-12 were considered for participation in this study. The descriptive statistics of the participant grade level are presented in Table 1, showing a predominance of seniors (*n* =29, 60.4%) completing the study in its entirety.

Table1

Participants Grade Level

Variable	Frequency	Relative Frequency
Grade Level		
9	7	14.6
10	4	8.3
11	8	16.7
12	29	60.4

Gender

The descriptive statistics of the participant sex are presented in Table 2, showing a majority of female participants (n=34, 70.8%) completing the survey in its entirety.

Table 2

Gender of Participants

VARIABLE	Frequency	Relative Frequency
Gender		
Male	14	29.2
Female	34	70.8

School Association

Participants of this study came from a number of educational institutions. All students who participated came from the Northeastern Pennsylvania. Not all participants attended the same type of educational institution. A majority of participants came from cyber academies (designated by CA) that are mere extensions of the local brick-and-mortar institution (n = 39, 81.3%). Other participants were enrolled in recognized cyber charter schools (designated by CC) operating in Northeastern Pennsylvania. The descriptive statistics for school association are seen in Table 3 below.

Table 3

School Association

VARIABLE	Frequency	Relative Frequency
School		
School#1 (CA)	22	45.8
School#2 (CA)	3	6.3
School#3 (CC)	2	4.2
School#4 (CC)	3	6.3
School#5 (CC)	1	2.1
School#6 (CC)	2	4.2
School#7 (CA)	14	29.2
School#8 (CC)	1	2.1

Number of Courses Taken

Participant's transcripts for the spring semester of the 2015-2016 school year were secured once the semester ended. The participant's average GPA utilized for this study, was determined by averaging the grades of all courses taken during that spring semester. Table 4, below, reflects the frequency and relative percent of the cyber course(s) taken by study participants within the above mentioned spring semester. The mean number of courses taken was determined to be 3.9, as seen below. It should be noted that 45.9% of the 48 participants took 5 or more courses during the spring semester of the 2015-2016 school year.

Table 4

Number of Courses

VARIABLE	Frequency	Relative Frequency
1	13	27.1
2	4	8.3
3	6	12.5
4	3	6.3
5	8	16.7
6	7	14.6
7	4	8.3
8	1	2.1
9	2	4.2

Variable	*M*	*SD*	95% *CI*
No. of Courses	3.90	2.43	(3.19, 4.16)

N*ote*. *n* = 48 for all items; *M* = Item mean; *SD* = Item standard deviation; 95% *CI* = 95% Confidence Interval for variable mean.

Average GPA

The primary dependent variable for this study will be the participant's average GPA for their spring semester cyber courses. The participant's average GPA utilized for this study, was determined by averaging the grades of all courses taken during that spring semester. Table 5

presents the mean of the participant's grades for the spring semester. Table 6 provides a visual representation of participant's average grades in relation to the number of courses taken. The mean grade for all participants was 79.35 with a standard deviation of 15.65.

Table 5

Average GPA

Variable	*M*	*SD*	95% *CI*
Average Grade	79.35	15.65	(74.81, 83.90)

N*ote*. *n* = 48 for all items; *M* = Item mean; *SD* = Item standard deviation; 95% *CI* = 95% Confidence Interval for variable mean.

Previous Cyber Experience

The quantitative results of this study represent a spectrum of participants experience with taking online courses. Table 6 displays the frequency and relative frequency of students responses to the survey question related to previous experience with online cyber courses. It should be noted that 39.6% of the study participants had no prior experience with online cyber courses.

Table 6

Previous Cyber Experience

VARIABLE	Frequency	Relative Frequency
None	19	39.6
1 to 5	15	31.3
6 or more	14	29.2

Parental Education Level

One of the variables of focus within this study was parental education levels. Table 7 represents the frequency and relative frequency of parental education levels determined from the analysis of responses to the survey question.

Table 7

Parental Education Level

VARIABLE	Frequency	Relative Frequency
Did not finish high school	4	8.3
Graduated high school	13	27.1
Attended college	29	60.4
Unknown	2	4.2

Ethnicity

Table 8, below, represents the frequency and relative frequency of ethnicity as determined from the analysis of responses to the survey question. Eight ethnicity responses were available, however only 5 categories were selected. Results from this study are representative to national results where "close to 70% of the students in virtual schools were White-Non-Hispanic" (Miron & Gulosino, 2016, p. 14).

Table 8

Ethnicity

VARIABLE	Frequency	Relative Frequency
African American	6	12.5
Latino or Hispanic	5	10.4
White	35	72.9
Asian	1	2.1
Other	1	2.1

ASE Analysis Results

Participant's academic self-efficacy (ASE) represents one of two key independent variables rated by the use of the academic self-efficacy subscale created by Muris, 2001. Muris' academic self-efficacy subscale is a 9 item academic oriented questionnaire utilizing a 5 point Likert scale ranging from a low of "not very well" to a high of "very well." The options were converted to a 1-5 numerical scoring for data analysis. The higher the score relates to a higher level of academic self-efficacy, meaning the student a high scoring students beliefs that he/she has a high ability to manage their own learning and to succeed academically. Students can score between 9 and 40 points. The subscale is rated for students between grades 8 to 12, and has a reported reliability score in which Cronbach's Alpha is .88 (Muris, 2001). Results are presented below in Table 9. The mean response to subscale was 3.69, with a standard deviation of 0.64.

Table 9

Summary Statistics for Academic Self-Efficacy Subscale Questions

Variable	*M*	*SD*	99.9% *CI*
SE 1	3.25	0.86	(2.81, 3.69)
SE 2	4.17	0.88	(3.72, 4.61)
SE 3	3.02	1.10	(2.46, 3.58)
SE 4	3.40	1.16	(2.81, 3.98)
SE 5	3.71	1.22	(3.09, 4.33)
SE 6	3.75	0.76	(3.37, 4.13)
SE 7	4.02	0.98	(3.53, 4.52)
SE 8	3.81	1.18	(3.21, 4.42)
SE 9	4.08	0.74	(3.71, 4.46)
SE Total Score	3.69	0.64	(3.36, 4.02)

Note. n = 48 for all items; *M* = Item mean; *SD* = Item standard deviation; 99.9% *CI* = 99.9% Confidence Interval for variable mean; SE = Self-Efficacy.

LOC Analysis Results

Locus of control (LOC) represents the second key independent variable rated within this study by using an abbreviated version of Rotter's 29-item locus of control instrument (Rotter, 1966). The Rotter component of the survey is comprised of items for which a student must pick one of two selections. Originally referred to as the I-E scale by Rotter, each selection of the survey is awarded either a 0, or a 1. A total of 13 points can be achieved with this section. A high score will relate to an external locus of control, and a low score relates to an internal locus of control. Table 10 presents the frequency and relative frequency of response to the various 13

questions. The mean locus of control score was 6.13, which would be considered a high internal score close to a low external. Overall, 60.41% of the participants were scored as having an internal locus of control.

Table 10

Locus of Control Results

VARIABLE	Frequency	Relative Frequency
LOC 1		
A*	11	22.9
B	37	77.1
LOC 2		
A	9	18.8
B*	39	81.2
LOC 3		
A	12	25.0
B*	36	75.0
LOC 4		
A	19	39.6
B*	29	60.4
LOC 5		
A*	17	35.6
B	31	64.6
LOC 6		
A*	41	85.4
B	7	14.6

LOC 7		
A*	27	56.3
B	21	43.8
LOC 8		
A	32	66.7
B*	16	33.3
LOC 9		
A	43	89.6
B*	5	10.4
LOC 10		
A	21	43.8
B*	27	56.3
LOC 11		
A	23	47.9
B*	25	52.1
LOC 12		
A	38	79.2
B*	10	20.8
LOC 13		
A	36	75.0
B*	12	25.0

Note. Relative Frequency = percent of total. LOC = Locus of Control; For LOC, * = External Locust of Control Response.

Results of Multiple Regression Analysis

In the table below, Table 11, the results of a multiple regression analysis with the student's average grade being the dependent variable within the analysis. Multiple regression is an extension of simple regression in which the outcome is predicted by a linear combination of two

or more predictor variables as explained by Field (2009). The specific method of regression used was the "Enter" method. Using this method of repression, all predictors are forced into the model simultaneously (Field, 2009).

Because the number of "cyber course" variable had four levels, it was necessary to re-code the variable into two dummy variables. The results for responses, 1 to 3, and 3 to 5, were combined into one response for the first dummy variable. The second dummy variable considered the response for six or more courses in comparison to all the other responses. In addition, the data related to parent's highest level of education provided no value to the analysis and was not included, due to the small sample size, and skewed responses. With regards to ethnicity data results, the coding of data ultimately reflected two groupings, white and all others. This too, was the result of the small sample size. Finally, data were analyzed for the possibility of a "school" effect using a multi-level linear model. The results of this analysis provided no evidence due of school effect.

However, results from the multiple regression analysis do confirm that a significant statistical relationship does exist between academic self-efficacy and the participant's average grades. This is evidenced by a highly significant ($p < .001$) regression coefficient for SETotal as can be seen in Table 11 below. No statistically significant relationships with participants' average grades were found with regards to locus of control, number of cyber courses taken previously, participant gender, or ethnicity.

Table 11

Multiple Regression Model with Average Grade as Dependent Variable

Predictor	*B*	*SE B*	*β*
Step 1			
Intercept	20.76	15.19	
SETotal	13.70***	3.22	.56
LOCSum	1.32	1.04	.17
Step 2			
Intercept	19.88	15.20	
SETotal	13.07***	3.22	.54
LOCSum	1.20	1.03	.15
CyberCourse1	7.66	4.66	.23
CyberCourse2	5.16	4.71	.15
Step 3			
Intercept	18.67	15.81	
SETotal	12.60**	3.37	.52
LOCSum	1.30	1.06	.17
CyberCourse1	6.63	4.85	.20
CyberCourse2	4.95	4.80	.15
Female	4.36	4.59	.13
Other	-1.44	4.76	-0.41

Note. n = 48. *B* = unstandardized beta coefficients. *SE* = standard error of beta. *β* = standardized beta coefficients. SETotal = Academic Self-Efficacy score; LOCSum = Locus of control score; CyberCourse1 = 1 to 5 cyber courses previously taken vs. 6 or more or none; CyberCourses2 = 6 or more cyber courses previously taken vs. 1 to 5 or none; Female = gender, Other = all ethnicities except white.

The multiple regression analysis performed on the quantitative data did confirm a strong relationship between both academic self-efficacy and student's earned grades in cyber courses as seen in Table 11 above. By examining the results of Table 11 more closely, you can better understand the importance of academic self-efficacy within the resulting regression model.

The unstandardized beta coefficient (*B)* for SETotal (ASE total score) in step 1 is 13.70 (*B*= 13.70). The unstandardized coefficient represents the amount one could expect a student's average grade to increase with one additional increase in the student's ASE score. In addition, the standardized beta coefficient (β) for SETotal (ASE total score) in step 1 is .56 (β= .56), as compared to the beta coefficient (β) for LOCSum in step 1 of .17 (β= .17), shows the level of importance each variable shares, which further supports the relationship of academic self-efficacy and the student's earned average grades.

This relationship is further supported by results showing of a highly significant (p<.001) regression coefficient for SETotal. The R^2 (.287) refers to the amount variability in the outcome, approximately 29%, of the students earned average grades is accounted for by the predictors of academic self-efficacy and locus of control (Field, 2009). Since LOC was determined to have no significant relationship with the dependent variable, average grades, the entire R^2 resulting value is related to the academic self-efficacy score results.

The Adjusted R^2 gives an indication of how well the resulting regression model generalizes and it is preferred this number be the same or close to the value of the R^2 (Field, 2009). The results in this case are positive. The difference between the R^2 and the Adjusted R^2 in step one is .031, or 3%, which means if this regression model were derived from the population as opposed from the sample, the model would account for about 3% less variance in the outcome. The lower this percentage the stronger your model.

Qualitative Analysis

Qualitative Data

The qualitative portion of this study was designed and intended to answer and support the previously provided research questions. The qualitative portion of this study consists of personal interviews with volunteer participants. Within the survey portion of the mailed documents, student participants had the option to indicate if they would be willing to take part in a short interview regarding their cyber experiences. After all data packs were collected from the 48 respondents, a list of potential interviewees was created. The list consisted of 12 possible candidates from which the researcher was able to interview 10. Two of the 10 interviews were done face to face. The remaining 8 interviews were conducted over the phone. A total of 7 females and 3 males were interviewed. The participant's grade levels were the following: 12th grade – 4, 11th grade – 3, 10th grade – 2, 9th grade – 1. The cyber experience levels of the interview participants ranged from 1 semester to 6 years. The final interviews consisted of 7 questions. Some of the questions were simplistic in nature, but all were included in an effort to triangulate the data received.

Qualitative Analysis Process

Analysis of qualitative data is a process of collecting data, organizing data, taking data apart, and putting it back together, all in an effort to see the inherent themes that were not recognizable at first glance. The model used behind the processing of the qualitative data within this study is that of the grounded theory.

In their book, *The Discovery of Grounded Theory* (1967), Barney G. Glaser and Anselm L. Strauss pushed grounded theory and qualitative research into social science history (Charmaz, 2000). At the time, quantitative studies were the dominant method of research used in the social science arena. Both, Glaser and Strauss, believed that knowledge could be extracted from

phenomena through sensory experience, then thoroughly interpreted through logic and reasoning, a solid methodology they both went on to postulate in many books and articles. However, grounded theory has not been without its critics. In fact, Glaser and Strauss themselves, took their own theory in two different directions.

Nonetheless, grounded theory in practice is comprised of a series of specific procedures. The procedures described and followed by this researcher are not the only procedures or methods that could be utilized in this process, but they do represent the more common procedures used in this theory creation method.

The grounded theory process begins with the conceptualizing of data. Essentially, conceptualizing is the practice of breaking down, or the taking apart of your data (Strauss & Corbin, 1990). For this researcher, this meant literally cutting apart the transcribed interviews by sentence, or by word, that this researcher felt stood for, or represented, an integrated phenomenon. This resulting piece of data was then conceptually labeled with an identifier for future grouping. Each piece of data that was cut out was then compared to the previous piece to see if it fit within the previous label. If it did not, that piece of data received a new concept label. This process was followed until every piece of every transcript was reviewed.

The next step was to group these concepts by the phenomena that were discovered within the data. This procedure is considered the categorizing step in the grounded theory constructivist process (Strauss & Corbin, 1990). The intent at this stage is to reduce the number of various concepts by connecting them with specific phenomena. These categories are given names, as a result of the properties of the data within them. This researcher then attached each coded piece of transcript to a named category. The collection of attached pieces are considered subcategories. During this process, this researcher began to write notes (memos) representing

thoughts, within the boundaries of the posters in which the pieces were attached. This process is described as "memo writing" or "code notes" (Charmaz, 2000; Strauss & Corbin, 1990), and is a positive byproduct of the process that will stimulate thought in the later stages of theory construction.

The next step in the grounded theory model is to "refine" the categories into theoretical constructs (Charmaz, 2000). This step puts the data back together by making connections between categories and the information within them. This is also called Axial Coding (Strauss & Corbin, 1990). The focus of this step is to identify the conditions within that category that have given rise to it. This step requires an expansive effort of energy to identify the actions, reactions, consequences and relationship, of the subcategories (coded notes) as you begin to build the inherent theoretical constructs. This process of relating subcategories to categories involves the development of questions that help you test your relationships or lack thereof. It is here that we find the benefits of the memo writing or the code notes.

The final, and most complicated, step in the process is considered the selective coding (Strauss & Corbin, 1990). This is the point at which you begin to join or integrate your categories to begin to form a grounded theory. Strauss and Corbin (1990) also refer to this part of the theory construction as the "story." While they go on to describe a much more complicated and vast process, the result is essentially a descriptive account about the centralized theme or phenomenon that exists within the confines of the data. There is no guarantee that the resulting theory will support the qualitative results, however, it should assist in explaining the phenomenon surrounding the data.

Theory Construction

The theory construction process began with this researcher's personal transcription of the 10 interviews. Prior to the breakdown of data and the conceptual labeling, this researcher listened several times to the audible version of the interviews, as well as read the transcribed versions twice.

Conceptual Labeling

The conceptual labeling portion of this process yielded many different labels utilizing the alphabet. After all data was labeled, this researcher reviewed the groups of labels to determine if the data within was related to, or similar in nature to, another label. After such an analysis, the result was the creation of 9 different identifiers. These identifiers are one or two word labels created to allow common grouping of similar data found within the interviewee's responses. The identifiers are presented in the table below.

Table 12

Data Identifiers for Qualitative Results

Experience	Connected	The Past	The Decision	Emotion	Effective Practice	Confidence	Learning	What's not said

Refinement of experience. The label "experience" was primarily created from information related to student's responses to the interview question regarding their past experience with online cyber learning. This question was asked to further explore the potential relationship between cyber experience and resulting earned grades. The results proved to be very mixed. Interview participants gave a spectrum of answers ranging from this being their first year to having six years of experience. Some participants started online schooling in intermediate

school or even elementary school as seen in the following quotes: Boy 1, "…attended…academy, between my 6th year and my 11th year." and Girl 2, "6 years" (from a current 10th grade student). Others participants were experiencing cyber for the first time as a senior in high school.

The initial question the researcher asked to further refine this category of responses was; "Do these students have much experience in cyber at the time of this study?" However, the question was later refined to: "Is there a specific time in a student's education that is more appropriate for a transition to cyber learning?" This researcher's answer to that question was ultimately, no it does not. It did not appear that students were waiting for a particular time in their educational career to decide to move into cyber. Hence the phenomenon that was recognized within this category was:

A. The time of entry to cyber, as it relates to a student's educational career, may not be of importance, or as high a level of importance or consideration, as for other considerations for entering cyber.

Refinement of connected. Kirby and Sharpe (2010) had noted in their study, that the typical online learner who completed online courses were three times more likely to be positively disposed to school and academics. The underlying belief held here is that students who are not connected to their school in ways beyond just academics, will find it easier to leave for cyber learning options. Like the previous category, in an effort to further refine the category, this researcher asked: "Were these cyber students connected to their brick-and-mortar school through more than just academics?" After reviewing the participant's responses it was clear the majority of the students had not participated in many after school activities. However, some were connected for years to sports or other activities within their schools. Field hockey, soccer, and

chorus were some of the responses from students. The talk of team sports and chorus would typically send a message of greater commitment to the institution.

The refining question was then changed. This researcher changed the above question to: "Do after school activities, such as clubs and sports, and the relationships within, matter enough to keep a student from leaving the brick-and-mortar for cyber learning?" While these 10 interviews did not provide enough data to really determine the extent of such a question, there was enough information to think that sports and activities may not play as strong a part in student retention as one may think. The resulting phenomenon that was recognized in this category was:

B. Sports and after school activities may not have the anticipated holding power once thought, over a student's decision to attend a cyber school.

Refinement of the past. Archambault et al. (2010) research states that cyber schools have a high enrollment of students at risk of failing to graduate and that these students are coming to cyber schools with low academic skills. The category of the past is an exploration of the responses from student's interviews that relate to their prior academic past. The refining question this researcher asked for this category was: "Are these students coming to cyber school with a poor academic past?" If the students were honest in their responses, the answer to the question is clearly no. There were[w1] many responses such as: Boy 1, "some A's, mostly B's"; Girl 3, "B's and C's"; Boy 1, "I have never failed a course"; Girl 4, "Maybe like one (in response to every failing a course)." Overall, the responses were very favorable from the students, with some being very specific as to their overall average such as: Girl 7's response, "leading up to cyber…94!" or Boy 3's response, "Like an 82 overall."

The resulting phenomenon that was recognized in this category was:

C. Students were not migrating to cyber with poor academic pasts. Also, it does not appear they are leaving their brick-and-mortar due to poor or failing grades.

Refinement of the decision. This category dealt with responses to the interview question that addressed why one enters into cyber school. There was a tag-along on that question that was added during the interview process, that asked about who made that decision. Very few students recognized this part of the question and simply did not answer it. Those that did, provided little more than a basic explanation such as; Girl 5's response, "It was both" or Girl 4's response, "..it was like me and my parents."

In this situation, it was what was not said that makes this researcher consider this category significant. The resulting phenomenon that was recognized in this category was:

D. The decision to go to cyber was mutually agreeable to both student and parent.

Refinement of emotion. This category was also related to the responses to why students join cyber school. However, this group of subcategories contained causal conditions (Strauss & Corbin, 1990) that when examined project an even deeper meaning. Many of the responses in this category give a glimpse of some of the factors that were involved in the participant's decision to enter cyber school. For example, responses included:

- Girl 1, "teachers weren't understanding to my situations,"
- Boy 1, "best option for us at the time,"
- Girl 2, "lot of circumstances that put us into cyber,"
- Girl 2, "normal school problems, like violence….fear of other people watching you…people being really loud,"
- Girl 4, "to get away from the other kids and the teacher and stuff..(social issues),"
- Girl 5, "…getting bullied,"

- Girl 6, “need to be more organized,”
- Boy3, “they forgot my English,”
- Boy1,“…surrounded by other students,”
- Girl 6, “it can’t be that bad (cyber),”
- Girl 4, “to get away from the whole social aspect of school…” [w2]

Looking into these responses, this researcher senses a rise in emotions. Within these lines is disappointment, resentment, fear, lack of hope, and a general feeling that brick-and-mortar school is not that valuable after all. The resulting phenomenon that was recognized in this category was:

E. The causal conditions that lead students to enter cyber school are very powerful and emotionally charged for both the student and the parent.

Refinement of effective practice. This category of responses is based around the question of whether students feel they are growing academically as well in cyber as they would in brick-and-mortar school. Students were questioned with further probes related to which method of learning they found better. The analysis of this data leads this researcher to question if students are experiencing enough effective practice in school, and what is their concept of what school is for them. Note that this researcher refined this category by asking two questions: “Is cyber better for learning?” and “Am I growing?”

An examination of the participant’s responses in this category, once again, have this researcher first noting what is missing. Missing from these subcategories are responses of absolute affirmation that the student feels cyber is the preferred method to learn and that the student truly feels they are growing academically. When asked if cyber is a good way to learn, some responses were the following:

- Girl 4, “Yeah…I think so,”
- Boy 2,“um…I would say about the same,”
- Boy 3, “Well yeah, I think it’s good.”
- Girl 3, “Nnnnnno!”

Another participant, Girl 6, expressed her frustration with the education process of cyber in her response: “You just can’t look at a book or read a packet they want you to print out or something,..or just look at it online…you actually have to have someone there in person…”

Responses did reflect different feelings toward what education is, such as when Boy 1 responded: “I still get the information I would be learning in public school, [pause] um..I still read from a book and do exercises and whatnot.” Other responses were evidence that students may not know what it means to grow academically, as Girl 5 simply responded to the question if they are growing academically: “Not really. I don’t really know[w3].”

Still, there were others with positive responses to online learning: Girl 1, “…they give me the time I need and make sure that I am learning properly.” and Girl 8, “…I got done quicker and could learn more effectively.”

This researcher’s analysis of this data would include students lukewarm at best response to the entire category, as well as a clear hesitancy in responses. It was clear students were not overwhelmingly happy with online learning methodology, as well as the value of their education. What did become apparent in this category analysis was the student’s recognition of teachers or people who help. It is obvious that they value that aspect of education. However, this researcher feels that this “getting help” aspect of education seems somewhat foreign to these students, which leads me to be concerned that it may not be the experienced norm within the education setting. The resulting phenomenon that was recognized in this category was:

F. Students seem unaccustomed with teacher assistance in the brick-and-mortar and yet, recognize it as a valuable part of learning in cyber.

Refinement of confidence. Like the previous categories, the data in the confidence category provides interesting analysis. Overall, the interview participants consider themselves self-motivated, to a degree. However, an opportunity was missed by not directing the question more directly toward school and academics. Some students did apply the question to school, such as this participant: Boy 1, "I consider myself motivated if I can get into it, but if I can't get into the class, it is very difficult to get motivated." This researcher gathers from the participant's responses, that the motivation most of them are speaking of is external as seen in this statement: Girl 6, "I mean I can be a motivated person, it just depends on what like school wise (sic)."

The resulting phenomenon that was recognized in this category was:

G. The participants generally feel they are somewhat motivated, but may not understand the definition of motivation or the different types. There is, however, a connection of motivation and interest level in school depending on the teacher.

Refinement of learning. This category developed accidentally through the evolution of the interview questions and topics that developed out of some of the discussion. Math related courses suddenly appeared through the interview process, as the most difficult to learn online. Participant responses included statements such as: Girl 4, "I think that is the class I have the most trouble with (math)…math and biology…they are really hard,…" There was one statement that the researcher found interesting, a statement that went further to explain why math may be harder for online learners. That statement was from Boy 3: "I think with math I would learn better with a teacher." When probed further about his feeling in regards to other classes, Boy 3's response was: "No [pause] because other classes you don't necessarily feel you need a teacher."

This researcher feels this statement is significant in that it speaks to a student's previous experience in learning, and that is, that too often education flows one direction from teacher to student, and not back the other way. The transmission of simple facts, dates, and circumstances, can look like education is taking place, however it is just a practice of short term memory. I would suspect the complexity of math and its reliance on process and procedures, makes success more obtainable if interaction with the teacher is available.

The resulting phenomenon that was recognized in this category was:

H. Learning is misinterpreted as a one direction linear flow of information from the teacher to the student which is then recalled within a short period of time. Therefore, students can feel that they do not need real live teachers as they trust they can interpret information just as well from another source.

Refinement of what's not said. The statements in this category could fall into others as well, however, because of their nature, they are being analyzed within this category. The guiding question of this category is simply, what's not said? For example, Boy 1 exclaims that, "I can work at the pace I need when I'm having trouble (in cyber)." At first glance this statement is not particularly enlightening, however what is not being said is the same thing, but within the brick-and-mortar setting. It is clear that this student has not experienced being able to work at his/her pace when having trouble in the brick-and-mortar school. A similar statement about pace is also informative: Boy 1, "(some classes)…is too easy, I can work through them quickly and then move on faster than a normal (brick-and-mortar) class." What is not being said here is that a student can experience their own pace within the "normal" school. Again another statement related to pace: Girl 8, "I read quickly and I learn quickly, so for me to,...I feel like I waste a lot

of time when I am in class (brick-and-mortar). Further evidence that students feel restricted having to conform to the teachers set pace typically found in the brick-and-mortar school setting.

Students also speak to their experiences with teachers in this category. For example: Boy 1, "(cyber) teachers are very personable with…students, and I really enjoy that." Another statement exemplifies the lack of a quality relationship between student and school is: Girl 1, "they (brick-and-mortar) didn't understand why I was learning slowly, and didn't put in the time in to getting me tested." These statements stand out because what is not being said, is that students (when attending brick-and-mortar) are not experiencing a quality student/teacher relationship that fosters student growth.

The resulting phenomenon that was recognized in this category was:

I. Students may not be getting personal assistance and can feel they are being held back in some way within their current brick-and-mortar and desire a change from that feeling.

As the final step of the grounded theory process, it is important to go beyond description to conceptualization and tell the story in an analytical way (Strauss & Corbin, 1990) which will be completed in chapter 5.

Summary

The purpose of this study was to determine the influence academic self-efficacy and locus of control had, if any, on the earned grades of students participating in online high schools courses. More specifically, this study examined what role, if any, does academic self-efficacy and or locus of control play in the grades earned in high school cyber courses, controlling for a student's gender, number of previous cyber courses taken, and ethnicity.

The analysis of the data, both quantitative and qualitative, has provided mixed results. From a quantitative perspective, the analysis provided a statistically significant relationship between academic self-efficacy and earned grades alone, while other variables such as; locus of control, participant gender, participant ethnicity, and the number of previous cyber courses, failed to show a relationship to the dependent variable of earned grades. It is possible the small sample size kept a relationship with the above variables from taking place.

From the qualitative perspective, this study did provide support to the quantitative results, but more importantly the analysis provided an explanation for the process or progression that these students may have experienced as they made their journey from brick-and-mortar classes to eventually decide to enroll in online cyber courses. This journey can be described as a passage fueled by emotion as the data reveals possible underpinnings related to previous negative experiences within the brick-and-mortar schools. Virtual learning presents itself as the perfect vehicle for students and parents to remove themselves from those negative situations. The two methods of analysis collide in a particular manner that has been touched upon here and will be further explored in chapter 5.

CHAPTER FIVE

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

Little is known about the inner workings of virtual schools, and despite this, increasing numbers of parents and students are choosing cyber school as their platform for their education. All indications are that these schools are not as successful as traditional public schools. In addition, evidence shows that the student make-up of the schools differs from those of traditional public schools (Miron & Gulosino, 2016), with cyber schools potentially having sizable enrollments of students who may lack the beliefs and skills to be successful with the online learning methodology. Despite the evidence, enrollments in cyber schools continues to climb.

Originally, designed and utilized to reach students in remote places, virtual learning has expanded into all aspects and areas of education. No longer does online learning serve the most advanced of students desiring the AP courses they cannot get locally, but now it serves all students at all levels with all different needs. This has not been without controversy or concern.

Pennsylvania currently has over 36,000 students enrolled in virtual charter schools. Like other states, Pennsylvania continues to struggle with the legal issues, financial concerns and the resulting effectiveness, of its cyber charter schools. Cyber charter schools, representing one form of the marketplace education model, have been a true disrupting force causing a re-evaluation of the methodology and mindset of the traditional education framework.

We, as educational leaders, need to better assure every student's academic success despite which platform, brick-and mortar, virtual, or blended, students choose to utilize. Also, as educational leaders, we must recognize there are many variables which play a part in a student's academic success in both brick-and-mortar and virtual schools, and a continued focus on these

variables may improve student success for all. The purpose of this study has been to examine two such variables that can have an influence on student's performance outcomes, those being academic self-efficacy and locus of control. More specifically, the purpose of this study is to examine and describe the extent at which student academic self-efficacy and locus of control impact, if any, the grades earned by students of high school cyber courses. This study attempted to answer the following questions:

1. What role, if any, does academic self-efficacy play in the grades earned in high school cyber courses?
    A. What role does academic self-efficacy play in the grades earned in high school cyber courses controlling for gender?
    B. What role does academic self-efficacy play in the grades earned in high school cyber course controlling for prior cyber course experience?
    C. What role does academic self-efficacy play in the grades earned in high school cyber courses controlling for ethnicity?
2. What role, if any, does locus of control play in the grades earned in high school cyber courses?
    A. What role does locus of control play in the grades earned in high school cyber courses controlling for gender?
    B. What role does locus of control play in the grades earned in high school cyber course controlling for prior cyber course experience?
    C. What role does locus of control play in the grades earned in high school cyber courses controlling for ethnicity?

Summary of Research Findings

From a potential population of 200 students attending cyber schools, or taking online cyber courses in the Northeastern Pennsylvania area, 48 respondents provided quantitative data for analysis. The quantitative research tool was a 27 question survey that was mailed to the entire population immediately after the 2015-2016 school year had ended. Of the 48 respondents providing quantitative data, 12 responded they were willing to be interviewed. Of the 12 potential candidates for interviewing, only 10 were successfully reached and questioned. The interview consisted of 7 questions, but developed into additional conversation if students were more responsive. The result was a small sample size of $n = 48$. Presented below are the key findings that emerged through an analysis of the data provided from the 48 participants.

Quantitative Analysis

Research Question 1

What role, if any, does academic self-efficacy play in the grades earned in high school cyber courses?

The analysis of the quantitative data has provided evidence of a statistically significant relationship between academic self-efficacy and grades earned in cyber courses at the high school level. Bandura (1977) defined self-efficacy as one's personal beliefs for judgements regarding their abilities to form and perform plans of action to accomplish certain tasks or attain certain goals. Bandura proposes that individuals gain their self-efficacy information, which they process cognitively, from four primary sources: performance accomplishments, vicarious experiences, verbal persuasion, and physiological states. How these factors have influenced this study and their potential influence on increasing a student's self-efficacy will be discussed next.

How does the typical student gain their self-efficacy information (feedback) to begin to build their self-efficacy beliefs? The method in which a person can influence their self-efficacy the most, is through performance accomplishment. Performance accomplishment is based on a person's personal mastery experiences. Essentially, when a student experiences personal mastery of an educational concept or task, their self-efficacy is increased, however, it is generally increased in that specific area in which the experience took place. The qualitative data provided shows students involved in this study have had a long relationship with obtaining passing grades (primarily C's and higher) in their years prior to entering cyber school. That was evidenced in their interview responses to the question regarding previous grades being largely very positive. This provides support for the idea of performance accomplishment.

As a result, and in alignment with the theory of self-efficacy, this researcher feels the study participants have gained their self-reported high level scores of academic self-efficacy through their previous positive experiences involving performance accomplishment (personal mastery) of the most basic learning process. Essentially, at the most basic level, students are proficient in receiving information (content) from teachers, or other sources, placing that information to memory and then recalling that information at a later date. This process, repeated time and time again, would develop a sense of self-efficacy if it was met with a majority of successful outcomes. The mean response for students when questioned about their ability to pass all their subjects and pass a test, was 4.1 on a 5 point scale. This additional evidence helps support the participant's personal mastery in this area. Potential for the further enhancement of students' academic self-efficacy through this method is seen as probable.

Self-efficacy information is also received through vicarious experiences, physiological states, and verbal persuasion (Bandura, 1977). Students, learning in the isolation of cyber

schools, will not benefit from the observation of watching other students (vicarious experiences) be successful in the understanding of a concept or process, as this opportunity does not frequently exist in cyber schools. However, prior to attending cyber, these experiences were possible and may have had some influence on students' self-efficacy. It should be noted that 40% of the respondents were experiencing cyber school for the first time at the point of the study. As a result, efforts to enhance self-efficacy through this method would likely be not successful.

In regards to physiological states (emotional arousal), this method of enhancing self-efficacy for a cyber student is also unlikely. Many of the respondents in the interviews did mention unfavorable experiences while attending their brick-and-mortar schools. If the students' previous experiences with education involved stress, anxiety, or fear, it is unlikely that these emotions would support the growth of self-efficacy, unless these experiences were seen as life and death matters. It is in these situations that fear reactions typically breed more fear, so attempting to further enhance a persons' self-efficacy through this method would most likely not be effective.

The last method in which students gain information in regards to self-efficacy is through verbal persuasion. Verbal persuasion is likely to be present in the virtual education experience as teachers do communicate with students through email, phone conversations, chat rooms and other opportunities. So potential for this method to be used to further enhance self-efficacy is high, however, caution should be noted as verbal persuasion is quickly diminished by disconfirming experiences.

In conclusion, a statistically significant relationship between academic self-efficacy and students' earned grades in cyber courses has been established in this study. Understanding how

one enhances their academic self-efficacy provides insight into why the relationship may exist. That understanding also provides insight in how to further strengthen that relationship. Methods to further enhance a students' self-efficacy come from four areas: performance accomplishments, vicarious experiences, physiological states, and verbal persuasion. Some of these methods are more practical to use than others. How a student's self-efficacy beliefs can be enhanced through using the above mentioned methods, will be discussed in the following pages.

Implications for Practice

Taking the stance as an educational leader who is responsible for the success of all students, the knowledge gained from the area of this study could impact curriculum decisions of both brick-and-mortar and cyber schools. One possible implication could be the development of "pre-course screenings" that determine a student's level of academic self-efficacy prior to their enrollment into cyber courses and lead to interventions to enhance their low beliefs. A pre-course screening could alert educators to the possibility of a student not being successful, which could allow for the implementation of a certain set of supports that fit that particular student's needs. Those interventions could take various forms, such as requiring student participation within a course dedicated to the topic of self-efficacy and how to build it. Perhaps a student scores low on study skills, an intervention could be created for that particular area.

One such intervention could be the creation of an introductory online course dedicated to the topic of self-efficacy, its importance, the practices that it involves, and methods of increasing it. The completion of such a course could have the compounding effect of building self-efficacy while learning about self-efficacy. Not only could this course educate a student on the topic, but it could provide opportunities for students to practice methods shown to increase a students' academic self-efficacy. For example, the course may include a curriculum that helps develop

mastery in general technology operations that are seen as vital to perform the various tasks successfully within other courses.

Another possible use of the results of this study could be the increased use of prescriptive testing. Simply stated, essentially every cyber course could have built in prescriptive testing that could provide important information for the facilitating teacher or specific intervention exercises addressing the student's weak areas as represented by the results of the test. Having a clear indication of what a student's strengths and weaknesses are within the content of a curriculum of a course, can give concerned educators an opportunity to intervene and enhance academic self-efficacy in a particular content area or manner in quick fashion. From the analysis of strength and weaknesses, educators, along with the learners, could develop appropriate goals that will support the growth of positive self-efficacy beliefs. Given the individual nature of online learning, this method of learning could provide substantial benefits to students' performance. In addition, it aligns well with the most common method of self-efficacy enhancement, that being performance accomplishment.

Focusing on the efficacy expectations, the belief that one does possess the required skills to successfully perform the behaviors to reach the outcome expectations, may also provide the foundation for the development of a course "structure" that emphasizes these various components in advance. For example, once the outcome expectations of a particular academic task are broken down and clearly revealed and understood, focus can be put on listing the skills needed and required feedback desired, to create a path of mastery to the completion of the task or course. Students would move at the pace of their mastery, and their goal would be that task mastery. This method of lesson design is similar to the backwards design process of lesson development, but more transparent with specific steps of achievement (mastery) and increased

monitoring (feedback) through the process allowing students to move at their own pace to complete the task (goal). The result being, a compounding increase of academic self-efficacy beliefs through repetition, as the course proceeds toward the accomplishment of the outcome expectation (culminating course activity).

Once these patterns of success are recognized by the student, the enhanced self-efficacy beliefs can begin to generalize and overflow into other areas and other situations that have been difficult to approach in the past. For example, building on a student's high self-efficacy in Math, can eventually be used to approach his or her deficiencies in English. This would be very applicable in the virtual setting or the traditional classroom.

Even the use of vicarious experiences can be exploited in cyber schooling. The use of virtually connecting with other students (synchronously or asynchronously) who either have already accomplished the task, or can be observed accomplishing the task, could aid in building those important self-efficacy beliefs. This method of repeatedly watching on video another person accomplish a particular task in an effort to build self-efficacy belief is often used by athletes. However, circumstances surrounding the task must be comparable or the small but potential effect is reduced.

Verbal persuasion is yet another potential source for cyber students to enhance their self-efficacy. Teachers, and other educational leaders, can provide this source of information when opportunities arise. As noted previously, this method of enhancement can easily be diminished if positive experiences are not the result.

With a better understanding of the sources of self-efficacy information, educators and curriculum writers could build in opportunities for the various sources of self-efficacy information to be experienced by students in the traditional classroom as well. The intended

result would be enhanced self-efficacy beliefs from a greater number of potentially positive experiences. Students would not only receive important efficacy information and experiences from just performance accomplishments, but also from those vicarious experiences, seeing others in their classroom who have shown that mastery of the task is possible. They could also gain valuable efficacy information through verbal persuasion within the classroom from their peers who too are attempting the same exercises. Lastly, the power of emotional arousal can be significant if linked with the other experiences in a classroom setting that do not induce fear, or are induced by fear. This seems to be in alignment with the educational leader's responsibility to provide a safe environment for students to learn more effectively.

In summary, student performance in high school cyber courses has been found to have a statistically significant relationship to academic self-efficacy. Having identified how self-efficacy is enhanced and potential opportunities to utilize the knowledge, educational leaders can seek ways to incorporate these findings into today's cyber courses with the expected outcome of improved resulting grades.

Research Question 1A

What role does academic self-efficacy play in the grades earned in high school cyber courses controlling for gender?

While there was no statistically significant relationship established between academic self-efficacy and earned grades while controlling for gender, there are some interesting points that need to be documented. For example, 34 of the 48 respondents were female. That represents just over 70% of the sample. This appears to be representative of previously documented research (Diaz, 2000; Kirby & Sharpe, 2010). In addition, as simple mean comparison between the sexes of the average grades revealed a difference of 7 percentage points

in favor of females, representing nearly a 10% higher earned grade then males. Again, this general statement also appears to be in alignment with the previously provided research.

Research Question 1B

What role does academic self-efficacy play in the grades earned in high school cyber course controlling for prior cyber course experience?

As previously noted, there was no significant relationship established between academic self-efficacy and earned grades while controlling for prior experience in cyber courses. After examining the final average grades for all participants, it was found that just under 40% of the participants had no prior cyber experience.

Research Question 1C

What role does academic self-efficacy play in the grades earned in high school cyber courses controlling for ethnicity?

As previously noted, no significant relationship was established between academic self-efficacy and grades earned while controlling for ethnicity. It should be noted that the analysis of the data related to ethnicity, as presented, does support previously noted research stating that minorities lack representation in cyber schools as compared to traditional brick-and-mortar (Miron & Gulosino, 2016).

Research Question 2

What role, if any, does locus of control play in the grades earned in high school cyber courses?

While locus of control has been identified in research as an indicator of persistence related to successful experiences in the educational environment (Drago et al., 2016; Hasan & Khalid, 2014; Landis et al., 2007; Rotter, 1966), this particular study and subsequent statistical analysis failed to find any significant relationship present. This finding may be the result of the small sample size used in the study.

The distribution of the locus of control scores in this study, roughly 60% internal and 40% external, may be representative of this external to internal progression mentioned previously. It is possible, that the internal label will not reach its peak percentage for many years to come as these students represent grades 9 through 12. This circumstance may be responsible for the non-significant statistical relationship.

Research Question 2A

What role does locus of control play in the grades earned in high school cyber courses controlling for gender?

This study failed to provide any statistical evidence that locus of control was related to earning higher grades in cyber courses while controlling for gender. It is likely the small sample size is responsible for the findings of this study.

Research Question 2B

What role does locus of control play in the grades earned in high school cyber course controlling for prior cyber course experience?

The idea that internal locus of control was related to higher earned grades in cyber courses at the high school level when controlling for previous experience in cyber courses was not statistically substantiated in this study. However, prior research has shown a relationship

between students' earned grades in cyber courses and previous experience in online learning (Parker, 2003). Much of this research was conducted using college students. It is likely the small sample size is responsible for the findings of this study.

Research Question 2C

What role does locus of control play in the grades earned in high school cyber courses controlling for ethnicity?

No significant statistical relationship was established between locus of control and earned grades while controlling for ethnicity. While this researcher found no research in regards to the above specific research question, a statistical relationship was unlikely due to the small sample size.

Qualitative Analysis

The qualitative data was analyzed using the Grounded Theory method. Grounded Theory is an inductive research method that enables the researcher to generate a theory from systemic research (Strauss & Corbin, 1990). This researcher followed the prescribed set of procedures which eventually lead to the emergence of conceptual categories as provided in chapter 4. Those concepts provide a foundation on which the researcher has stood to conceptualize a story that becomes the theory, or conditional path, that can explain the data or phenomena.

In this final step of the grounded theory process, it is important to go beyond description to conceptualization and tell the story in an analytical way (Strauss & Corbin, 1990) to create a conditional path explaining the phenomena. Prior to the creation of the conditional path, the

qualitative researcher must identify the central phenomenon, or the single category, that encompasses all of the categories.

As a result of the analysis of the qualitative data using the above described grounded theory process, this researcher felt that the descriptive data representing students' educational experiences and beliefs, embodied a process completed, or a journey taken, by the students. This process or journey that was depicted in the data represents a very specific core issue within the context in which it was received. That issue is simply the circumstances surrounding a student's decision to leave brick-and-mortar for the virtual world of cyber learning. Yet at the same time, this analysis symbolizes a larger phenomenon in the context of education. That same process or journey, analyzed in the larger context of education in general, reveals another story, a story of a larger movement. That story is the story of a system that is failing to adjust to the needs of its changing population, and as a result, those who needs are not being met look for alternatives.

Prior to the creation of the theory, the researcher must develop a title that captures the central phenomenon in a single concept. When considering the resulting analysis and its relationship to the larger context of education, this researcher has titled this theory, as the *Birth Place of the School Choice Movement*.

Below you will find a more analytical version of the descriptive data found in chapter 4. The researcher took the descriptive statements from chapter 4, as well as the entire interview process, and analyzed the context, conditions, and actions from which those statements arose. The resulting information is considered the core value of the analysis.

A. The time of entry to cyber, as it relates to a student's educational career, may not be of importance, or as high a level of importance or consideration, as for other considerations for entering cyber.

Core value statement.

The decision process of a student transitioning into cyber school reaches a pivotal point that does not include consideration of the current grade of the student.

B. Sports and after school activities may not have the anticipated holding power once thought, over a student's decision to attend a cyber school.

Core value statement.

The decision process of a student transitioning into cyber school is not highly influenced by perceived student's school connection.

C. Students were not migrating to cyber with poor academic pasts. Also, it does not appear they are leaving their brick-and-mortar due to poor or failing grades.

Core value statement.

Students do not make the decision to transition to cyber school based on grades.

D. The decision to go to cyber was mutually agreeable to both student and parent.

Core value statement.

Parent and student hold similar feelings regarding brick-and-mortar school.

E. The causal conditions that lead students to enter cyber school are very powerful and emotionally charged for both the student and the parent.

Core value statement.

The decision process for a student to transition to cyber school is most likely emotionally based.

F. Students seem unaccustomed with teacher assistance in the brick-and-mortar and yet, recognize it as a valuable part of learning in cyber.

Core value statement.

Students desire more individual attention during their education.

G. The participants generally feel they are somewhat motivated, but may not understand the definition of motivation or the different types. There is however, a connection of motivation and interest level in school depending on the teacher.

Core value statement.

Students tend to connect motivation with external sources.

H. Learning is misinterpreted as a one direction linear flow of information from the teacher to the student which is then recalled within a short period of time. Therefore, students can feel that they do not need real live teachers as they trust they can interpret information just as well from another source.

Core value statement.

The methodology common used in many classrooms contributes in part, perhaps falsely, to students' academic self-efficacy.

I. Students may not be getting desired personal assistance, can feel they are being held back in some way within their current brick-and-mortar, and desire a change from that feeling.

Core value statement.

Students' past educational experiences influence their future educational decisions.

Summary of Core Value Statements

The summary of the core value statements is the final step in this theory creation process. The resulting statement is a theory that helps explain an observable phenomenon, and in this case, is meant to illuminate the origins to why the average person has transferred from brick-and-mortar into virtual online learning. More specifically this theory attempts to represent a specific cognitive explanation which describes the conditional path of the current student migration from brick-and-mortar to virtual schooling. This theory, as it is taken in the larger context of education as a whole, offers abundant issues and topics to further examine for their deeper meaning and potential interventions.

Birth place of the school choice movement.

Student movement to cyber schools, while continually growing, has not been largely inundated by the masses. However, there does appear to be some general underpinnings that continue to support the ongoing movement. First, students have negative experiences in their education process that have a substantial impact on their feelings toward that process. Some of these experiences are academic in nature, but others are more powerful experiences appearing to be social in nature. Second, students appear to be experiencing academic success prior to transitioning into cyber providing support to the idea that student transition is primarily socially related. Third, frustration

builds and the resulting emotional impact is also similarly shared by their parents. Fourth, the need or desire to escape the negative experiences outweighs current grade considerations and school connections, giving credence the idea of the highly emotionally charged and stressful decision. Fifth, students appear to have a high level of academic self-efficacy as it relates to their experiences with the current educational methodology they are most familiar with, direct instruction. This belief can reach a point at which the student feels the teacher is no longer needed. Sixth, experiences with virtual learning methodology mimic previous classroom instruction allowing students to associate some positive experiences with the new educational platform, but fall short of providing full support of its offerings. These experiences provide a slow, yet consistent, stream of students who transition to cyber schools giving indication to the educational systems inability to resolve related issues leading to the exit of students from brick-and-mortar.

Implications for Practice

The above theory, or conditional path, describes a potential process that is experienced by students who transition from brick-and-mortar to virtual schooling. When determining the implications for practice in regards to this theory, there are two perspectives that need to be addressed; the perspective of the brick-and-mortar school who has lost a student and the cyber school who has gained a student. We will address the implications from the brick-and-mortar perspective first.

In review of the above theory from the perspective of the brick-and-mortar, concerns evolve from multiple areas. First, given the data that we have been provided, it would appear that teaching to the middle without appropriate differentiation can lead to frustration for students.

Not addressing students who feel they are being held back, or feel they are being left behind, creates an opportunity for negative experiences that can ignite the conditional path described above. The challenge to educational leaders is to provide professional development and resources that allows teachers to fully address the needs of all students, those who are excelling and those who are falling behind. Ultimately, schools want students to feel they are receiving the individual attention they feel they are receiving in their respective cyber schools.

This researcher understands the full nature of this requirement and suggests continued efforts to explore methods in reaching students outside of the typical classroom time or day. Perhaps expansion of the school day or school year would provide more opportunities to address the needs of all students. The idea of each student having an adult mentor has been around a long time. Perhaps this idea could be a step in providing students with that one-on-one feeling that they desire. More importantly, the conversations resulting from those interactions can be shared with other staff, to further support that students educational and social needs within the school day.

Another interesting phenomena that should be addressed is the idea held by some students that teachers are not needed for some courses. This could be seen as a positive consequence if a student has developed such a high level of academic self-efficacy, which the student does possess the skills that they can self-teach successfully. This is very positive situation for any student if, and only, it reflects an understanding of the many methods of learning and is not just the culmination of performance accomplishment as the result of repeated exposure to direct instruction. Considering the incidental qualitative information regarding students' cyber school experiences in math would lead this researcher to consider this perceived self-efficacy is just that, the result of continued exposure to one common method of teaching,

direct instruction. As an educational leader, this information should stimulate conversation regarding how to build capacity within the school in regards to using other methods of teaching in all the different areas of academics. Professional development would continue to be needed in the area of various teaching methods, with the intended result of making the teacher the central figure in the facilitation of student centered classrooms. Academic self-efficacy enhanced with this methodology would provide students with a more comprehensive set of beliefs that could continue to serve their educational needs for many years and in many situations.

The theory above does bring recognition to a significant non-academic issue that plays a substantial role in influencing a student's transition to cyber school, that being the lack of successful resolution of socially related situations. The qualitative data clearly reveals an underlying socially oriented influence in students' decisions to leave their brick-and-mortar school. The implications for our practice in this area require a considerable investment outside the academic realm and into the realm of human psychology and conflict resolution. This researcher suggest considerable efforts be made to provide all students with curriculum related to understanding mental health awareness and how to resolve conflicts in a favorable fashion. In addition, educational leaders need to make their communities aware of these efforts and invite those communities in to assist with their development. A proactive and transparent approach to this area of concern is recommended. The previous implications for practice were all from the perspectives of the brick-and-mortar school with the intent on serving the needs of all students within their school. However, as an educational leader who could responsible for children's education in non-traditional settings, we must explore the perspective of the cyber school.

As a cyber school leader who has concerns for student experiences, this researcher's attention would be focused on the data indicating the cyber school experience was only as good

as the brick-and-mortar. As an educational leader in the cyber arena, I would suggest focusing professional development and economic resources in areas that continue to build on a student's academic self-efficacy but expanding it to all core areas. The expanded use of cross-curricular activities could be one method to accomplish this task. Designing courses that integrate exercises combining core subjects could expose students to skills and beliefs and how to use them in other areas. This would in affect be a proactive method of producing the generalizing process of self-efficacy that Rotter (1966) and Bandura (1977) both speak of.

In addition, as an educational leader reviewing this study from the perspective of a cyber school, this researcher would suggest exploiting the perception of one-on-one attention by providing increased layers of personnel that could respond to a student's needs, perhaps even outside the academic arena, and possibly into the mental health arena. This could be accomplished by arranging a process by which online guidance counselors must make regular contact with each student to assess their current social situation. Of course the expanded use of technology that could provide a face-to-face discussion could really enhance that experience.

In summary, the qualitative data, while minimal due to sample size, did provide interesting systematic results. The resulting theory provided a number of potential areas to address from both the perspective of brick-and-mortar and cyber schools. The attention to these areas of student concern can only enhance the experiences of their educational career, increasing their self-efficacy and the promotion of successful academic performance.

Expanding upon Previous Research

Upon review of the results from the analysis of data captured through this study, it is apparent that this study aligns and expands upon previous research in several areas. One such area of convergence is in the relationship and predictability associated with academic self-

efficacy and students' performance outcomes (Adeyinka et al., 2011; Bandura, 1977; Bandura et al., 1996; Zimmerman, 2000). Zimmerman (2000), states that two decades of valid research have established self-efficacy's role as a predictor to students' motivation and their learning. However, most of this research included college students or involved face-to-face learning. This study supports those findings, yet adds to existing research with the additional focus on the high school grade level student who is learning online. Research in the area of online learning, self-efficacy, and the high school population, as is this study, still remains elusive and it is recommended further research be done in this area involving secondary students.

Another area of convergence this study had with others revolved around the reasons students choose online learning over brick-and-mortar. Like Roblyer (1999), this study did find evidence of students desire to have more control over the pace of their studies. This desire seemed to be met with the use of online learning as evidenced in this study. However, this study went further in this area than previously found research, in exposing the potential frustration and fear resulting from the inability to match the educational pace with the learners needs. This researcher calls for much needed research in the area of why students' leave brick-and-mortar schools for online learning. Research in this area would be beneficial for schools of thought.

Lastly, this study's qualitative analysis uncovered an area of significance revolving around how students learn online as it compares to experiences in the classroom. Essentially, it was determined that students felt some classes (brick-or-mortar and online) did not need teachers. In close alignment with Journell's (2010) study, in which it was determined that online learning was best used for rote memorization or information transmission, this study revealed a similar phenomenon. It appears that the online learning method may be very much in order with the commonly used teaching methodology of direct instruction. Analysis of the data in this study

eludes to the idea that students' over-familiarity with this teaching method may artificially enhance their academic self-efficacy which overflows into other course topics. Is this a simple way for students to avoid learning engagement? If either of these possibilities is remotely true, the impact of education's future is concerning. This researchers feels there is an immediate need to further examine this idea at the secondary level with online and brick-and-mortar learners.

In summary, this study, while utilizing a small sample size, does parallel previous research and its findings in the areas of academic self-efficacy, why students choose online learning, and the potential implications of increased learning with lessened engagement. However, using the use of high school students in an area of research that has been predominantly focused on college level students adds another building block to existing research. In addition, this study has gone further than previous research to reveal new areas of potential research that could provide much needed information in the ever evolving area of online learning.

Limitations and Delimitations

Having completed the process of this study, it must be clearly recognized that these results have numerous limitations and delimitations that were not all anticipated during its development.

As mentioned previously in this study, one delimitation of the study is a limitation geographically as the student selection is constricted to Northeastern Pennsylvania schools and participating students. The primary delimitation was the lack of sample size. Thus, one should be cautious in generalizing the results for other counties, schools, and students.

The primary limitation to this study is the choice of the two variables chosen, locus of control and academic self-efficacy, accounting for limited internal variability of the dependent

variable, earned grades. It should be recognized that there are many variables influencing the dependent variable that have been unaccounted for in this study. Again, one should be cautious in generalizing these results to other possibly related variables.

Despite the proximal adherence to the methodology put forth by Strauss and Corbin (1990), this researcher feels compelled to inform the reader that the results of the grounded theory process are this researcher's own interpretations and inferences of the said data. This researcher's previous experiences and knowledge could have had an unintended influence or bias on the final outcomes of that process. Therefore, this researcher stresses caution to the generalizability of the resulting theory.

The researcher must also make note of the concern of possible influence on the results due to the methodology used to capture and retrieve data in this study. The method used to deliver the research survey to the population was the U.S. Mail. As a result of the delivery method, the resulting product being delivered was an intimidating 13 pages long and included an additional large returning envelope. This mailing was preceded with an introductory letter including a picture of the researcher, hoping to ease concerns and increase participation of potential participants. Despite efforts to re-word the documents in "layman's" terms, this researcher felt the final product remained complex in its writing and directives. While a 24% return rate of this survey is positive by most standards, this researcher cannot help but wonder what the results would have been if the entire transaction was completed via the internet or in person. This researcher continues to question if the size and complexity in the writing of the survey had been a deterrent for other potential participants. In addition, this researcher could not ignore the sample results of earned grades being very positive by a wide majority. The earned grades data made this researcher also question if the method of delivery failed to provide the

required sense of anonymity and privacy needed for all participants to feel comfortable in supplying their data.

Recommendations for Further Research

As the enrollment in cyber schools continues to climb throughout the nation and research regarding K-12 cyber students' success remains elusive and inconsistent, it remains imperative that research efforts continue in this area. The common predictors of online student success include many variables, of which include: self-motivation, being positively disposed toward school, having good prior academic performance, and an internal locus of control. However, there remains concerns that many students entering the virtual learning system do not inherently possess these attributes and their success is in jeopardy. As educational leaders, it is priority that we place every student into an educational setting that ensures they have, or can receive, the skills and beliefs needed to be successful in that setting. With this in mind, this researcher is suggesting further research be conducted in the following areas:

- Examine further the reasons why students enter cyber school. Traditional uses of cyber school have evolved considerably over the years, as have the reasons for students' entry. This study has revealed that there may be two distinct categories from which the reasons students leave for cyber: academic and social. If school districts are going to improve the quality of the learning experience, they must address the reasons why students are leaving. Research provides a fair amount of evidence that the methodology of cyber school is effectively the same as brick-and-mortar. Hence the continued growth of virtual schooling must be the result, or influenced by, other variables. Additional, in-depth, interviewing of students and parents would be recommended.

- Examine further the student body make-up of cyber schools to determine if ethnic differences exist between cyber schools and traditional brick-and-mortar schools. Should significant differences exist, research should pursue the causes for such differences. The ethnic make-up of the sample involved in this study did not reflect the ethnic make-up of the school populations from which the sample was taken.

- Examine further the influence of socio-economic status as it relates to cyber school enrollments. This could be examined in conjunction with ethnicity as a large majority of the sample in this study had parents who had attended college at some degree.

- Examine further the gender relationship to cyber enrollment. Again, the sample of this study was not reflective of the population from which it came. A majority of the participants in this study were female (70%). Do females possess skills that make them more successful in cyber, or do they experience more of the circumstances leading to the exit of brick-and-mortar?
- Examine further the relationship regarding completion rates on survey types for digitally oriented students. This study relied on a hard-copy survey sent through the mail. However, cyber students who are more digitally oriented may have felt more comfortable responding to a survey through the internet. Is there a difference of perceived anonymity?
- Examine further the relationship between various courses and grades earned in cyber school. This study accidentally revealed that math was considered by some cyber students as the most difficult to complete. Further research is needed to address the area of teaching methodology in the classroom versus online.

- As mentioned in previous pages, examine further the relationship between academic self-efficacy and why some students feel they do not need teachers for particular classes. This study revealed that some students feel they do not need teachers for some courses. Is this belief the result of the overuse of direct instruction? Is this a belief we should foster? Does this belief develop with age and is it in relation to the development of locus of control? Is this belief positive in nature for our students?
- Examine further the relationship between students' technological self-efficacy rating and current level of exposure to technology through formal and informal opportunities. Is there any relationship to socio economic status? Are students being exposed to cyber style learning more now than in the past? Does this influence a students' self-efficacy scores? Are there differences based on geography, rural versus urban?
- Examine further if students feel school districts provide adequate response to the social issues that seem to perpetuate throughout schools. Do students feel they are receiving appropriate attention to their social issues? Do students possess a high level of conflict resolution knowledge? Do cyber school students have a lower understanding of conflict resolution? How do social issues influence a student's perception of their school as a whole?
- Examine the level of awareness cyber school parents have in regards to the effectiveness of cyber schools in relationship to mandated testing. Are parents of cyber school students less concerned about the overall performance of a cyber school, as opposed to the performance of just their child? Does this level of concern differ for brick-and-mortar schools?

Online learning remains a complicated topic despite the amount of research attention it is receiving. Overall, more research needs to be directed towards students in the K-12 setting, as it does appear there may be significant differences in research results depending on the age of the online learner. In addition, more cooperation from cyber charters is needed to truly determine who is actually attending cyber schools and do they reflect the make-up of the sending schools. Until this is determined, efforts to improve student performance could be thwarted.

Conclusion

The type of online learning we have grown accustomed to today in our K-12 schools is far different than its origins (Watson et al., 2015). Today's cyber learning had its origins as a form of distance learning. Using pre-World Wide Web methods of delivery, mostly homebound students received their education through print materials, CD-ROMS, and video conferencing. As the internet advanced, so did online learning. The growth of online learning in postsecondary schools and in professional development helped provide further legitimacy to K-12 online learning. Today, online learning is serving students of all levels and in all locations, from in school to abroad. With the expansion of its acceptance has come a complex network of delivery methods and providers. With the potential to change the landscape of education forever, as well as the possibility to make a profit, scores of companies and individuals have descended upon this form of education. Despite claims of poor performance and high student attrition rates, enrollment in cyber schools continues to grow.

As educational leaders, we have the responsibility to provide students with the best possible educational system available. In addition, we need to provide each student with the potential to succeed in every scenario. In the examination of student success as it relates to online learning, there appeared to be a discrepancy between the typical personality attributes that

ensure student success and the typical personality attributes of the reported student make-up found in the typical cyber school. Further examination of this topic led to the development of this study to include two variables thought to contribute to student success, those being locus of control and academic self-efficacy. The resulting primary question to be answered was: What role, if any, does academic self-efficacy and locus of control play in the earned grades of students in high school cyber courses?

This study found a statistically significant relationship between the academic self-efficacy scores of cyber students and their earned grades in online high school cyber courses. In many ways, the results of this study closely replicate those studies incorporating adult learners. This is in exception to the failure to find a relationship between locus of control and earned grades. None-the-less, this study provides thoughts on how to exploit this relationship between academic self-efficacy and earned grades within the online learning system to better a student's chances of success.

In addition, this study revealed a potential conditional path by which students, who have become disenfranchised from their school, may follow in their migration to online learning. Without the true understanding of how and why students move from their brick-and-mortar schools, one cannot be sure what to attribute their success for failure to. More importantly, this conditional path may provide future opportunities to put in place interventions, bringing a halt to the student exodus.

While this study was built upon previous research primarily involving college level participants, it does show alignment in many ways to previous research. It also discloses additional complexity related to the age of secondary students and their decision process for moving to online learning.

This study also attempted to expose any relationship between locus of control, academic self-efficacy, and grades earned in cyber courses, while controlling for gender, ethnicity, and previous cyber experience. While this study failed to provide any evidence of a relationship between these variables, it did provide a foundation for further research regarding those variables.

It is the hope of this researcher that this study will continue to build upon the research in place regarding the attributes that contribute to students' success in online learning. In addition, it is hoped this study will stimulate more interest into the reasons why students leave their current brick-and-mortar for a cyber-based system offering only comparable effectiveness. Increased focus on this area could provide school districts with valuable insight to the more complex social issues that appear to be the stimulus for the student movement. After all, as educational leaders of today and tomorrow, we cannot rest on past educational practice as being adequate for tomorrow's leaders. Only tomorrow's educational practice is appropriate for tomorrow's leaders.

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Appendix A

Student Survey

William Vitulli, Doctoral Candidate

East Stroudsburg University / Indiana University of Pennsylvania

Doctoral Research Project

Cyber Student Survey

Please answer the following questions to the best of your ability. All answers are strictly confidential. You may choose to not answer any question(s) you desire.

Please fill in the following information.

Current Grade Enrolled (Circle one) 9 10 11 12

Sex (Circle one) Male Female

Please answer questions to the best of you knowledge.

1. I have taken "_____" cyber courses before this year.
    a. None. This is my first year in cyber school.
    b. 1 to 3 cyber courses before.
    c. 3 to 5 cyber courses before.
    d. 6 or more courses before.
2. What is the highest level of education that a parent has achieved?
    a. Did not finish high school.
    b. Graduated from high school.
    c. Attended college.
    d. Unknown
3. Please select the race or ethnicity you most closely relate to.
    a. African American
    b. Native American

c. Latino or Hispanic American

d. Non-Hispanic White

e. Asian

f. South Asian / Pacific Island

g. Middle Eastern or Arab American

h. Other

Please circle the number that best shows how well you do in each of the following situations. All answers are confidential.

4. To what degree is your online cyber teacher responsible for your course success or failure?

   Not Very Much - 1 2 3 4 5 - Very Much

5. How well can you get teachers to help you when you get stuck on your schoolwork?

   Not Very Well - 1 2 3 4 5 - Very Well

6. How well can you study when there are other interesting things to do?

   Not Very Well - 1 2 3 4 5 - Very Well

7. How well can you study a chapter for a test?

   Not Very Well - 1 2 3 4 5 - Very Well

8. How well do you succeed in finishing all your schoolwork every day?

   Not Very Well - 1 2 3 4 5 - Very Well

9. How well do you pay attention during every class?

   Not Very Well - 1 2 3 4 5 - Very Well

10. How well do you succeed in passing all your subjects?

Not Very Well - 1 2 3 4 5 - Very Well

11. How well do you succeed in satisfying your parents with your school work?

Not Very Well - 1 2 3 4 5 - Very Well

12. How well do you succeed in passing a test?

Not Very Well - 1 2 3 4 5 - Very Well

(Muris, 2001)

For each of the following questions, Circle the Letter next to the statement that you <u>AGREE</u> with the most. Please answer carefully. <u>Choose only 1 response for each question</u>.

Question #13

A - Many of the unhappy things in people's lives are partly due to bad luck.

B - People's misfortunes result from the mistakes they make.

Question #14

A - One of the major reasons why we have wars is because people don't take enough interest in politics.

B - There will always be wars, no matter how hard people try to prevent them.

Question #15

A - In the long run people get the respect they deserve in this world.

B - Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.

Question #16

A - The idea that teachers are unfair to students is nonsense.

B - Most students don't realize the extent to which their grades are influenced by accidental happenings.

Question #17

A - Without the right breaks, one cannot be an effective leader.

B - Capable people who fail to become leaders have not taken advantage of their opportunities.

Question #18

A - No matter how hard you try some people just don't like you.

B - People who can't get others to like them don't understand how to get along with others.

Question #19

A - I have often found that what is going to happen will happen.

B - Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.

Question #20

A - In the case of the well prepared student there is rarely if ever such a thing as an unfair test.

B - Many times exam questions tend to be so unrelated to course work that studying is really useless.

Question #21

A - Becoming a success is a matter of hard work, luck has little to do with it.

B - Getting a good job depends on mainly on being in the right place at the right time.

Question #22

A - The average citizen can have an influence in government decisions.

B - This world is run by the few people in power, and there is not much the little guys can do about it.

Question #23

A - When I make plans, I am almost certain that I can make them work.

B - It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.

Question #24

A - In my case, getting what I want has little to do with luck.

B - Many times we might just as well decide what to do by flipping a coin.

Question #25

A - What happens to me is my own doing.

B - Sometimes I feel that I don't have enough control over the direction my life is taking.

(Rotter, 1966)

You have completed all the questions. <u>Thank you</u> for participating in this research project.

**Please place this survey and all signed forms within the supplied self-addressed stamped envelope for return via the postal service.

Appendix B

Participant Interview Questions

-Obtain student name and student Id number. Read interview protocol.

A. Is this your first online experience?

B. What average grade overall would you say you had in high school leading up to your entry into cyber?

C. Have you ever failed a course? If so, how many? Why do you think you failed?

D. Why did you decide to enter cyber?

E. Do you participate in any after school activities prior to entering cyber school? Did you participate in any after school activities after entering cyber school?

F. Do you consider yourself motivated? Why or why not?

G. Do you feel you are growing academically while attending cyber school?

Would you like to add anything to this interview before we end it? Thank you for participating in this interview process.

Note* Interview questions were altered after pilot study.

Appendix C

Interview Protocol

Interview Protocol Form

Date _____

Time _____

Location of Interview _____

Interviewer _____

Interviewee _____

Others Present _____

Read to Interviewee:

I want to personally thank you for your willingness to participate in this pilot research study. First, I want to confirm that you are voluntarily participating in this interview. Please answer yes or no. Second, please note that you can stop this interview at any time. Third, please be aware that all your answers are confidential and your name will not show up on any document related to this study. Fourth, please note I am recording this conversation for transcription purposes only, and after the transcription is complete, this conversation will be deleted. Number five, if a question makes you uncomfortable, please feel free to skip it.

This interview includes approximately 10 questions which you may take your time and answer. The estimated time to answer these questions is about 20-30 minutes. Remember, all your answers are held strictly confidential.

The purpose of this study is to examine the relationship between a cyber student's locus of control, academic self-efficacy, and their success with their cyber courses.

If you are ready, we will proceed to question number 1.

Proceed to questions. See Appendix B.

Closure:

Thank the interviewee, reassure confidentiality, and request for permission to follow up if needed.

Appendix D

Student of Age Informed Assent Agreement Directions

William Vitulli – ESU/IUP Doctoral Research Project

Student of Age (18 or older)

Informed Consent Agreement

Step 1. Please fill in information below.

Date: _____

I have read and understand the information on the form and I consent to volunteer to be a subject in this Study. I understand that my responses are completely confidential and that I have the right to withdraw at any time. **I am 18 years of age or older**.

Student Participant's Name (Print):_____

Student of Age Signature: _____

Tel: ( ) _____-_____

Email Address (**Please Print**): _____

Step 2. Please fill out attached form.

Please fill out the **Authorization to Release Educational Records** attached. This will allow access only to your **Spring 2016** cyber course grades which are needed for the research.

Step 3. Please complete included survey.

Step 4. Please return all completed forms in the provided envelope.

Thank you very much for your assistance.

Sincerely,

William Vitulli, Doctoral Candidate

Appendix E

Student of Age Informed Assent Agreement

William Vitulli, Doctoral Candidate

East Stroudsburg University / Indiana University of Pennsylvania

Doctoral Research Project

The Effect Academic Self-Efficacy and Locus of Control have in the Successful Completion of High School Cyber Courses

Student of Age (Students 18 years or older)

Informed Consent Agreement

Please read this consent agreement carefully before you decide to participate in this study.

The purpose of the research study: The purpose of the study is to examine how a student's perceptions of control over outcomes in their life and their perceptions of their study habits, influence their success in a cyber course or class.

What is needed of you in this study: Students are simply asked to respond to a short survey. Some survey questions will ask you about your study habits. Other questions in the survey will be related to your perceived control, or lack of control, in your life. You may skip any question(s) that you do not wish to answer. Should you decide to participate in the optional interview (7 questions), the process will be short and over the phone. All information will remain confidential. Please note that the answers to the personal interview will be recorded for transcription purposes only, then destroyed. To make the data complete, I will need your final grades for CYBER courses taken during this spring semester.

Time required: This survey will require about 20 minutes of your time. Should you accept the personal interview request, then that will take approximately 30 minutes of time.

Risks: There are no anticipated risks in this study.

Benefits: There are no direct benefits to you for participating in this research study. However, the study may help us better understand the relationship between your perceived control over your life, your academic study habits, and a students' success in online high school cyber courses.

Confidentiality: In order to keep your research data safe, all data will be maintained on a private computer with no names identifying the individuals. As the surveys are received, the responses will be placed into a spreadsheet or proper analysis, then they will be kept in a locked file. Names will be maintained only on the survey until all data has been reviewed, and then the hard copies of the survey will be destroyed. Your name will not appear on any reports. All audio tapes of the personal interviews will be destroyed after transcription

Voluntary participation: Your participation in the study is completely voluntary.

Right to withdraw from the study: You have the right to withdraw from the study at any time without penalty. If you wish not to participate or wish to withdraw, simply do not continue to participate or respond. If you decide to not to continue with the phone interview, simply instruct the researcher that you do not wish to participate at that point and hang up.

Payment: You will receive no direct payment for participating in the study. However, all participants who complete and return a survey within 7 days of receiving it will receive a $10 gift card for your time.

If you have questions about the study, you may contact any of the following:

William Vitulli	Dr. Douglas Lare	Dr. Meghan Twiest
9144 Woodland Trail	Professor of Education	Professor of Education
East Stroudsburg, PA 18302	East Stroudsburg University	Indiana University of Pennsylvania
Or call: 570-269-2354	Phone: 570-422-3431	Phone: 724-357-2404
Or email: wvitulli@yahoo.com	DLare@po-box-esu.edu	mmtwiest@iup.edu

THIS PROJECT HAS BEEN APPROVED BY THE INDIANA UNIVERSITY OF PENNSYLVANIA INSTITUTIONAL REVIEW BOARD FOR THE PROTECTION OF HUMAN SUBJECTS (PHONE 724.357.7730).

Retain this document for your records.

Please go to the next page to sign the agreement.

Appendix F

Minor Informed Consent Agreement Directions

William Vitulli – ESU/IUP Doctoral Research Project

Minor Informed Consent Agreement (Ages 14-17)

To be completed by Parents or Guardians of Minor Participants

Step 1. (Parent) Please fill information in below.

Date: _____

I have read and understand the information on the form and I assent my child to volunteer to be a subject in this study. I understand that his/her responses are completely confidential and that I have the right to withdraw him/her at any time.

I understand that the study also includes a voluntary interview. I give permission for my child to participate in the following parts of this study:

_____ Survey only _____Both the Survey and Phone Interview

Participant's (Minor Student) Name _____

Parent/Guardian Name (Print): _____

Parent/Guardian Signature: _____

Student Signature: _____

Tel: ( ) _____-_____

Email Address (**Please Print**): _____

Step 2. (Parent) Please fill out attached form.

Please fill out the Authorization to Release Educational Records enclosed. This will allow access **only** to your child's **Spring 2016** cyber course grades which are needed for the research.

Step 3. (Student) Please complete the included 25 questions survey.

Step 4. (Parent) Please return all completed forms in the provided envelope.

Thank you very much for your assistance. You will receive your $10 gift card within 7-10 days after I have received your completed forms.

Sincerely,

William Vitulli, Doctoral Candidate

Appendix G

Minor Informed Consent Agreement

William Vitulli, Doctoral Candidate

East Stroudsburg University / Indiana University of Pennsylvania

Doctoral Research Project

The Effect Academic Self-Efficacy and Locus of Control have in the Successful Completion of High School Cyber Courses

Minor Informed Assent Agreement for Participants 14-17 years of age.

Parents, please read this consent agreement before you decide to allow your child to participate in this study.

The purpose of the research study: The purpose of the study is to examine how a student's perceptions of control over outcomes in their life, and their study habits, influence their success in a cyber course or class.

What is needed of you in this study: Students are simply asked to respond to a short survey. Some survey questions will ask you about your child's study habits. Other questions in the survey will be related to your child's perceived control, or lack of control, over what happens in their life. Your child may skip any question(s) that they do not wish to answer. Should you decide to allow participation in the optional interview (7 questions), the process will be short and over the phone. All information will remain confidential. Please note that the answers to the personal interview will be recorded for transcription purposes only, then destroyed. To make the data complete, we will need your child's final grades for CYBER courses taken during this spring semester.

Time required: This survey will require about 20 minutes of your child's time. Should you allow the personal interview request, then that will take approximately 30 minutes of time.

Risks: There are no anticipated risks in this study.

Benefits: There are no direct benefits to your child for participating in this research study. However, the study may help us better understand the relationship between your perceived control over your life, your academic study habits, and a students' success in online high school cyber courses.

Confidentiality: In order to keep your research data safe, all data will be maintained on a private computer with no names identifying the individuals. As the surveys are received, the responses will be placed into a spreadsheet or proper analysis, then they will be kept in a locked file. Names will be maintained only on the survey until all data has been reviewed, and then the hard copies of the survey will be destroyed. Your name will not appear on any reports. All audio tapes of the personal interviews will be destroyed after transcription.

Voluntary participation: Your child's participation in the study is completely voluntary.

Right to withdraw from the study: You, or your child, have the right to withdraw from the study at any time without penalty. If you wish not to participate or wish to withdraw, simply do not continue to participate or respond. If you decide to not to continue with the phone interview, simply instruct the researcher that you do not wish to participate at that point and hang up.

Payment: You will receive no direct payment for participating in the study. However, all participants who complete and return a survey within 7 days will receive a $10 Wawa gift card for your time.

If you have questions about the study, you may contact any of the following:

William Vitulli	Dr. Douglas Lare	Dr. Meghan Twiest
9144 Woodland Trail	Professor of Education	Professor of Education
East Stroudsburg, PA 18302	East Stroudsburg University	Indiana University of Pennsylvania
Or call: 570-269-2354	Phone: 570-422-3431	Phone: 724-357-2404
Or email: wvitulli@yahoo.com	DLare@po-box-esu.edu	mmtwiest@iup.edu

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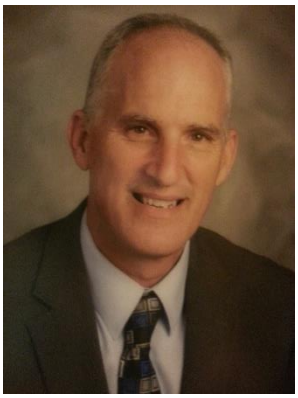
(PHONE 724.357.7730)

Retain this part of this document for your records.

Please go to the next page to sign the agreement.

Appendix H

Initial Introduction Letter



EAST STROUDBURG AREA SCHOOL DISTRICT – PRINCIPAL – WILLIAM VITULLI

Doctoral Candidate of

East Stroudsburg University / Indiana University of Pennsylvania

Please take a moment to read this.

Hello Parents and Guardians of Area Cyber Students,

My name is William Vitulli and I am currently a principal in the East Stroudsburg Area School District. I am writing today to request your assistance in my quest for my doctoral degree.

In the next few days you will receive a large envelope containing a short survey related to cyber learning. I am hoping you will review it and allow your cyber student to be a participant. It is a survey of 25 questions seeking to determine the influence of two factors, locus of control and academic self-efficacy, as they relate to student success in cyber classes.

The survey is short and should not take more than 25 minutes to complete. To show my gratitude for your student's participation, I will send you a $10 gift card of your choice as a "thank you" for the completed survey.

I hope you will assist me in this research. I feel this research could play a role in the future of cyber learning. If you have questions or concerns, please feel free to call me at 570-269-2354, or email me at wvitulli@yahoo.com.

Thank you in advance.

Sincerely,

William Vitulli

Principal of Smithfield Elementary and East Stroudsburg Area Cyber Academy

Appendix I

Participant Introduction Letter

9144 Woodland Trail

East Stroudsburg, PA 18302

May, 2016

Re: CYBER SCHOOL STUDY – I NEED YOUR HELP!

Dear Cyber Parent & Student,

Hello, my name is William Vitulli and I have recently sent you a letter of introduction. I am a doctoral candidate, living in East Stroudsburg, conducting a research study that is exploring the relationship between a student's perception of their study habits, their perceptions of control, or lack of control, in their life, and their academic achievement in high school online cyber courses. The information I am seeking is very simple and non-personal, and the process will only take about 20 minutes of your time. If you should choose to participate and return this survey to me within 10 days, you will receive a $10 gift card of your choice.

More specifically, the purpose of my study is simply to determine the effect of locus of control (the extent to which individuals believe they can control events affecting them), and academic self-efficacy (refers to an individual's belief that they can successfully achieve at a designated level on an academic task or attain a specific academic goal), have on your success in your cyber courses.

This opportunity is completely voluntary. Your participation, or lack of participation, will not affect your grades in any way. If you choose to participate, you may choose to withdraw at any time. If you do choose to participate, you may be helping future cyber students be more successful in their classes.

If you are interested in participating in this study, please proceed to the next page and follow the simple directions.

I hope you can find the time to help me in my most important academic quest. Should you have questions regarding this study, please feel free to contact me directly at 570-269-2354, or email me at wvitulli@yahoo.com.

Looking forward to hearing from you.

Sincerely,

William Vitulli, Doctoral Candidate

East Stroudsburg University / Indiana University of Pennsylvania

Appendix J

Participant Reminder Letter

Re: CYBER SCHOOL STUDY/ Second Request

Dear Cyber Parent & Student,

Just about 1 week ago, you were sent a letter requesting your participation in a study regarding high school students and academic achievement in online classes. This is a second attempt to reach you as a potential participant.

Hello, my name is William Vitulli and I need your help! I am conducting a research study that is exploring the relationship between academic self-efficacy, locus of control, and academic achievement in high school online cyber courses. This is a voluntary opportunity. The information I am seeking is very simple and non-personal, and the process will only take about 20 minutes of your time.

If you are interested in participating in this study, please complete the documents I have previously mailed to you. I hope you choose to participate in this research study. Should you have questions regarding this study, feel free to contact me directly at 570-269-2354, or email me at wvitulli@yahoo.com.

Please help me. Your participation is important.

Sincerely,

William Vitulli

East Stroudsburg University / Indiana University of Pennsylvania

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(PHONE 724.357.7730).

Appendix K

Packet Instructions

Parents Please Read

If your student is 18 years or older, please go directly to the BLUE sheets.

If your student is **under** that age of 18, and is at least 14 years old, please go directly the GREEN sheets.

If you have any questions at this point, please feel free to contact me at the phone number or email address provided on these forms.

Appendix L

Gift Card Selection Sheet

Choose Your Gift Card!

If you return this survey completed within 7 days or receiving it, you will receive a $10 gift card of your choice. Please make the selection below. You will receive your gift card 7-10 days after submitting your completed survey. It is my way of saying Thank You for helping me in my doctoral effort.

Bill Vitulli

_____ Wawa

_____ Dunkin Donuts

_____ Wal-Mart

Please be sure to include this form with your completed survey.

Thanks again.

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Appendix M

Authorization for Release of Educational Records

AUTHORIZATION FOR RELEASE OF EDUCATIONAL RECORDS

For Purposes of Research

Name of Student: _____

In accordance with Family Educational Rights and Privacy Act of 1974 ("FERPA", also known as the "Buckley Amendment"), I, the undersigned, hereby authorize The Office of Student Records to release for all purposes the following listed educational records and information.

This release includes grades for the **SPRING 2016 semester cyber courses only**.

I authorize release of these records and information to:

Name	Relationship to Student
1. ____William Vitulli_____	___Researcher - ESU/IUP Doctoral Candidate__
9144 Woodland Trail East Stroudsburg, PA 18302	

I understand that I may submit a subsequent notification in writing directing The Office of Student

Records to no longer release information to any or all of the individuals listed above.

I understand further that I have the right not to consent to the release of my education records.

I certify that I have read and fully understand the foregoing statements.

_____ _____

Student Signature (If 18 years of age or more) Date

_____ _____

Parent or Guardian Signature of Minor Participant Date

Appendix N

Interview Transcripts

Academic Self-Efficacy and Locus of Control – Interview 1

I: Okay, thank you for meeting with me today ____. Before I get started I must read you something.

P: Okay, go ahead.

I: I want to personally thank you for your willingness to participate in this research study. First, I want to confirm that you are voluntarily participating in this interview. Please answer yes or no.

P: Yes.

I: Second, please note that you can stop this interview at any time. Third, please be aware that all your answers are confidential and your name will not show up on any document related to this study. Fourth, please note I am recording this conversation for transcription purposes only, and after the transcription is complete, this conversation will be deleted. Number five, if a question makes you uncomfortable, please feel free to skip it. This interview includes approximately 10 questions which you may take your time and answer. The estimated time to answer these questions is about 20-30 minutes. Remember, all your answers are held strictly confidential. The purpose of this study is to examine the relationship between a cyber student's locus of control, academic self-efficacy, and their success with their cyber courses.

If you are ready, we will proceed to question number 1.

P: I'm ready.

I: Is this your first online experience? With the cyber academy, is this your first online experience?

P: No.

I: Can you expand on what other experiences you have had online?

P: I attended ah, [pause] the _____ Academy between my 6th year and my 11th grade year.

I: What average grade overall would you say you had in high school leading up to your entry into cyber? Including grades, even if they are not in high schools.

P: Some A's, mostly B's.

I: Have you ever failed a course? If so, how many? Why do you think you failed?

P: I have never failed a course.

I: Can you tell me why you decided to enter cyber?

P: Ahh,… it was the best option for us at the time. I had been really sick and I couldn't attend um, [pause] public schooling so our best option was to go with cyber schooling.

I: Do you participate in any after school activities prior to entering cyber school? And did you participate in any after entering cyber school?

P: Um, yes I was in after school activities before cyber school, but most of cyber school was elementary, and after entering cyber school,… no.

I: Do you think your family life has had an impact on your high school education?

P: Yeah.

I: How?

P: um, [pause] sometimes things are very tense in our house, often the result of my own, my own [sic], work ethic towards school and stuff like that,… sometimes when it gets very tense cause my mom is…she want's what is best, and I am kind of slacking (inaudible) little pressure on my doesn't help as much as she thinks it does.

I: Do you consider yourself motivated? Why or why not?

P: I consider myself motivated if I can get into, if I can get into [sic], the class, I will go ahead in my work if I really enjoy it, but if I can't get into the class it's very difficult to get motivated.

I: Do you feel you are growing academically while attending cyber school?

P: [no response]

P: Like?

I: Do you think you are getting valuable knowledge,…

P: Yes.

I: from cyber school?

P: Yeah,…we're still, I still get the information I would be learning in public school, [pause] um, I still read from book and do exercises and whatnot, it's just I'm not in a school setting surrounded by other students.

I: Do you have anything you want to add to this _____?

P: Um,… I really enjoy the cyber school system, um, it's very, I can work at the pace I need when I'm having trouble with work if I,..if something is too easy I can work through that quickly and then move on faster than a normal class would. Most of my experience with teachers has been good throughout since, in cyber school since 6th grade, the teachers are very personable with, ah, with students, and I really enjoy that.

I: Okay.

End of tape.

Academic Self-Efficacy and Locus of Control – Interview 2

I: Okay, I have read the interview, ah, [pause] statement, protocol statement to _____. Okay ____ you do not have to answer any of these questions you do not want to. They are all pretty straight forward.

I: Is this your first online learning experience, this year?

P: No.

I: No,… and how many years have you been in cyber?

P: [pause] Six years?

I: Six years cyber. Okay. So what grade did you enter?

P: Fifth.

I: Fifth grade….what was your,..what would you say your grades were before you entered into cyber?

P: Not very well (sic).

I: Not very good would you say? [nodded]

P: [no response]

I: Have you ever failed a course?

P: No.

I: Ah,..what made you decide to go into cyber?...and was it all your decision or was it mom's decision, combined decision?

P: It was combined. I was bullied, but also thought the teachers weren't understanding to my situations.

I: Can you explain that a little bit further?

P: I didn't get my IEP until about 6th grade, so when I was in the brick-and-mortar they didn't understand why I was learning so slowly, and didn't put the time in to getting me tested.

I: Okay.

I: Did you participate in any after school activities when you were, ah, when you were school before you got into cyber? After school activities,…were you a part of that?

P: No.

I: No,…

P: Yes!

I: You were?

P: Yes.

I: What kind of things did you do?

P: Ah,..um,…chorus, if that counts.

I: Oh yeah, that counts.

I: Now, do you consider yourself a self-motivated person?

P: Yes.

I: Okay, why is that?

P: Because I am determined and I know I can do things.

I: Okay.

I: Do you feel you are growing academically while in cyber school…

P: Yes.

I: …while attending cyber school?

P: And why is that?

I: Because they give me the time that I need and make sure that I am learning it properly.

P: Is there anything you want to add to this.

I: No.

P:Okay, thank you very much.

Academic Self-Efficacy and Locus of Control – Interview 3

Introductions, date and time are recorded.

I: _____ I have to read to you something before we get started. Okay?

P: Sure.

I: I want to personally thank ____ for his willingness to participate in this research study. First, I want to confirm that you are voluntarily participating in this interview. Please answer yes or no.

P: [silence]

I: ____ I need you to answer yes that you are voluntarily participating?

P: Oh,…yes.

I: Okay, Second, please note that you can stop this interview at any time. Third ____, please be aware that all your answers are confidential and your name will not show up on any document related to this study. Fourth, please note I am recording this conversation for transcription purposes only, and after the transcription is complete, this conversation will be deleted. Number five, ah,… if a question makes you uncomfortable, please feel free to skip it. This interview includes approximately 10 questions which you may take your time and answer. The estimated time to answer these questions is about 20-30 minutes. Remember, all your answers are held strictly confidential. The purpose of this study _____ was to examine the relationship between what we call your locus of control and academic self-efficacy, and that basically is your beliefs in your abilities to do, ah, your cyber courses….

P: Okay.

I: …and your success. The questions are pretty simple.

I: Is this year your first year in, ah, first experience in online learning?

P: Yes.

I: Okay, alright, and what grade are you in now?.. or did you just finish this year?

P: Oh, I just finished 11th grade.

I: Eleventh grade, okay so 11th grade was you first year. Ah,..what would you say was your average overall grades leading up to your enrollment into cyber school?

P: Ah,…I would say they were pretty good,..a lot of A's and B's, a few C's.

I: Okay, okay,…have you ever failed any courses in high school or even ah, elementary or intermediate school?

P: [pause] I don't believe so.

I: None?

P: None.

I: Okay. [pause] Can I ask you why did you decide to go into cyber? Was it you that made the decision?

P: I wanted to do cyber because of, ah, I am joining the military so I wanted to focus on my fitness, and I also wanted to get a job.

I: Okay, okay, that's a good excuse and good reason. When you were in school,..when I say school, your brick-and-mortar school prior to going to cyber, were you, did you participate in activities after school? Sports? Ah, band? Those types of things.

P: Um,…not this year, but in 9th grade when I was in (state), I did a junior ROTC program.

I: Oh, okay,…was that it?

P: Yeah.

I: Did you participate in any activities after you entered cyber school, for example are there clubs you participated in? It sounds like you are working out,…is there anything you would say, groups, you regularly work with now or during this past year you have been in cyber school?

P: Ah,..no, not too much.

I: Okay. [pause] This to me is a silly question, but I am going to ask,…do you consider yourself a motivated person?

P: Yeah.

I: Yeah, I would say so. I would agree with you. Why do you say, why do you feel that way?

P: um,…you know,…a, I'm very good at my job, you know I'm very motivated at my job, I do my job, and ah, um, and started doing well with my fitness regiment I've been doing.

I: And ah,…what,…this is off topic, but when do you plan to enter the service.

P: Ah,..probably after high school or the year after high school.

I: Okay…you are very motivated and driven, I can tell.

P: Thank you.

I: Now,..your ah, I think we have access to your grades. I think I have them here,..which were really good. Do you feel your growing academically while attending cyber school? Do you feel your getting the same experience, or better ah, or worse, then you were getting in the classroom?

P: Um…I would say about the same.

I: About the same?

P: (inaudible)

I: Can you explain why you think it's about the same?

P: Ah…I can work socially in school with others, and I can do well on my own at the same time.

I: Okay,…how about the ah, [pause] the educational experience part. Like, for example, do you feel, and this might not be a good example, but, do you feel you're learning math as well as you did in cyber as you were perhaps in front of a teacher, or with a teacher?

P: I think with math I would learn better with a teacher.

I: Okay, how about other classes? Is that necessarily true?

P: Um, [pause] no.

I: No…because other classes you don't necessarily feel you need a teacher.

P: No.

I: Okay. I would love to ask you many more questions, but I have gone over my limit. I want to wish you good luck with your goal for joining the service. I am obviously proud of you for doing that. Keep it up.

P: Thank you.

I: Thank you very much, and tell your parents thank you as well.

P: Thanks.

Academic Self-Efficacy and Locus of Control – Interview 4

I: Hi ____, how are you?

P: I'm good.

I: I'm sorry you're not feeling well, Mom said you were a little sick. I thank you for taking my call, and I also thank you for participating in my study with the survey on my doctoral work.

P: No problem.

I: I just have about 7 questions, and it will probably only take about 5 minutes, but your answers are very important to me.

P: Okay, no problem.

I: So, I have to read a couple of things I need to let you know first.

P: Okay.

I: First, I want to confirm that you are voluntarily participating in this interview. Please answer yes or no.

P: Yes, I am.

I: Next, ah,..I want you to know that recording your answers so I can transcribe them later into my report. Your answers, all your answers, are confidential, and if you feel you don't want to answer any particular question or questions, you don't have to, it doesn't make any difference. Okay?...it won't have any impact on grades or anything obviously. ____, please remember you can stop this interview at any time you want. Okay?

P: Okay.

I: Alright,..first question,…is this your first year in cyber school?

P: No,…this is my [pause] third year.

I: Your third year in cyber school…okay, and what grade are you in right now?

P: Right now I am in 11^{th} grade.

I: Okay, alright. Um,…if this applies, what would you say your average grades overall were prior to entering cyber school?

P: I am not sure. My mom would have them I guess. We didn't really have a grading system.

I: You were home schooled correct?

P: Yeah.

I: Okay, obviously you passed everything. It wasn't like you failed courses, correct? Because you kept moving up.

P: Yes.

I: Okay. So I am going to skip question "C" because I think we already answered that. So, why did you decide to enter cyber school? I would assume this is a parent/student decision sometimes, but why do you think you decided to enter cyber school?

P: Well, we entered cyber mostly for the experience, but there was a lot of circumstances that put us into cyber school, such as my grandma was sick and my mom didn't have time to teach us. So she put us in cyber school so we were being educated.

I: Gotcha, a lot of stuff going on. Thanks, thank you. So this question probably doesn't apply either, but maybe. Did you participate in any, I am going to say, after school activities prior to entering cyber school? Were you involved in any clubs or anything like that, prior to cyber school?

P: Yes, I was in track. The homeschool groups taught by my mom's friend and 4H, which I dropped out a couple years after starting cyber school.

I: Okay, you were in track.

P: Yep.

I: Okay, fantastic. Ah,..you say you dropped out of 4H after you entered cyber school. Are you doing any clubs right now during cyber school? Any after school activities?

P: I am taking tennis lessons, but I am slowly dropping out of that because I am not comfortable with the teacher.

I: Okay, and that is not related to your home school district or anything? That's just private tennis lessons.

P: It's like a everyone (sic) tennis lesson, it is like sort of private, but is a community lesson.

I: Community lesson,…alright, okay. [pause] I think I know the answer to this question, but do you consider yourself a motivated student?

P: Sort of.

I: Sort of,…okay. Why did you answer it like that?

P: Cause though I really don't like school, I know I have to do it. So depending on the subject, like history, that is easy. English is easy. Math and Biology, that is usually not. That is why it is hard for me to finish that correctly.

I: Would you say that is usually the case, that Math and Biology, seem difficult in cyber school?

P: Math is definitely difficult. So is Biology. Because I feel these courses are more teacherly (sic) the teacher you have makes it easier.

I: Yeah.

P: One Math, (sic) one year, I had an awesome math teacher and I ended up getting an "A". The course was a little tricky.

I: I see. Do you feel you are growing, growing the same, academically, in cyber as you prior to cyber school? Do you feel like you are getting a lot out of your education now out of cyber?

P: Not really. Sometimes it's frustrating with how they explain information. So I end up getting questions wrong. (inaudible) process differently. It is a different experience.

I: Okay, one last question. How could cyber be better to help you learn better and feel, um, better about your academic growth? What do you think cyber could do?

P: Cyber (inaudible) normal school problems, like violence. There isn't any real violence at your house. (inaudible) isn't cool, and it's really quiet, you can actually concentrate without fear of other people watching you. (inaudible) social fears, people watching me and being really loud. And also you are in safe environment, you have help around you any time, and you are free to speak up in your own house.

I: Right. Right. But yet you still say you are so-so with the academic growth. So what part of the academics need to improve in cyber?

P: Umm, Pearson, our main school book people, (inaudible) everyone else's math and biology is okay, Pearson math and biology is just dumb. They are really hard, those courses.

I: Okay. Alright that is everything, I really appreciate your help.

P: No problem.

I: I hope you feel better, and thank your mother too. Bye.

P: Bye.

Academic Self-Efficacy and Locus of Control – Interview 5

Read the interview protocol to participant prior to recording. Recording picks up at first question.

I: So here we go, first question. (laughter) _____, is this the first online experience you have had? Is this year your first online experience?

P: Yes.

I: Okay, you never took cyber before this year?

P: No.

I: Okay, did you take cyber all year?

P: Just half, in January.

I: Okay, very good. What average grade did you have in high school leading up to your entry in cyber? What would you say your average grades were before you went into cyber?

P: Like an 82 overall.

I: Wow. Very good. Very good. Have you every failed a course? ____, have you ever? And if so, how many?

P: I have failed Fine Arts 1, one time. That's it.

I: Okay, that's it. Can I ask why do you think you failed that class?

P: Well, because of the teacher like I left. I got in trouble with the teacher and I left.

I: Okay, no problem. No problem. Ah,…why did you decide to enter cyber? Now, normally this is not just a student decision, sometimes the parents are involved, or whatever, but can you give me an idea why you decided to enter cyber?

P: It was just easier, being that I only had one class.

I: So you are a senior and you only have one class to go?

P: Yes.

I: Oh wow. Okay, so you are an early graduate?

P: Yeah, but they forgot my English when I went to guidance. So I wasn't going to go just for one class so I took it online.

I: I see, your school screwed up and didn't give you your English.

P: Yeah, that's why.

I: Okay, very good. When you were in school, did you participate, this is the fifth question, did you participate in any after school activities prior to entering cyber school? Were you a sports guy, in clubs or anything like that?

P: Yeah, I played soccer.

I: Okay,…do you consider yourself motivated?

P: Well, ah….in certain things, yes.

I: Okay,…and why would you say in certain things?

P: Ah,…things that interest me, yeah I'm motivated, but if they are more on the boring side, then not so much.

I: Not so much. Okay. Now during the time you were in cyber, and I know it was only one class, do you feel you grew academically? ____, do you think it was good for you, or what is your opinion of cyber?

P: Well yeah, I think it's good. There was a lot of help from everyone, so I never really got stuck on anything.

I: Would you ever take another cyber course?

P: Yeah, definitely.

I: Okay. Well listen, buddy that is all I needed. Do you have anything you want to add?

P: Not really.

I: Well, I can't thank you enough for helping me out with my study. When I am done, I will send my results to all you that have provided an email. Did you get my gift card?

P: Yeah, yeah I did.

I: Excellent, thanks again bud.

P: Thank you.

I: Bye.

P: Bye.

Academic Self-Efficacy and Locus of Control – Interview 6

I: I appreciate that you filled out that study for me. I just want to ask you a few questions about cyber, and I promise you I won't take much of your time. I am working on my dissertation and I just can't thank you enough. First, I need to know that you are voluntarily taking this interview? Do you understand that?

P: Yeah,…okay.

I: I also need you to know that I am recording this entire conversation. Okay? And that you can stop it at any time, and any questions you don't like, you don't have to answer. It doesn't matter, doesn't have anything to do with your grades, ah, and I am just going to use this to transcribe into my dissertation. Oh, and this is completely confidential, no one will know I talked to you. Alright?

P: Okay.

I: Alright, thank you. ____, was this past year, you are a 9th grader correct? Just finished 9th?

P: Yes.

I: Was this your first year in cyber?

P: Yes.

I: Okay. Before you went into cyber, what would you say your overall grades were in school? Eighth grade. What were your overall grades? In general.

P: Ah,…B's and C's.

I: B's and C's,…okay. Very good. Have you ever failed a course ____? Have you ever failed any courses?

P: Yes.

I: Alright,…can you give me an idea of how many?

P: [long pause] Umm, just this year?

I: Well, let's go back into our intermediate years…6 through 8.

P: Umm, [pause] one. Maybe.

I: Alright. Great. That's not bad. And why do you think you failed that class if you don't mind me asking? If you don't feel comfortable answering that,….you don't have to.

P: Well, it was an art class and I'm just not good at art.

I: Okay. Now when a person enters cyber, usually it is the parent and the student making the decision. Ah,…why did you decide to enter cyber school?

P: My mom made the decision.

I: Okay….alright. Before you went to cyber school did you participate in any after school activities or clubs like that?

P: Yeah.

I: Yeah,…you did? Okay. Do you consider yourself a motivated person ____?

P: Yes.

I: Okay,…and why do you say that? What does that mean to be motivated?

P: [pause] Umm,…I don't know.

I: Okay. Do you feel,…last year was your first year in cyber,..do you feel that you grew academically while attending cyber school? Do you think it was a good way to learn is the question really?

P: NNNNNNo.

I: No? Can you tell me why? Again, this doesn't have anything to do with your grades or anything else, just my study.

P: I'm just not a person that can focus and learn from staring at a computer screen.

I: Okay, so we have a hard time focusing on that and trying to read everything you have to read and trying to watch all the videos, and just sit there right?

P: Yes.

I: Okay. So let me back to the last question. I want to go back to your activities prior to cyber school. What kind of activities did you participate in prior to cyber school?

P: Sports.

I: Sports. Okay. No do you still participate in sports activities or not.

P: Yeah.

I: Oh you do…good. Alright, do you have questions of me before we end this?

P: No.

I: Alright then, we are all done. I thank you so much for your help. I hope you got the gift card I sent you for participating in the study.

P: Okay.

I: Thank you very much.

P: Your welcome.

I: Bye, bye.

Academic Self-Efficacy and Locus of Control – Interview 7

I: Alright, here we go. I want to thank you for your willingness to participate in my study. I just want to make sure you are voluntarily participating in this interview? Could you please answer, yes or no ____?

P: Yes.
I: Okay…._____, please be aware that you can stop this interview at any time, and all your answers are confidential, just like on the survey. And if you are not comfortable answering questions, then please don't answer it if anything were to make you uncomfortable. But, they are very basic questions…so I want to start with the first one.

P: Okay.

I: Let me turn you up just a little bit so I can make sure the recorder is catching you. Ah,.._____, this past school year,…was that your first school year experience with cyber?

P: No,…I did it in 8th grade, but it was a different program.

I: Okay, and so you skipped a year or two?

P: No,….like I did it for a marking period in the 8th grade and then went back to school.

I: Okay,…so just a little bit of experience. So….what would you say your overall grades were leading up to your entry into cyber at, I guess, the 11th grade? Would that be correct?

P: Yeah,..ah,..they weren't that good, but once I started cyber school they got way better.

I: Okay, so can you give me like a general grade? Would you say they were C's, B's?

P: Like D's.

I: D's,…oh really. Okay,…and then they got better in cyber school?

P: Yep.

I: Alright, great. Prior, let's just take our high school years, 9th grade, 10th grade, did you fail any classes during that period of time?

P: Ahh,…umm,..maybe like one.

I: One. Okay. Do you know why you might have failed that class?

P: Probably just missed some school.

I: Missed some school. Okay. So why did you enter cyber? Before you answer that question, I realize that sometimes it's the parents and the student making the decision, or just the parents make the decision. But if you could just tell me why did you enter cyber?

P: Umm, it was like me and my parents. The other kids at school and just like to get away from the other kids and the teacher and stuff (sic).

I: Okay,..so would you say that it was social issues? Would that make sense?

P: Yeah.

I: Okay. Very good, thank you. Did you participate in any after school activities prior to entering cyber school? Were you into sports or clubs, or anything like that?

P: Umm, I did field hockey in like 7th to 9th grade.

I: Okay,…did you still, you were in cyber last year, did you still participate in any sport or not?

P: No.

I: No. Okay. And again, that was to get away from the whole social aspect of school or,….?

P: Yeah, pretty much.

I: Now, do you consider yourself a motivated individual?

P: Yeah.

I: Okay, so how were your grades this year?

P: They were pretty good, almost honor role.

I: Great. Are you going to come back to cyber again next year?

P: Yeah.

I: Great, we got a new program and I think you are going to like it.

P: Is it just as easy? You know like with the computer skills?

I: I think it is easier. It is a great program and I think you are going to like it.

P: Great.

I: One last question. And I think you may have answered it already, but do you think you are growing academically while attending cyber school?

P: Yeah,…I think so.

I: Yeah,..you getting something out of it? Now if I were to ask you, if I were to put you in front of a teacher and a computer, do you think you learn equally the same? Or better from the computer?

P: Ah,…umm…maybe with the computer. Just because my grades were better.

I: Let me ask you this one side question and then we are all done.

P: Okay.

I: Did you have any math this year?

P: Yeah…Geometry I think?

I: How was that in cyber? Was that pretty tough?

P: Yeah, it can be challenging. I think that is the class that I have the most trouble with,…math.
I: That is what I am finding out from students is their most troublesome course is math in cyber school.

P: Yeah.

I: Well, that is all the questions and I really appreciate your time. Do you have any questions of me?

P: Was that new software, whatever, are you going to be showing us how to do it? Like we had that orientation last time.

I: Yep. We will have an orientation that first evening here.

P: Okay.

Went on to discuss our new learning management system.

I: Okay,…thank you again for your help.

P: Okay, no problem. Bye.

I: Bye, bye.

Academic Self-Efficacy and Locus of Control – Interview 8

I: Hi ____, its Mr. Vitulli,….How are you?

P: Hello.

I: I wanted to thank you for taking time to talk to me. I wanted to ask you some questions regarding cyber. Do you have a little time?

P: Yeah.

I: So I want to start with,…I have to read this stuff as it goes here. So I want to personally thank you ____ for your willingness to participate in this pilot research study. First, I want to confirm that you are voluntarily participating in this interview. If that is so, could you say yes, please?

P: Yes.

I: Alright,…and please ____ that you can stop this interview at any time, and that I am recording it so I can transcribe into my dissertation. Your answers are all confidential. This has nothing to do with the _____ Academy. It won't affect your grades in any way, it is just me asking you some questions to help me with my dissertation. Alright?

P: Okay.

I: And if I were to ask you a question and you do not want to answer it, please feel free to skip it. Okay?

P: Yeah.

I: This year, let me see, you are a 9^{th} grader. You will be a 10^{th} grader correct?

P: Yeah.

I: Was 9^{th} grade your first year in cyber?

P: Yeah.

I: Okay. Let me just turn this phone up. So 9^{th} was your first year in cyber. What would you say your overall grades were, your average grades were, leading up into cyber? In other words, during those intermediate school years, what would you say was your average grade was?

P: mmmm,…I don't know,….they were okay.

I: C's, B's, D's?

P: They were like A's, B's, and some C's.

I: That is all good stuff. In those intermediate years, let's just talk about 6^{th}, 7^{th}, and 8^{th}, okay? Did you fail any courses?

P: I don't think I failed any.

I: Okay, great. Why did you decide to enter cyber?

P: Because I was getting bullied?

I: Okay, okay,..I hear that a lot ____, I hear that a lot. Was it your decision alone? Was it the parent's decision as well?

P: Umm…it was both.

I: Both. Great. When you were at school, did you go to Lehman or JTL?

P: JTL

I: Did you participate in any after school activities there…

P: No.

I: before you went into cyber? No,..okay. Do you participate in any type of after school activities now that you are in cyber?

P: Umm…no.

I: If you recall, my study had a little bit to do with academic self-efficacy and locus of control. Those are kind of motivation oriented things. Do you consider yourself a motivated person?

P: A little.

I: A little? Why would you answer that way?

P: I don't know. [laughter]

I: Is it fair to say, that in some things you're motivated and other things you are not motivated in?

P: Yeah.

I: And is it usually related to your level of interest? Is that, would that be correct?

P: A little.

I: A little,…okay. So this being your first year in cyber, ____ do you feel you are growing academically while you are attending cyber school? In other words, do you think you're growing as good academically as you would if you were sitting in the brick-and-mortar school?

P: Not really. I don't really know.

I: You don't know. Ummm,…if I could state it a different way,…do you think you are learning as well as you could, or would, if you were in the brick-and-mortar school?

P: No.

I: No. Okay. Do you want to explain that a little bit?

P: I guess because it is like kinda (sic) like hard to concentrate. You have the teachers to help you and it's kinda (sic) like easier.

I: What's kind of easier?

P: Like, cause (sic) you could like just walk up to your teacher to talk to them.

I: Oh, yeah. Okay. And I have heard that time and time again. You are not alone in that. Do you intend to go to cyber again next year again ____? Next year.

P: Probably not.

I: I know you are in summer school,…how are the new courses going?

P: It's going good.

I: Do you think they are better courses than we had last year?

P: Yeah.

I: Good, I am glad to hear that much. Thank you for your help. Thank your mother. Keep up the great work. So you think you going back to the brick-and-mortar next year?

P: Yeah.

I: Good. Okay, thank you.

P: You're welcome. Bye.

I: Bye, bye.

Academic Self-Efficacy and Locus of Control – Interview 9

I: As you know, I am Mr. V. I am the cyber principal, and I think you graduated correct?

P: (inaudible)

I: Yeah?…how did that go?

P: (inaudible)

I: Alright, I have seven or so questions to ask about cyber. It will not take much time, but I have to make it kind of official, because it is going into my dissertation.

P: (acknowledged)

I: So I want to thank you for helping me with my study. I know you filled out the form earlier. I want to confirm you are participating voluntarily,…so if you would say yes if that is true.

P: Yeah. [sigh]

I: I know your mom is putting you up to it. [laugh]

P: [laugh] No.

I: ____, you can stop this interview at any time. Please be aware all your answers are confidential, and that I am recording this for transcription purposes. Let me see.,.

P: Okay.

I: If anything makes you uncomfortable, just don't answer the stuff, alright?

P: (acknowledged)

I: Now,…you were in cyber school for the entire senior year. Is that correct?

P: No, my junior year. It was for I think the last half. The second semester.

I: So you will be a senior this year? Will you be in cyber school this coming year?

P: No.

I: Okay,…you are going back to brick-and-mortar school?

P: Yep.

I: So that last experience you had in cyber…what that your first experience in cyber?

P:Yes.

I: Okay,…and your grades before going into cyber? Can you give me an idea of your grades leading up to cyber? What was the average?

P: Ummm….like C's.

I: C's,….okay. Have you ever,…and I am talking about the years leading up to your cyber experience,…have you ever failed any courses? And if so, how many?

P: Yep.

I: How many do you think you failed in that time period?

P: Maybe like,…one or two in a semester.

I: Okay, can I ask you why you think you failed those courses?

P: Because I just didn't have enough time to study, and I'm kind of forgetful about homework. I would do it, but forget to hand it in, and so I had that problem.

I: So why did you decide to enter into cyber, and was it a parent/student decision, or…?

P: Ahh,…it was just my decision. I thought I could do it. I just wanted to try it out, because a lot of my friends were doing it. So I thought I would try it.

I: Okay.

P: It can't be that bad.

I: And we'll come back to that in a minute. Did you participate in any after school activities prior to entering cyber school?

P: School related,…no, but I had work.

I: Work, okay, that is good to know. How about after you started cyber school? While you were in cyber school, were you still working?

P: Umm, yeah, but I quit two months after I started.

I: ____ would you consider yourself a motivated person? Why or why not?

P: Umm, [pause], I don't know. I mean I can be a motivated person, it just depends on what like school wise. I don't really have much motivation, I don't know why.

I: If I were to restate that question and said, ah, do some courses motivate you more than other courses. Would that be a true statement?

P: Yes.

I: Do you feel you are growing, or did grow, academically while attending cyber school? Do you think it was good for your academically?

P: Umm,..yes and no. Cause (sic) I am the kind of person that learns visually, so it's better for me to be in a classroom, but the way everything was set online made it a little bit easier, and it made me kind of organized.

I: Okay, so that assisted you in your organization?

P: Yeah, and that would help, because like in school and stuff I need to be more organized.

I: Okay,..I am a little confused on your answer so I want to make sure I get it right. When your in school, brick-and-mortar school, you were more organized or not?

P: I wasn't.

I: You were not organized,…okay, but cyber helped you get organized because of the way the courses were laid out.

P: (acknowledged)

I: Alright. This question isn't on here but I am asking everybody, because…did you take any math while in cyber? Did you take any math?

P: Yeah I took Geometry.

I: Would that be rated your hardest course?

P: Yes.

I: Was it the toughest? I don't want to say that just because it was Geometry, but just to learn math in cyber, is that really difficult?

P: Yes it is. It is a lot better is someone is there teaching you. You just can't look at a book, or read a packet they want you to print out or something, or just look at it online. You can't do that. You actually have to have someone there in person that is willing to help you. I believe a lot of kids learn like that, cause (sic) I mean it is really, really (sic) hard to learn it online.

I: Would you recommend cyber to other kids or not?

P:Umm,..yeah I would.

I: [pause] Alright. [pause] Well, that is all the questions I have for you ____. Do you have anything you want to ask of me before we go?

P: No I don't have anything to ask.

I: Well, I really appreciate your help, and I appreciate you filling out my survey.

P: No problem.

I: I wish you best of luck back at….do you go to North or South?

P: South.

I: Back to school for your senior year at South. It is going to be a wonderful year. It is a great time to be in the building. Enjoy it. Thank your mom for allowing us to talk. Thank you very much.

P: You're welcome.

I: Bye now.

P: Bye.

Academic Self-Efficacy and Locus of Control – Interview 10

I: ____, I want to thank you for your willingness to participate in this interview for my study. I just need to confirm that you are voluntarily participating in this interview. Could you just answer yes or no?

P: Yes

I: Thank you. Please note that you can stop this interview at any time. Please be aware that all your answers are confidential and will only be used in my dissertation, and if there is anything you don't feel comfortable answering,…then please don't. If you are ready we will get started?

P: Okay.

I: Alright. If you recall the purpose of the study was to examine the relationship between a student's locus of control and academic self-efficacy and their success in cyber courses. Real quick, do you know what locus of control is? Do you have an idea?

P: No, not really.

I: Okay,..it is basically a person's outlook in life, whether you feel you are in control of your life, or is it the opposite where life is in control of you and things just happen, and no matter what you do things in life will happen and you have no control over. Then academic self-efficacy is just your personal beliefs of whether you have the ability to accomplish a particular academic task. In this case we are talking about being successful in cyber school. I am going to take a minute and look up your results here,…[pause]…let me see how you scored,…[pause]…it looks like you have ah,..high academic self-efficacy and an external locus of control. So how do you feel about your life? Do you have control over that or…

P: I would say yeah.

I: Alright. So the first question is ___, was last year your first experience in cyber?

P: Yes.

I: It was,…okay. That was your senior year? Is that correct?

P: No. This will be my senior year coming.

I: Okay, this will be your senior year coming and your junior year was your first year of experience in cyber. Very good. [pause] What would you say your average grade was leading up to your entry into cyber?

P: My average grade in a cyber course?....ninety..

I: No. I'm sorry. Let me restate that. I know you had tremendous grades, I know that. (laughter) I saw them. What was your average overall grade in your brick-and-mortar high school leading up to your entry in cyber?

P: Leading up to cyber…94?

I: Wow. Okay so high stuff. Great. It doesn't sound like it, but I am going to ask it,..have you ever failed a course? Let's just say high school or intermediate.

P: No.

I: No?

P: No, I have never failed a course.

I: Okay great. Now, why did you decide,…this is the big one, why did you decide to enter cyber school?

P: In all honesty,…you get study hall if you chose a cyber class, but also, I read quickly and I learn quickly, so for me to,..I feel like I waste a lot of time when I am in class.

I: Okay, you feel you waste a lot of time in school. Did you take multiple cyber courses or just a couple or one?

P: I took two.

I: Okay. I am sorry, you are from _____, and I haven't gotten your grades back yet. Can you sum in up in that,…you could kind of get done quicker in cyber? Could you just restate that answer?

P: I would say that I got done quicker and I could learn more effectively (in cyber).

I: Okay, and that is why you chose to take those courses online?

P: Yes.

I: Okay, so I am assuming, well maybe not,…while you were taking cyber courses,…did you participate in any sports? Are you in any clubs, sports teams, anything like that in school?

P: Yes.

I: Okay, and how about, while you were participating in cyber classes, did you maintain those sports or activities in any way?

P: Yes.

I: Do you consider yourself a motivated person?

P: Yes.

I: Yes, I can tell.

P: (laughter)

I: Why would you say,..give me some evidence that will convince me you are a motivated person.

P: I am in a lot of clubs, I am a cheerleader, I love science, I am volunteering at the hospital.

I: Yep, I agree (you are motivated). So the cyber courses that you took,..do you mind if I ask you what those two courses were?

P: I took junior seminar, which is a like a career planning college preparation class,…

I: Okay.

P: and I took sports nutrition.

I: Great. Do you feel that you grew academically while taking those courses? In other words, was it worth your while, were they,…do you feel you got something out of them?

P: Yes.

I: [pause] Would you, hypothetically, could you see yourself being a fulltime cyber student of some sort? How did you feel overall about that process?

P: I enjoyed it, and I would be fulltime for high school, but not for college.

I: [pause] Alright. Not for college. Alright. I don't have any more questions, unless you have any for me? I truly do appreciate you helping me out. I hope I sent you your gift card. Did I send you one?

P: Yeah,…thank you.

I: That is everything then.

P: Alright.

I: I will eventually send out a synopsis of my findings to everyone who has given me an email address. Maybe in December,…if I graduate in December,...I will send you that stuff.

P: Great, I would be interested.

I: Alright, thank you so much and keep up the great work.

P: Thank you. Have a nice day.

I: You too. Bye.