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Social Skills Comparison of Online and Traditional High School Students

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Walden University
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Abstract

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MS, Walden University, 2007

BA, Wilkes University, 2002

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Online education has evolved over the last 18 years as technology continues to advance. Starting at age 5, children are able to forego traditional classrooms and begin attending school from a computer in their homes. Research has not identified significant academic differences between traditional and online schools; however, there is limited research on differences in social competency in these settings. Bandura's social learning theory was used as a framework to compare social competency skills in traditional (n = 113) and online (n = 28) high school students living in Pennsylvania using the Social Skills Inventory (SSI). Participants were recruited using a private research consulting company. When comparing overall SSI scores of online and traditional students using an ANOVA, a significant difference was found (p = .04), with traditional students scoring significantly higher in social skills than online students. However, ANCOVA analyses showed that after controlling for age and years enrolled in each school setting, there were no significant differences in SSI between the two groups (p = .08, and .09 respectively). These results should be interpreted with caution due to the disparate group sizes. It remains unclear if online school students are socially impaired compared to their peers in traditional brick and mortar schools; however, no such differences were identified in this research. The findings of this study may impact social change by serving as a pilot to inspire the development of new measures and identify a need for future studies. A longitudinal study may provide more insight about social development in online school students. In addition, development of a measure that encompasses modern socialization and variables that are applicable to all school aged children could assist with more clearly identifying any relation between school type and social development.

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Dedication

I would like to dedicate this research to my grandfather, Walter Miller. Although I could not be there for him when he moved on, I know that he was standing beside me as I continued to work on my doctoral degree.

I would also like to dedicate this to the rest of my family. Without their support, I would not have completed my project.

Acknowledgments

I would like to thank my parents, first and foremost, for always believing in me and pushing me to try harder. They were the ones who encouraged me to go to college fresh out of high school despite my own wishes. They continued to stand by me and support me throughout the years and have always been there for me when I needed them.

I would like to thank my husband for being patient and supportive while I continued to work on my dissertation. He was also there for me when I needed him. We have put our family on hold while waiting for the completion of this project.

I would also like to thank my dissertation teachers at Walden University. The process could not be complete without their support and guidance.

Table of Contents

List of Tables

List of Figures

Chapter 1: Introduction to the Study

Introduction

The following study examined social skills competency of high school students. It compared students in Grades 9–12 attending high school either traditionally or at an online high school. Social competency is important in many aspects of life and currently there is little research examining the effects of attending high school online on the development of social competency. Data from this study can provide educators with insight as to how students attending high school online are currently faring socially when compared to their traditional school counterparts. If a gap is identified, educators can implement strategies to help negate the social disadvantage of attending high school online. The following chapter will provide information about the problem and also include the nature and purpose of the study. Definition of terms will be provided as well the assumptions, limitations, and significance of the study.

Background

Online education for Grades K–12 began in 1997, and we continue to see increasing growth annually (Fox, 2006; Watson, 2009). Although online education for K-12 has been in place for the past 16 years, research is limited. Despite the limited research with online education, online learning as an academic environment continues to exist and flourish in most states and now has a K-12 enrollment of over 1 million students (Picciano & Seaman, 2009; Watson, 2009). The available investigations of online education generally involve college or trade schools. Furthermore, research related to social competence and its associated skills is almost nonexistent. This investigation

found a meta-analysis of comparative data evaluating academic outcomes of online students K-12. The researchers found only five studies that compared learning effectiveness of K-12 online and traditional schools between 1996-2008 (Means, Toyama, Murphy, Bakia, & Jones, 2009). The meta-analysis identified that there was no significant difference academically between online performance and traditional performance at the K-12 level (Means et al., 2009). Social competence and the necessary social skills required to develop this ability was not included as a variable in either of the studies compared.

Social skills are used to communicate with others, establish and maintain relationships, cope with the social environment, and even aid in satisfactory school adjustment (Gresham, Van, & Cook, 2006). Without competent social skills a person may be at risk for mental health concerns, fail to maintain employment, and may suffer when trying to form and maintain relationships with others (Gresham et al., 2006).

The theory of social learning provides understanding of how social skills are developed. The social learning theory suggests that through observation and modeling of behavior of another, a person will develop socially (Bandura, 1977). If the observed behavior is performed by a person similar to the observer or is performed by someone the observer values, and the behavior's results are important to the observer, the observer is more likely to repeat that behavior. A student will observe a peer's behavior and then mimic that behavior (Bandura, 1977). Although media research indicates observational learning may occur when watching electronic media, the ability to practice and master social skills requires interactions with others (Shoaf, 2007). This interactive process of

gaining skills such as consideration of others' feelings and needs requires observations of how others respond to actions. Bandura (1977) postulates that face to face interaction is important for social skills development. For instance, Barnett and Weber (2008) found that the more time a student spends in extracurricular activities, the more socially competent they are when compared to peers. This could be attributed to the extended periods of time engaging socially with peers while using a wider variety of skills such as team building, character building, and intrinsic rewards. Therefore, group activites provide opportunities to not only observe, but also to learn social cues from others and to practice behaviors learned from others.

Bandura posited that external, environmental reinforcement was not the only factor to influence learning and behavior. He emphasized the role of cognitive processes and their connection between learning and behavior. However, there is little debate about whether people vary in their ability to learn and develop social skills.

Controversy has arisen as to whether the ability to develop social competence is similar to the innate ability to gain information cognitively (Weare, 2013). If that hypothesis is accurate, however, the question for educators becomes: Can social competence be developed without face to face interaction, which most often occurs within the traditional classroom setting? Huitt and Cain (2005) explored how emotional experience impacts learning. Their work significantly expanded understanding of social competency development for online learners, particularly addressing the lack of interactive experiences available in that learning environment.

Problem Statement

Rice (2006) speculated that attendance in online schools may hinder the student's development of social competence, but the impact of online education on the development of student social skills is little understood due to a lack of available research. Investigation of the validity of this speculation is of importance to educators and parents because poor social skills have been found to negatively impact not only educational achievement but also success in employment, relationships, and mental health (Gresham et al., 2006). This study helped identify whether attending an online school influences the students' development of social skills. This research provided information for both parents and educators that can aid them in making informed decisions regarding a student's optimal educational environment.

Many researchers have examined the role of school as an agency of socialization (Merrell & Guelder, 2010). Studies have found that socialization occurs throughout the traditional academic experience. In addition, research has been conducted on socialization in homeschooling (Lubienski, 2000; Roblyer, 2000). However, research exploring the acquisition of social competency in educational settings that lack face to face contact with peers is sparse.

Purpose of the Study

Lack of social competency has been found to lead to multiple difficulties including academic, occupational, mental health, and forming healthy relationships (Gresham et al., 2006). The purpose of this study was to help contribute to current research as well as determine whether or not students who attend online education face

social skill deficits as a result. If deficits were identified, the information could be used to help online school officials develop programing that promote social skills development to address any socialization gaps.

The following study was a quantitative study. It compared social skills competency of online high school students Grades 9–12 with traditional high school students in the same grade. The independent variable was school type, online or traditional. The dependent variable was the social competency score. Data was measured and analyzed using SPSS 22.

Null Hypothesis 1: There are no significant differences in students' social competency scores between school types (online, traditional).

Alternative Hypothesis 1: There are significant differences in students' social competency scores between school types (online, traditional).

Null Hypothesis 2: There are no significant differences in students' social competency scores between school types (online, traditional), after controlling for age.

Alternative Hypothesis 2: There are significant differences in students' social competency scores between school types (online, traditional), after controlling for age.

Null Hypothesis 3: There are no significant differences in students' social competency scores between school types (online, traditional), after controlling for age and the number of years enrolled in their current school type.

Alternative Hypothesis 3: There are significant differences in students' social competency scores between school types (online, traditional), after controlling for age and the number of years enrolled in their current school type.

Theoretical Basis

Due to the essential nature of developing social competency for future success, I used Bandura's (1977) social learning theory as a foundation for this research on student social skills. Bandura and other social psychologists have explored how social skills are developed as a whole; however, limited research exists comparing social skill acquisition of online and traditional classroom students. According to Bandura's social learning theory, learning occurs by observing others and then imitating the behavior and repeating it. There are four components to the theory: attention, retention, motor reproduction, and motivation. The individual must be motivated, paying attention, and able to repeat the observed behavior in order to learn it (Bandura, 1977). Online learners have limited accesss to engage face to face with their peers regularly due to the absence of the physical classroom (Shoaf, 2007). Based on Bandura's theory, it is reasonable to hypothesize that attending an online school may create deficits in online students' social skills competency. More information about this theory will be explained in Chapter 2.

Nature of the study

I selected a quantitative survey design for this study to allow for comparison of students across the two school types. The independent variable was the type of school the student attended. The dichotomous choices were traditional or online schools. Traditional school refers to brick and mortar schools where the student physically attends

in a classroom with a teacher and similarly aged peers. Online school refers to classes that a student takes through a home computer, without the face to face interaction with peers and teachers. The dependent variable is the score the student obtains from taking the Social Skills Inventory. The data will be collected online through the Qualtrics panels team. Participants were high school students that were enrolled in Grades 9–12 while residing in the state of Pennsylvania. The survey was located online at mindgarden.com. Data collected from the surveys was analyzed using SPSS 22.

Definition of Terms

Social skills competency –The ability to communicate with others socially, make and maintain relationships, and be able to cope with the social environment. In addition, social competence meant possessing and using the ability to integrate thinking, feeling, and behavior to achieve social tasks and outcomes that are valued in the host context and culture. In a school setting, these tasks and outcomes would include accessing the school's curriculum successfully, meeting associated personal social and emotional needs, and developing transferable skills and attitudes of value beyond school (Gresham et al., 2006).

Social Skills Inventory (SSI) - The Social Skills Inventory (SSI) is a self-report inventory used to measure a person's ability to communicate (Hirokawa, Yagi, & Miyata, 2004).

Online education – Education that is given to a student provided over the internet via the computer rather than in a physical classroom. Instruction may have been fully or partially online depending on the school and program (Means et al., 2009). In online

learning education, technological media, including video, audio, and digital communications helped facilitate a student's learning. In K-12 online schools, learning happened on the student's own time (within reasonable limits). A teacher might have assigned work for the week and then expected the student to finish that work on the student's own time during that week. The student was required to have internet access and a computer at home. In this learning environment there was no face to face interaction with peers except through classroom forums on the internet, if offered. The student never had to leave home in order to fulfill class requirements. The teacher was still available for assistance, but only through email or phone calls. This study focused on programs in which the students were enrolled online full time.

Traditional school- A method of education that happened in a classroom environment within a school setting typically with a large chalkboard, a teacher's desk and several rows of student desks. That type of structured environment included teacher-student interaction, the opportunity to benefit from discussion forums and instant feedback, a structured school day, the ability to work in groups, a standard curriculum, and the opportunity to explore new extracurricular activities.

Cyber school- For the purpose of this study, was used interchangeably (along with *virtual school*) with the term online education.

Assumptions and Limitations

In the study, I assumed that the respondents were high school students living in Pennsylvania. Because the survey was completed online, I could not verify that the responses came from the assumed participants. This is important to understand when

reviewing the results of the data. I also assumed that limited face to face interaction was a concern due to the increasingly large number of students enrolling in online educational settings.

The focus of this study was chosen due to the importance of social skills competency on many aspects of life. Students from Pennsylvania were chosen due to proximity to the researcher. All students in Grades 9–12 living in Pennsylvania were eligible to participate. Exclusion criterion was students who had challenges reading. This exclusion was selected due to the Social Skills Inventory requiring an 8th grade reading level. The small scale of this study reduced the ability to generalize to all high school students.

Self report instruments tend to have an inherent bias toward self-selection. Participants who chose to participate in an online survey may be more motivated to report positive feelings toward online learning and therefore, report possession of better social skills than expected. In addition, self-report inventories may not be an accurate reflection of truth. High school students might not take the study seriously and results may therefore be inaccurate (Pardo, Pineros, Jones, & Warren, 2010). The study was voluntary and only certain personality types may have choosen to participate, leaving out valuable data. I attempted to minimize this factor by remaining cognizant of participant bias.

Furthermore, traditional students who do not have computers may be less likely to complete the survey because the survey must be completed online. Due to the SSI requirement of an eighth grade reading level, students had to be in ninth grade or above.

Still, such survey reports were valuable in ascertaining students' personal reactions to situations that require effective socialization skills.

Another limitation of the study was the assumption that students learn socialization skills through observation and modeling, and that by not interacting with peers in a face to face setting at school, they may have less social competency than peers who attend traditional schools. Although, some debate remains as to whether socialization for children occurs formally in the school structure and socially through interaction with peers, many researchers agree that the classroom setting has a primary influence on social skill development in children (Roblyer, 2006).

Questions exist, however, as to whether face to face contact or predisposition to sociability personality characteristics influences social competence. Kagan (1998) explored the role of temperment on socialability. His research found that although sociability is an inherent trait, it must be reinforced by interacting with others in childhood, and it remains consistent through adulthood by positive reinforcement.

On the other hand, proponents of homeschooling have found that social competency of home schooled children, where face to face contact is primarily experienced in the family, is at least equal to those receiving education in the traditional classroom (Francis & Keith 2004).

Finally, this investigation did not include the extreaneous variable that the particpants in this study may have already developed sufficient social competence prior to participation in online learning.

Significance of the Study

This study helped to fill the gap in empirical investigations by providing information on social skills competency for online learners in Grades 9–12. If a deficit were identified, school officials, psychologists, educators, and parents could help to foster students' development of social competence by introducing new strategies and curriculum that help boost social competency into the online education lesson plans. In addition, parents and family members could provide supportive socialization opportunities that may not be provided by the virtual school environment. With the vast number of students enrolling online every year, it was important to identify and understand if there was such a deficit and to address it quickly before it negatively impacts students' learning. If the study revealed a deficit in social skills, online students may demonstrate difficulties obtaining and maintaining jobs and friendships. They may also develop mental health problems. If there were no deficit in social competence or if minimal deficiencies were found, students and their parents may opt for online learning without concern for its effect on social development.

Summary

In this chapter, I identified the gap in research related to social skills competency of online high school students. It outlined the significance of why social skills are important. The hypotheses were presented as were the assumptions and limitations of the study. Bandura's social learning theory was used as a theoretical guideline for the study. In the following chapter, I will explore the current research on social skills competency and online schools.

Chapter 2: Literature Review

Introduction

Education has changed greatly in the United States over its history. It has shifted from a privilege available only to Caucasian males who could afford the tuition, to a mandatory necessity for all children. According to the National Center for Education Statistics (NCES), in 2009 there were 49.8 million students enrolled in K-12 public and private schools in the United States, with enrollment having increased 31% over the past 25 years (NCES, 2009).

The number of students was not the only factor that had changed in the last 25 years. Advances in technology created an entirely new educational delivery system. In 1997, the Florida Virtual School became the first online public school in the United States (Fox, 2006). Since then, the number of online schools and students continued to flourish as technology advanced. In 2004, there were a reported 2,400 public online charter schools in 37 states with a total of 40,000 to 50,000 students attending (Fording, 2004). Those numbers have increased significantly. According to Watson (2009), Florida had the largest state-run online learning program with 125,000 students. Apex Learning, a vendor-led virtual school based in Seattle, served approximately 207,000 students (Ash, 2010).

Florida and Apex Learning only represent a small portion of the online education community. In November, 2009 there were 26 schools with statewide programs, all of which experienced at least 25% growth from the previous year (Watson, 2009). Six states experienced over 50% growth, and by April, 2010, there were 35 states with

statewide online schools (Watson, 2009). Pennsylvania, where this study focused, had 19,715 students enrolled online in the 2007-2008 school year (Benefield & Runk, 2009). This represented a 760% increase from when the schools first opened in 2001 with 1,852 students (Benefield & Runk, 2009). It is now estimated that there are over 1 million online K-12 students in the United States (Picciano & Seaman, 2009).

Increasing enrollment in online schools has led to concerns about achievement and social competency for the online learners (Vrasidas & Zemblyas, 2003). Several studies have presented research on the academic performance of online students, but few exist that examined social competency (Means et al. 2009). This study examined social competency differences between online school students and traditional classroom students.

The large number of students entering online school communities has placed new demands on school districts. Various types of cyber schools have evolved to handle challenges such as maintaining adequate staffing and availablility of online classes as well as resources for the students. Similar to traditional schools, there are public, private, and charter cyber schools. Funding for these schools varies as it does for traditional schools. Some receive funding from the state, while others are funded at the district level, and some charter schools are funded by multiple districts (Watson, Winogad, and Kalmon, 2004). Online programs can be full-time or a supplemental program in support of traditional school (Watson, Gemin, Evergreen Education Group, & Coffey, 2010). This study focused on full-time students.

In the following chapter, I review the current literature on online education. The information was obtained through use of the online EBSCO host search engine, the internet, personal references, and local libraries. Key words included: online education, online school, social skills development, Bandura's social learning theory, charter school, home school, and social skill deficits. These keywords were essential to provide an expansive search of professional literature related to online learning and social skill acquision in children, but, narrow enough to exclude irrelevant information .

The literature review took place over a 1-year period with updates performed periodically over the past 3 years. Peer-reviewed journal articles were the main literature type used in this review. Limited research was found in regards to online school and social skills competency. The researcher looked to similar study subjects such as home schooling for reference.

The literature review identified the growth in online learning and how technology had an impact. The literature review also presented the history of online schooling, reviewed the factors that influence preference for online schooling, and noted the advantages and disadvantages of online learning. In addition, the chapter discussed social skills and how they were used within an online learning setting. I also explored the theory of social learning by Albert Bandura, particularly how it applied to the development of social competence in an online educational setting.

Factors That Influence Desireability For Online Learning

One of the chief advantages of online learning was the flexibility in time scheduling and lesson plans that allowed students more freedom and independence

(Shoaf, 2007). The advantages of online learning may have included additional time to reflect on the topic and gain insight through reading and flexibility in when the student can choose to participate in conversations.

Studies have shown that online learning was associated with academic success (Means et al., 2009). Online students had the ability to revise and add to their assignments, which allowed them to produce a more thorough reflection of academic material than allowed in a face to face arena (Vrasidas & Zemblyas, 2003). Barker and Wendel (2001) found that online students showed improved (a) critical and creative thinking, (b) research and computer skills, (c) problem-solving and decision making abilities, and (d) time management, over traditional school peers. They also possessed the ability to learn independently. Swan (2003) found that students attending online high school felt less dominated by their teachers. They felt that their opinions mattered more and the classroom had more of a democratic feel than in a traditional school (Swan, 2003).

Research has also found that if online learners are provided with the same learning materials, quality of teachers, and resources as traditional students, they will be able to achieve the same academic outcomes (Kearsley, 2000). Online learning could be used to improve how and what students learn while providing high-quality learning opportunities (National Association of State Boards of Education, 2001, p. 4). Another study conducted in Ohio used small focus groups of teachers, students, and parents who provided feedback for the researchers regarding their perspective of online charter schools (Shoaf, 2007). They found that the ability to have individualized instruction

through which students could move at their own pace was one of the charateristics they enjoyed about online charter schools. The focus groups also enjoyed the freedom in online schools to modify lessons and choose how to organize their school day (Shoaf, 2007). Individualized and self-paced instruction helped to create a learning environment that reduced dependency on the teacher and fostered individualized active learning (Vrasidas, Zembylas, Evagorou, Avraamidou, & Aravi, 2007).

Online learning could also be used to help students prepare for state based achievement tests. McDonald and Hannifin (2003) found that web-based computer games helped students be more socially engaged and able to identify misconceptions when preparing for a standard of learning test than peers who did not play the games. Traditional students were given the opportunity to use the computer games in the classroom in pairs or groups to study for the tests. They engaged in conversations and debates about academic topics and were also extremely motivated to study for the test (McDonald & Hannafin, 2003).

The online learning environment could also be effective for children who have special needs (Lord, 2002). Accommodations for special needs included audio files, adding text to graphics, consistent page layouts, limiting colors and font types, replacing pictures for words, ensuring course materials are available to the student, choosing the best instructional design, providing extra time, and offering lesson summaries (Keeler & Horney 2007).

Students undergoing special life circumstances could also benefit from online learning. Pregnant teenagers and teenagers who were working full time to help support

their families could attend school online with more flexibility (Barbour & Plough, 2009). Online learning environments could also provide access for students with severe medical disabilities, athletes, military children, and performers (Watson et al., 2010).

Students were not the only ones who benefit from learning online. Financially, online schooling benefits the state and taxpayers. Online education costs substantially less than traditional schools. In Pennsylvania it was estimated that the average cost per online student was $8,556 while the traditional student cost was $13,331. The total savings for the 2005 to 2006 school year in Pennsylvania was more than $32 million (Benefield & Runk, 2009). Traditional Florida schools spent $6,291 per student, while a student attending online cost taxpayers $5,243 (Darrow, 2010).

As previously noted, another advantage to online learning was that many online students were found to exhibit improved critical thinking, computer skills, decision making abilities, and time management skills (Barker & Wendel, 2001). This improvement may have correlated to factors such as comfort in the home environment; reduction of negative external variables such as bullying and conflicts with peers and school officials; and individualized curriculum to support academic skill deficits.

Online schools have also been able to provide education for students who have been temporarily displaced from school due to natural disaster (LaPrairie & Hinson, 2006-2007). Natural disasters and other events that remove students from home cause them to lose valuable education time. Online education systems could be used to help support these students until they are able to return to their own schools (LaPrairie & Hinson, 2006-2007). Hurricane Katrina displaced 186,000 students and took months for

education to be reestablished (LaPrairie & Hinson, 2006-2007). Having access to online education helped provide some with a learning environment until their schools were rebuilt.

These factors make online education an attractive alternative to the traditional educational classroom for some students. Students come from different backgrounds and have different reasons for exploring alternative educational options. Available research concluded that there have been several advantages for students who were attending school online. One of the goals of online education is to provide students access to a variety of educational options and give the parents the freedom to choose the one that best fits their child's needs.

Online Disadvantages

The many benefits of attending school online notwithstanding, learning online limits the capacity for certain specialty classes such as the arts, physical education, languages, and music. Generally, activities such these, which foster interaction and observational learning opportunities, are integrated into the traditional classroom schedule, and there is no need to develop special scheduling. Such physical and closely interactive classes are often difficult if not impossible to teach effectively in an online format (Barker & Wendel, 2001; Bond 2002; Conzemius & Sandrock, 2003). For example, students who studied music have had a more difficult time developing skills and acquiring musical knowledge when taking classes online. Their performance quality was also poorer than that of traditional students (Bond, 2002). In addition, while foreign languages can be taught online, having face to face interaction with a teacher has been

shown to be optimal for language learning (Conzemius & Sandrock, 2003). Specifically, Barker and Wendel (2001) found that for speaking and listening skills, face to face learning of foreign languages is preferred over online learning.

Despite advances in technology, other disadvantages associated with online learning remain. Social competence is generally acquired through socialization opportunities in peer to peer interactions. Predominately, children engage in these interactions during school activites. For most elementary school children, conventional schooling is the main arena for socialization and is where many social skills are modeled and learned (Tasmajian, 2002).

Another concern with online learning is the absence of the continual interaction and modeling that is provided by physical human presence. Students attending school online have limited face to face interaction with both their teachers and other classmates (Shoaf, 2007). During focus groups with online students and their parents, the participants expressed desire for more group interaction with peers as well as face to face exchanges with their teachers. In response, online schools have begun to add field trips and take advantage of technology to help improve social communication among online students (Shoaf, 2007). However, the lack of research addressing the effects of online schooling on socialization and the development of social competence means that the value of these efforts remains largely unknown.

Some online school programs have a high dropout rate (Carr 2000; Roblyer & Elbaum, 2000; Simpson 2004). In the 2003-2004 school year a small Colorado school of

1,000 students lost almost 25% of its online students due to the school operating below the expectations of the parents and students (Curriculum Review, 2005).

The complex relationship between social communication and online learning remains largely unexamined in the research. New research in this area can help to identify these complexities and provide online schools with valuable insight. Lack of face to face interaction and social skill development has been one of the major concerns with online learning, especially for younger students (Rice, 2006). Online teachers and students have identified chatting before and after class as a missing element for online education (Dunlap & Lowenthal, 2009). Online schools regularly struggle to overcome the social isolation of students (Barbour & Plough, 2009). A study done by Shoaf (2007) found two disadvantages in online learning: limited social engagement and the lack of depth with special classes. Both students and teachers expressed a greater desire for face to face engagement.

Once the decison has been made to attend an online school, students should determine which one best fits their learning style. Online schools vary in the way that teachers and students communicate, homework assignments are handled, tests are given, and various other ways. There are also different types of delivery methods for instruction as well as different schools for special populations. Typically, online schools have their students complete assignments on their home computer and submit them to their teacher for grades (Shoaf, 2007). However, not all online learning is conducted in the same fashion. For example, one British online school, Briteschool, has students log into the classroom in the morning and interact with their teacher online throughout the day much

like traditional students. Brower and Klay (2000) note that this type of synchronous online teaching may help alleviate the lack of social contact between students.

The Development of Social Competency

Learning style and dissatisfaction are not the only considerations that should be taken into account when a student chooses to attend an online school. The development of social competency for children has historically been believed to be acquired predominantely through interactions with same age peers and others in the traditional school setting. Online students do not have the same amount of face to face time with their teachers and peers as traditional school students. Concerns have arisen about social skills competency for online students as indicated in the previous section. In the paragraphs below, the significance of social skills and what makes them so important for children and adults was be identified.

There are several characteristics that have been identified that can help students be socially successful in a learning environment: autonomy (Keegan, 1996), responsibility (Wedemeyer, 1981) and internal locus of control (Rotter, 1989). Ming-Te Wang (2009) found that traditional school students who are encouraged to be more autonomous and interactive with their peers are more socially competent, less likely to engage in negative behaviors and have difficulty managing their emotions. These characteristics can also help online students be successful in school. Zsolnai (2002) found that conscientiousness, openness, academic self-concept, and intrinsic learning motivation play a key role in relation to grades and academic success. The study also identified that these important characteristics improve with age (Zsolnai, 2002).

Connections between peers and teachers are important and need to exist in order to help ensure success in school. Vygotsky (1978) felt that higher cognitive processing originated from social interactions. Motivation and involvement are influenced by good connections between the faculty and the students (Dunlap & Lowenthal, 2009).

Social skills can be thought of as a group of responses used to help facilitate communication amongst a group of peers (Gresham, et al., 2006). For example, gestures include eye contact, sharing, cooperation, listening to friends talking, and giving the proper greeting (Gresham et al., 2006). These social skills are paramount to communication as well as important for gaining and maintaining social relationships, coping with the social environment, and satisfactory school adjustment. For adolescents, there are several factors that may interfere with proper use of social skills: they may have the skill and choose not to use it, known as a performance deficit; have the skill, but something prevents them from using it such as a mental health issue like depression or noncompliance; or simply not know the social skill, acquisition deficit (Gresham et al., 2006).

Failure to acquire adequate social skills may lead to limitations when making friends, gaining employment and acceptance from peers, dating, and social achievement (Turkstra, Ciccia, & Seaton, 2003). Gumpel (2007) states that "There may be no greater predictor of mental health than an individual's ability to interact with his or her social environment and develop a network of friends, associates, and peers." Meadan and Monda-Amaya (2008) also have found that peer difficulties during childhood can lead to withdrawal or depression later in life. Inadequate social competence can also lead to

becoming a victim of bullying (Kaukiainen, Salmivalli, Lagerspetz, Tamminen, Vauras, Mäki, & Poskiparta, 2002).

Studies have found that social skills not only help with communication and mental health, they also aid in academic success (Lane, Menzies, Barton-Arwood, Doukas, & Munton, 2005). A student's social competence can be used to determine how they will adjust to a classroom as well as school and life success (Meadan & Monda-Amaya, 2008). Brain development, cognitive abilities, and language development are also influenced by a student's social competence (National Scientific Council on the Developing Child, 2007). Social skills are helpful with finding and maintaining employment as well as relationships (Utay & Utay, 2005).

As technology advances and becomes more a part of daily life, the human brain has begun to make adaptations to adjust (Small & Vorgan, 2008). More communication and interaction is spent through new technology and these changes may make nonverbal gestures such as facial expression and gestures less discernable. This has been attributed to the reduction of less face to face interaction going on between humans today. According to Small and Vorgan (2008), studies have also found positive cognitive changes to the increased amount of technology. Overall, IQ scores have been improving; video game players show improved multitasking, quicker ability to scan data and find relevant information, and improved forms of attention and memory (Small & Vorgan, 2008).

Limited face to face interaction means that communication for online students is quite different from traditional students. Social skills are important for online students to

help facilitate communication with their teachers and other students. Traditional students engage their teacher and peers verbally and by using facial and body expressions. The teacher also has the ability to use the blackboard, wait to see when the students are done working, and see nods or looks of confusion (Vrasidas & Zembylas, 2003). When they converse with others, there is generally only one person communicating at a time. Online school students generally do not physically see their teacher or peers and must interact with them in a different format through their computer.

Online students usually communicate by participating in multiple conversations through a forum in their virtual classroom. While the forums allow for the students to discuss multiple topics and express ideas simultaneously, forum responses are not instant and the student has to wait for a classmate or teacher to read their discussion to obtain feedback. Online students also communicate by participating in a live chat or video conference with their teacher (Vrasidas & Zembylas, 2003). These conferences allow for instant feedback of ideas, but there may be several students typing or talking at the same time which can make conversation difficult (Jenks, 2009). There are also delays in online chat that do not typically occur in a face to face conversation. The delays in online classrooms are typically 30 seconds to 2 minutes (Vrasidas & Zembylas, 2003). Often there are students whose responses may not add to the conversation or be relevant and after a few disjointed messages are typed, the conversation can be difficult to follow and may lose meaning (Vrasidas & Zembylas, 2003). There are also no facial or body expressions to help indicate tone of voice and joking (Jenks, 2009). Online students miss out on the nonverbal part of communications that would take place in a traditional

classroom to help understand the flow of conversation. Online students can use emotions to help signify nonverbal communication; however, some students are unfamiliar with how to use them (Vrasidas & Zemblyas, 2003).

Social Skills and Learning Online

There are some strategies teachers can use to help online students feel more at ease in the classroom on a social level (Fisher & Tucker, 2003-2004). Just like traditional school students on their first day of school, online students typically do not know anyone else in the classroom. Sharing information and volunteering to answer questions may be just as difficult the first week or two of class. Social engagement is often promoted in the virtual classroom through the use of icebreaker games. Icebreaker games are initiated by the teacher and help the students to be more open and have more meaningful conversations during live chat sessions (Fisher & Tucker, 2003-2004). The teacher initiates the game by having the students pick numbers until they are all in numerical order. They use the order every time they play a game. Games follow by having the students pick their favorite color, song, or food. The topic is up to the teacher and can be anything to help the students begin talking and relax (Fisher & Tucker, 2003-2004).

Barbour and Plough (2009) found that increasing social interaction within the online classroom is helpful. In their pilot study they developed an online environment within the classroom in which the students could interact with each other and the teacher. Before or after class, the students were able to post pictures, music, upload a profile about themselves, write blogs, and chat as a group. There was also a discussion forum in which

the students and teacher discussed both academic and personal information. The students were even able to take part in some academic planning through the forums. Positive feedback was received from both the students and the teachers involved in the pilot study (Barbour & Plough, 2009).

One study used Twitter and found that students were able to get help in a timely manner and communicate quickly with each other about certain topics (Dunlap & Lowenthal, 2009). The students learned to write concisely and produce work that was going to be read by the public. The students were also connected to a professional community of teachers and other students learning how to make a social network. Twitter was also useful in helping the student find informal learning resources and maintaining relationships beyond the classroom. There were several drawbacks found as well with using Twitter. Cell phone charges, addiction, and bad grammar habits were the main ones mentioned (Dunlap & Lowenthal, 2009).

Face to face interaction with teachers and peers is an important part of education. Virtual chat is a tool that can be used outside the classroom to help online students feel connected to their peers. A study compared the use of computers for traditional school students both at school and at home. They found that at home a student is more likely to engage in activities that are not school related such as games and online chat. In fact online chatting is banned from most traditional school computers and was found to be the second most popular rated activity amongst students (Lei, Zhou, & Wang, 2009).

The desire to chat with friends and the results from the study above indicate that online students may also utilize online chat to communicate with their virtual classmates

outside of the classroom chat facilities. Adolescents spend more time online and with internet based chats than adults (Peter, Valkenburg, & Schouten, 2005). Parents should understand the risk of sexual predators, hate groups, cyber bullying, risky sexual behavior, addiction, cyber threats, and unsafe disclosure of personal information while their child is socializing over the internet outside of the classroom (Willard, 2006). It is recommended that parents are educated about these risks of chat use outside the classroom so that they may help monitor and guide their adolescents into making proper choices.

Social Learning Theory

Because the nature of learning which takes place over the internet, limited or no face to face interaction with peers and teachers is likely. Yet, Albert Bandura asserts that learning occurs through observation (Bandura, 1989). According to his theory, there are four key factors of observation: attention, retention, reproduction, and motivation. Attention is how much the person is watching the activity or event. Some things may be more interesting than others depending on preferences and the activity. After the activity is observed, it must be remembered in order to be learned. Retention is the ability to retain the activity or information that was observed. Reproduction is the ability to recall or perform the activity or information that was observed. Finally, motivation is the desire to reproduce what has been learned. There can be direct, vicarious, and self-produced rewards that act as motivations for reproduction of the observed task or information. Direct reinforcement is when the person is given something for reproducing the task. Vicarious reinforcement occurs when a person increases their reproduction of the task

after observing others being rewarded for performing it. Self-production occurs when the task is seen as valuable or gratifying to the person who observed the task (Bandura, 1977).

Lave and Wenger (1991) posit a process for social skill learning termed "legitimate peripheral participation." In this theory, the theorists propose that learning social skills is situational; that it is embedded within activity, context and culture. Furthermore, these theorists stipulate that learning is intrinsic and occurs unintentionally rather than intentionally. Extrapolating on this premise, supplemental activities such as extracurricular programs and pre-designed experiences included in online curricula may not supplement the social skills gained during these unintentional situational learning experiences.

Another important aspect proposed in the social learning theory is that people are more likely to learn and model behaviors from those who are perceived to be similar to themselves (Bandura, 1986). Social influences and physical environment also play a part in developing expectations, beliefs, and cognitive competencies. According to this supposition, learning occurs through observation and is more likely to be learned from people who are similar to self (Bandura, 1986). It can then be hypothesized that children attending a traditional school can observe social skills from other similar aged children and learn to reproduce these behaviors based on this theory. We can also hypothesize that there may be an association among children attending school online and lower scores on the SSI..

There are, however, other factors which influence social skill acquisition besides the type of school they attend, traditional or online. As previously mentioned, social learning theory proposes that observing similar aged peers influences learning (Bandura, 1977). Studies have identified that increased participation in extracurricular activities that involve interpersonal involvement with peers leads to improved social competence as well as academic performance (Barnett & Weber, 2008). However, there are limited empirical investigations on social skill acquisition in online students. In other words, there is a gap in the body of knowledge related to social competence of online students in comparison to traditional classroom setting students.

The social learning theory was selected for this research due to the nature of the study. The current study is examining the lack of face to face interaction with similar aged peers and its potential affect on social skills competency. The theory ties in with the hypothesis in that we are examining two groups of students who experience different levels of face to face interaction based on school type. According to Bandura's theory, the students who attend traditional school should develop a higher social competency than their online peers.

Summary

Over the past decade, the delivery of education for students in kindergarten through twelfth grade has evolved to include more than the traditional classroom setting. An online delivery model has become available and many students are opting to learn online instead of in the classroom. The number of students who have enrolled in online schooling has increased exponentially throughout the United States and in Pennsylvania

where this study was conducted. A review of literature shows that there are advantages and disadvantages for attending online school. The point of contention arises between theorists about how social competence is acquired and whether face to face interaction and activities are required to gain social skills sufficiently enough to be successful in life. Evidence in support of or disputing these speculations is limited.

Academically, the literature suggests that students attending school online can be successful. Yet, there is little evidence in the research evaluating the social skill development of online learners. Social learning theory suggests that learning occurs through observation and online learners have less opportunity for observation. To address this concern, online schools and teachers are developing new strategies to help improve online communications in an effort to increase socializational opportunities. However, these strategies are based on assumptions rather than research that evaluated whether online students have actual social skill deficits in comparison to traditional classroom setting students. The lack of investigation into online learners' social skills points to the need for additional research in this area. Any evidence found could be the foundation for further exploration identifying exact skill sets which are deficient and the development of evidenced based practices which may mitigate any social skill deficits found. The present study compared social skills of both online and traditional school students to help identify if there are any potential gaps in social skill sets or if online school students demonstrate social skills competency similar to their peers.

The following chapter discusses the methodology for the study. This includes design, participants, measures, procedures, data analysis, assumptions and limitations of the study.

Chapter 3: Research Method

Introduction

Thirty states have made online classes available (Watson et al., 2010). Children are taught how to read and write without face to face interaction with their teachers and peers. Pennsylvania students have had access to online schools since 2000 and currently have 11 online charter schools teaching Grades K-12 with over 19,000 students enrolled (Benefield & Runk, 2009). Limited research has been conducted to determine if there are differences in social skills when attending school online as compared to traditional school. The purpose of this study was to determine if there are any differences in social skills between students in online schools and those in traditional schools.

Online schools in Pennsylvania, where this study focused, must meet the same accountability requirements as traditional schools (Benefield & Runk, 2008). They are monitored by the Pennsylvania Department of Education annually to ensure compliance with state laws and regulations (Benefield & Runk, 2008). Online students must attend school the same as traditional studenst with a minimum requirement of 180 days and 900 hours, or 990 hours for Grades 7–12. Teachers must meet the same certification requirements and approximately 96% are certified (Benefield & Runk, 2008).

Pennsylvania online students must also take the same state test as traditional students: the Pennsylvania System of School Assessment (PSSA). In the 2006-2007 school year, Pennsylvania charter schools met 64 of 78 academic Adequate Yearly Progress targets and continue to have satisfactory academic achievement scores despite the high percentage of low-income students (Benefield & Runk, 2008). Pennsylvania

online charter schools must meet the accountability measures or face having their charter revoked or denied when they periodically seek to renew it with the Pennsylvania Department of Education. (Benefield & Runk, 2008).

In Pennsylvania, for the 2006-2007 school year, 30% of online school students came from school districts that failed to meet the Adequate Yearly Progress requirements (Benefield & Runk, 2008). Dissatisfaction with their traditional schools was not the only reason for enrollment in online schools, however. For the 2005–2006 school year, 43% of students in online schools came from low-income families and 11% of students were in special education classes. There were 9% more low-income students in online schools than the state average and 3.9% fewer special education students for the 2005-2006 school year in Pennsylvania (Benefield & Runk, 2008).

Design

The following study was a quantitative survey study that compared the social skills of traditional and online learning students to determine if there were any significant differences. The independent variable was school type and the dependent variable was the social skills score as measured by the social skills inventory (SSI). Students participated by completing the SSI online. Additional demographic information was gathered and correlated including years spent learning online and hours participating in extracurricular activities.

My role was to administer and collect the consent forms and the data. I communicated with community partners involved in the study, and analyzed and presented the findings of the study. Quantitative studies are useful to understanding

social skills compentency in high school students. There were no time or resource constraints. I obtained consent from Walden University's IRB and was assigned approval #08-22-14-0030856.

Participants

For the purpose of this study, high school students in Grades 9–12 who were currently residing in Pennsylvania and had no reading disabilities were considered. Participants were obtained through the use of Qualtrics. A panels team at Qualtrics, LLC contacted participants who currently lived in Pennsylvania and attended high school, Grades 9–12. Due to the large number of schools and also of high school students living in Pennsylvania, the participants were selected using probability sampling. Participants were asked to answer exclusion criteria questions (see Appendix A). Upon successfully completing the exclusion questions, they were provided with the weblink to the SSI located at mindgarden.com.

Measures

Social Skills Inventory- The Social Skills Inventory (SSI), by Ronald E. Riggio, (Hirokawa et al., 2004) is a self-report inventory published in 2002 that is used to measure a person's ability to communicate both verbally and nonverbally. . It can be completed online or on paper. The SSI requires an eighth grade reading level and generally takes 30-40 minutes to complete. Six scales on the SSI each contain 15 questions for a total of 90. Emotional expressivity (a = 0.55) measures how a person sends emotional messages, including attitude and their interpersonal orientation. Emotional sensitivity (a = 0.78) measures how well a person understands the nonverbal

communication of others. Emotional control (a = 0.82) measures a person's ability to regulate nonverbal and emotional displays. Social expressivity (a = 0.90) measures how a person rates themselves on sociabilty as well as the ability to express themselves on a verbal level. Social sensitivity (a = 0.74) is the ability to understand verbal communication of others. Social control (a = 0.78) measures the ability to engage in role-play and control of self-presentation. The inventory uses a Likert scale with 1 representing *never true* and 5 representing *always true.* Scoring is done automatically through the website, www.mindgarden.com, and is broken down into a total overall score and the six scales (Hirokawa et al., 2004).

Reliability of the subscales ranges from .81 to .96 for test-retest (alpha) and .62 to .87 for internal consistency (Riggio 1999). Convergent and discriminate validity were determined through correlations with similar social inventories such as Affection Communication Test and the Self-Monitoring Scale (Riggio 1999). The Social Control, Social Expressivity, Emotional Expressivity, Emotional Control, and Emotional Sensitivity subscales showed significantly positive correlation with extraversion ($p<.001$) (Riggio 1986).

Permission to use the SSI was granted through mindgarden.com after purchasing licenses (Appendix B). The SSI is appropriate for use in this study because the participants in the study are able to read at an eighth grade level. Students with reading difficulties were excluded from the study. The SSI is also suitable for high school students due to its short completion time and the ease of using a Likert scale.

Demographic data - In addition to the SSI, additional information was obtained. Data on age, race, gender, number of siblings, how many years the student has been attending online school, and hours spent on extracurricular activities were collected. This information was collected at the beginning of the SSI on a demographics questionnaire (see Appendix C) .

Procedures

I contacted Qualtrics by telephone and discussed the participants needed for the study. Qualtrics worked with their panels team to obtain participants. I set up the inclusion questions using a Qualtrics free account. The panels team at Qualtrics sent the link to the inclusion questions to potential participants using probability sampling. If the participants met all the inclusion criteria, they were provided a link to the demographics questionnaire and SSI at the Mindgarden website.

Upon clicking on the link to Mindgarden, the participant and their parent were presented withthe parental consent (see Appendix D) and student assent forms (see Appendix E). The parent provided consent electronically followed by the student. If either the parent or student declined, the SSI was not be presented to the student. All survey responses were collected and stored at the mindgarden.com location.

Data Analysis

The primary focus of the present analyses was to assess developmental differences between students who attended traditional schools and students that opt for online education by examining their SSI results. The primary independent variable is school type (online versus traditional), and average differences between these two groups

were assessed via independent samples *t* tests. Although these tests may identify simple average differences, age is a possible confounding factor correlated with developmental level. Therefore, in addition to simply describing actual group differences (independent samples *t* tests), additional models were examined that statistically equate groups on age (ANCOVA models with age as a covariate in mean deviation form, and dummy coded school type (0 = *traditional*, 1 = *online*) as a predictor of SSI).

In the study, students' developmental level and online education history were assessed at a single point in time. Thus, it was inevitable that substantial variation in the amount of online education would be present within the online education group. In the traditional education group, it seemed likely that little if any history of online training would have occurred. I expected little or no difference for those online students who recently switched to online education. If any deviation from the traditional school average did exist for those students, it could not be associated with time spent in online instruction per se, but rather to some other confounding factor(s) associated with school type category. Assessing the amount of online education (primarily within the online group) allowed additional analyses relating developmental level to the amount of online training. Since simple correlations between amount of online training and developmental level would have confounded effects of amount of online training with effects of school type membership, these analyses assessed the association entirely within the online group. As with the simple analyses described above, age was still a possible confounding factor that was controlled for.

In order to assess the effect of the amount of online training, the ANCOVA model above was augmented to include "ONTIME", the number of years of online education, as a predictor. Once again, the other predictors in this model were Age (in mean deviation form) and dummy coded school type (0 = *traditional*, 1 = *online*). When this set of predictors were included in the model using the coding scheme described above, the effect for ONTIME specifically assessed the correlation between the amount of years of online education and developmental level within the online education group. Since school type is in the model, this correlation was not confounded with the difference between school types generally. It is worth noting that the effect for school type in this latter model refers to the average difference between traditional and online education groups for students who have not had any online training yet (i.e., for ONTIME= 0). Once again, any difference between education groups for theoretical cases with no online training yet cannot be attributed to years in online training per se, but rather to possible confounding factors. So, by including ONTIME in the model, we made the effect for school type "go away" if this effect was driven entirely by years of online training and not by some other undetermined confounding factor.

In addition to evaluating the relationships between school type, years of online training, and age and the SSI dependent variables, an extracurricular activities dependent variable (hours of ECA) was also examined. The predictors and models described above were repeated for this dependent variable.

Sample sizes for the present study were based on evaluating power for a simple 2-group linear model contrast. For a *t* test assessing the difference between two

independent means with an effect size d of 0.5, power of .80, and type 1 error rate of .05, a total sample size of 128 was needed. This was calculated using G-Power.

Data from all respondents was stored on the mindgarden.com website. All data is anonymous with no manner of identifying the student. The researcher is the only person who has access to the data. A username and password is required to access the data. Data will be destroyed December 31st, 2016 by the researcher.

Summary

The panels team at Qualtrics randomly selected high school students living in Pennsylvania to complete the SSI using probability sampling. Consent for participation was obtained from the parents. Assent from the student was also obtained. After completion of both the consent and assent forms, brief demographic information was collected. The student was then administered the survey online at mindgarden.com. Data was analyzed and stored anonymously through the mindgarden.com website.

The following chapter presents the analyse of the hypothesis as presented in Chapter 3. The procedures used to analyse data for each hypothesis are reviewed. Tables are used to represent data for ease of reference. The results of all hypothesis are identified.

Chapter 4: Results

Introduction

The aim of this research was to explore social skills development in high school students. Specifically, the purpose of this study was to identify if there are any significant differences between students who attend high school online and students who attend a traditional high school. The following chapter presents the outcomes of the data acquired from the study. The procedures of the study are expanded upon in this chapter. Demographics as well as an analysis of the research questions are presented. Several tables of data analysis are also shown.

Data Analysis Procedure

Data were collected from 4/1/2015 through 4/15/2015. Qualtrics Inc. recruited students through their panels team via email. Incomplete responses were not included in the analysis. A total of 141 students completed the survey in its entirety and the data was analyzed and described below. The survey was administered as presented in Chapter 3 and no changes were made. There were no adverse events noted.

Inferential statistics were used to draw conclusions from the sample tested. The Statistical Package for the Social Sciences (SPSS) was used to code and tabulate scores collected from the survey and provide summarized values, where applicable, including the mean, central tendency, variance, and standard deviation. Analysis of variance (ANOVA) and analyses of covariance (ANCOVA) were used to evaluate the three research questions. The research questions were:

Null Hypothesis 1: There are no significant differences in students' social competency scores between school types (online, traditional).

Alternative Hypothesis 1: There are significant differences in students' social competency scores between school types (online, traditional).

Null Hypothesis 2: There are no significant differences in students' social competency scores between school types (online, traditional), after controlling for age.

Alternative Hypothesis 2: There are significant differences in students' social competency scores between school types (online, traditional), after controlling for age.

Null Hypothesis 3: There are no significant differences in students' social competency scores between school types (online, traditional), after controlling for age and the number of years enrolled in their current school type.

Alternative Hypothesis 3: There are significant differences in students' social competency scores between school types (online, traditional), after controlling for age and the number of years enrolled in their current school type.

Prior to analyzing the research questions, data screening was undertaken to ensure the variables of interest met appropriate statistical assumptions. Thus, the following analyses were assessed using an analytic strategy in that the variables were first evaluated for missing data, univariate outliers, normality, linearity, and homogeneity of variance. Finally, ANOVA and ANCOVA analyses were run to determine if any relationships existed between the variables of interest (see Table 1).

Table 1

Variables and Statistical Tests Used to Evaluate Research Questions 1-3

Research question	Dependent variable	Independent variable	Covariate	Analysis
RQ1	Overall SSI	School Type		ANOVA
RQ2	Overall SSI	School Type	Age	ANCOVA
RQ3	Overall SSI	School Type	Age and Number of Years Attending Current School Type	ANCOVA

Demographics

Data were collected from a valid sample of 141 high school students currently residing in Pennsylvania. Specifically, the majority of participants were female (56.0%, $n = 79$) and the remaining 44% were male ($n = 62$). Additionally, 80% of the participants attended traditional schools ($n = 113$) and the remaining 20% of the participants attended online schools ($n = 28$). Displayed in Table 2 are frequency and percent statistics of participants' gender and the type of school they attended. The sample was randomly selected by a Qualtrics panel team.

Table 2

Frequency and Percent Statistics of Participants' Gender and Type of School

Demographic	Frequency (*n*)	Percent (%)
Gender		
Male	62	44.0
Female	79	56.0
Total	141	100.0
Type of School		
Online	28	19.9
Traditional	113	80.1
Total	141	100.0

Ethnicity of participants was presented below in Table 3. The majority of the sample was Caucasian (79.4%, *n* = 112). African American students consisted of 7.8% of the sample (*n* = 11) and 4.3% of the sample were Asian (*n* = 6). Hispanic students represented 6.4% of the participants (*n* = 9). A small number of students selected "Other," representing 2.1% of the sample (*n* = 3).

Table 3

Frequency and Percent Statistics of Participants' Ethnicity

Demographic	Frequency (*n*)	Percent (%)
Ethnicity		
Caucasian	112	79.4
African American	11	7.8
Asian	6	4.3
Hispanic	9	6.4
Other	3	2.1
Total	141	100.0
Other		
Bi-racial	1	0.7
Mixed	1	0.7
Hispanic/Latina	1	0.7

Data on the amount of time students spent engaged in extracurricular activities and number of siblings was also gathered. The results were -presented in Table 4. The majority of students identified spending 3–4 hours per week in extracurricular activities (27.7%, *n* = 39). Few students selected 0 hours per week (3.5%, *n* = 5). There were 14.9% of students choosing "more than 15 hours" (*n* = 21).

Students with 2 siblings represented the most common response (31.2%, *n* = 44). Several students reported having no siblings (14.9%, *n* = 21). Only 0.7% reported having

12 siblings (n = 1). Students with 1 sibling was also common (24.1%, n = 34). Several students also reported having 3 siblings (18.4%, n = 26).

Table 4

Frequency and Percent Statistics of Participants'

Demographic	Frequency (n)	Percent (%)
Number of hours spent doing activities		
0 hours	5	3.5
1 - 2 hours	12	8.5
3 - 4 hours	39	27.7
5 - 6 hours	28	19.9
7 - 10 hours	24	17.0
11 - 15 hours	12	8.5
More than 15 hours	21	14.9
Total	141	100.0
Number of siblings		
0 siblings	21	14.9
1 siblings	34	24.1
2 siblings	44	31.2
3 siblings	26	18.4
4 siblings	9	6.4
5 siblings	4	2.8
7 siblings	2	1.4
12 siblings	1	0.7
Total	141	100.0

Students were asked what grade they began attending their current school. The results are displayed below in Table 5. Many students began attending their current school in 9th grade (41.8%, n = 59). A large number of students also began their current school in Kindergarten (16.3%, n = 23). Students beginning their current school in 10th grade made up 14.9% of the population (n = 21). Other grades were seen less common within the sample.

Table 5

Frequency and Percent Statistics of the Grade Levels that Participants Began Attending their Current School

Grade began at current school	Frequency (*n*)	Percent (%)
Kindergarten	23	16.3
1st grade	5	3.5
2nd grade	0	0.0
3rd grade	0	0.0
4th grade	2	1.4
5th grade	1	0.7
6th grade	5	3.5
7th grade	9	6.4
8th grade	4	2.8
9th grade	59	41.8
10th grade	21	14.9
11th grade	8	5.7
12th grade	4	2.8
Total	141	100.0

The participants' current ages ranged between 13 and 18 years and had an average age of 15.88 (*SD* = 1.24). The ages at which the participants began attending their current schools ranged between 5 and 17 years old with an average age of 11.94 years (*SD* = 3.93). Furthermore, the number of years that participants had attended their current school type range between less than one year to 13 years with a mean of 3.94 years (*SD* = 3.98). Descriptive statistics of participants' current age, age that they began attending their current school type, and the number of years enrolled at current school type are displayed in Table 6.

Table 6

Descriptive Statistics of Participants' Current Age, Age they began at Current School Type, and the Number of Years Enrolled at Current School Type

Demographic	Min	Max	Mean	Std. Deviation
Current Age	13	18	15.88	1.24
Age began at Current School	5	17	11.94	3.93
Number of Years Enrolled at Current School Type	0	13	3.94	3.98

Note. $N = 141$

Additional Demographics

To determine whether there were significant differences in participants' gender, ethnicity, age and number of years enrolled at current school existed between school types, chi-squared tests of independence and independence-samples *t* test were conducted. Specifically, the majority of participants in both online and traditional school types were female (online 57.1%, traditional 55.8%). Similarly, the majority of participants were Caucasion at both online schools (67.9%, $n = 19$) and traditional schools (82.3%, $n = 93$). A cross tabulation of participants' gender and ethnicity is displayed in Table 7 by school types.

Table 7

Cross Tabulation of Participants' Gender and Ethnicity by School Types

Demographic	Online		Traditional		Total	
	Frequency (*n*)	Percent (%)	Frequency (*n*)	Percent (%)	Frequency (*n*)	Percent (%)
Gender						
Male	12	42.9	50	44.2	62	44.0
Female	16	57.1	63	55.8	79	56.0
Total	28	100.0	113	100.0	141	100.0
Ethnicity						
Caucasian	19	67.9	93	82.3	112	79.4
African American	4	14.3	7	6.2	11	7.8
Asian	1	3.6	5	4.4	6	4.3
Hispanic	3	10.7	6	5.3	9	6.4
Other	1	3.6	2	1.8	3	2.1
Total	28	100.0	113	100.0	141	100.0

Note. $N = 141$

Students at online schools were older ($M = 16.357$, $SD = 1.283$) than students at traditional schools ($M = 15.761$, $SD = 1.205$). Conversly, students at online schools had been enrolled for a shorter period of time ($M = 3.179$, $SD = 3.570$) compared to students at traditional schools ($M = 4.124$, $SD = 4.065$). Displayed in Table 8 are descriptive statistics of students' current age and number of years enrolled at current school by online and traditional school types.

Table 8

Descriptive Statistics of Online and Traditional Students' Current Age and Number of Years Enrolled at Current School

Demographic	*N*	Min	Max	Mean	Std. Deviation	Skewness	Kurtosis
Online School							
Current Age	28	14	18	16.357	1.283	-0.281	-1.130
Number of Years Enrolled	28	0	12	3.179	3.570	1.594	1.318
Traditional							
Current Age	113	13	18	15.761	1.205	-0.275	-0.227
Number of Years Enrolled	113	0	13	4.124	4.065	0.939	-0.653

Note. $N = 141$

Results of Chi-squared Tests of Independence

Using SPSS 23, two chi-squared tests of independence were conducted to determine if any significant differences in participants' gender and ethnicity existed between school types (online, traditional). Results indicated that there were no significant differences in participants' gender and school type, *Continuity correction*$(1, N = 141) < .001$, $p > .999$. Additionally, there were no significant differences in participants' ethnicity and school type, $\chi^2(4, N = 141) = 3.880$, $p = .423$. Displayed in Table 9 are summary details of the two chi-squared tests.

Table 9

Summary of Chi-squared Tests Conducted between Gender, Ethnicity and School Type

Independent variable	Continuity correction / Pearson chi-square (χ^2)	df	Sig. (p)
Gender[a]	< .001	1	> .999
Ethnicity	3.880	4	.423

Note. Dependent variable = school type (online, traditional); $N = 141$

a. Continuity correction is computed for 2x2 table rather than Pearson correlation

Results of Independent-samples *t* tests

Using SPSS 23, two independent-samples *t* tests were conducted to determine if any significant differences in participants' age and number of years enrolled at current school existed between school types (online, traditional). Results indicated that there were significant differences in participants' age between those who attended online schools and those who attended traditional schools, $t(139, N = 141) = 2.314$, $p = .022$. That is, students that attended online schools were significantly older ($M = 16.357$, $SD = 1.283$) compared to those that attended traditional schools ($M = 15.761$, $SD = 1.205$). Results from the second *t* test indicated that there were no significant differences in students' number of years enrolled by school types, $t(139, N = 141) = -1.127$, $p = .262$. Displayed in Table 10 are summary details of the independent-samples *t* tests.

Table 10

Summary of Independent-samples t tests of Participants' Age, Number of Years Enrolled, and School Types

	Levene's test for equality of variances				*t* test for equality of means		
Dependent variable	F	Sig. (*p*)	Mean difference	Std. error difference	T	df	Sig. (*p*)
Current Age	1.091	.298	0.596	0.258	2.314	139	.022
Number of Years Enrolled at Current School Type	3.180	.077	-0.945	0.839	-1.127	139	.262

Note. Independent variable = school type (online, traditional); $N = 141$

Reliability Analysis

Reliability analysis was run to determine if the dependent variable (overall SSI) was sufficiently reliable. The dependent variable was measured by 90 items on the

Social Skills Inventory (SSI). Reliability analysis allows one to study the properties of measurement scales and the items that compose the scales (Tabachnick & Fidell, 2007). Cronbach's alpha reliability analysis procedure calculates a reliability coefficient that ranges between 0 and 1. The reliability coefficient is based on the average inter-item correlation. Scale reliability is assumed if the coefficient is ≥.60. Results from the tests found that the dependent variable was sufficiently reliable, *Cronbach's alpha* = .934, *N* = 141. Thus, the assumption of reliability was not violated and the variable constructs were used to evaluate the research question.

Analysis of Research Questions 1-3

Research questions 1-3 were evaluated using ANOVA (research question 1) and ANCOVA (research questions 2 and 3) to determine if any significant differences in social competency existed between students that attended traditional schools and students that attended online schools, after controlling for age and the number years enrolled in their current school type. The dependent variable was participants' overall social competency scores as measured by 90-items on the *Social Skills Inventory* (SSI). Response parameters were measured on a 5-point scale where 1 = *not at all like me*, 2 = *a little like me*, 3 = *like me*, 4 = *very much like me*, and 5 = *exactly like me*. Composite scores were calculated by summing case scores across the 90 survey items resulting in a possible range of scores between 90 and 450. That is, higher scores indicated higher levels of social competency. The composite scores were used as the dependent variable to evaluate research questions 1-3.

The independent variable for research questions 1-3 was the type of school that the students attended. That is, participants were placed into two groups depending on their current schools' type: online schools (n = 28) and traditional schools (n = 113). The covariate used in research question 2 was participants' current age. The covariate used in research question 3 was the number of years that participants were enrolled in their current school type.

Data Cleaning

Before the assumptions were assessed, the data were screened for missing data and univariate outliers. Missing data were investigated using frequency counts and no cases were found. However, one participant stated they had difficulty reading and was removed from the analyses of research questions 1-3.

The data were screened for univariate outliers by transforming raw scores to z-scores and comparing z-scores to a critical value of +/- 3.29, $p < .001$ (Tabachnick & Fidell, 2007). Z-scores that exceed this critical value are more than three standard deviations away from the mean and thus represent outliers. The distributions were evaluated and no cases with univariate outliers were found. Thus, 142 responses from participants were received and 141 were evaluated by the ANOVA and ANCOVA models (n = 141). Descriptive statistics of participants' overall SSI scores are displayed in Table 11 by school types.

Table 11

Descriptive Statistics of Participants' Overall SSI Scores by School Types

Overall SSI	*N*	Min	Max	Mean	Std. deviation	Skewness	Kurtosis
School Type							
Online School	28	211	305	260.11	26.97	-0.09	-1.02
Traditional School	113	190	360	274.03	32.45	0.06	-0.17

Note. $N = 141$

Normality

Before the research questions was analyzed, basic parametric assumptions were assessed. That is, for the dependent variable (overall SSI) assumptions of normality and homogeneity of variance were tested. To test if the distributions were normally distributed, the skew and kurtosis coefficients were divided by the skew/kurtosis standard errors, resulting in z-skew/z-kurtosis coefficients. This technique was recommended by Tabachnick and Fidell (2007). Specifically, *z*-skew/*z*-kurtosis coefficients exceeding the critical range between -3.29 and +3.29 ($p < .001$) may indicate non-normality. Thus, based on the evaluation of the *z*-skew/*z*-kurtosis coefficients, no distributions exceeded the critical range. Therefore, the assumption of normality was not violated and the distributions were assumed to be normally distributed. Skewness and kurtosis statistics of participants' overall SSI scores are displayed in Table 12 by school types.

Table 12

Skewness and Kurtosis Statistics of Participants' Overall SSI Scores by School Types

Overall SSI	*N*	Skewness	Skew Std. error	*z*-skew	Kurtosis	Kurtosis std. error	z-kurtosis
School Type							
Online School	28	-0.09	0.44	-0.19	-1.02	0.86	-1.19
Traditional School	113	0.06	0.23	0.26	-0.17	0.45	-0.39

Note. $n = 141$

Homogeneity of Variance

Levene's Test of Equality of Error Variance was run to determine if the error variances of the dependent variable (overall SSI) was equal across levels of the independent variable (type of school). Results indicated that the dependent variable did not violate the assumption of homogeneity of variance ($p > .05$). These results suggest that the error variances were equally distributed across levels of the independent variable. Displayed in Table 13 are summary details of the Levene's test for research questions 1-3.

Table 13

Summary of Levene's Tests for Research Questions 1-3

Research Question	F	df1	df2	Sig. (*p*)
RQ1	1.03	1	139	.31
RQ2	1.00	1	139	.32
RQ3	0.96	1	139	.33

Note. $n = 141$

Independence of the Covariate and Treatment effect

The assumption of independence of the covariate and treatment effect was tested using independent-samples *t* tests. The covariates (current age and number of years

enrolled at current school type) were used as the dependent variables for the *t* tests and the independent variable was school type (online, traditional). Results from the *t* tests indicated that significant differences in participants' current age did exist between school types, $t(139) = 2.31$, $p = .02$. Therefore, the assumption of independence of the covariate and treatment effect was violated for the first covariate (current age). Results from the second *t* test indicated there were no significant differences in participants' number of years enrolled at current school between school types, $t(139) = 2.314$, $p = .262$. Thus, the assumption was not violated.

Homogeneity of Regression Slopes

The assumption of homogeneity of regression slopes was conducted using scatterplots to determine whether the regression slopes significantly deviated from parallelism. Additionally, custom model ANCOVA analyses were used to test the interaction between the independent variable (school type) and covariates (current age and number of years enrolled at current school type). Results from the scatterplot between overall SSI and current age indicated that the regression slopes did not appear to deviate from parallelism—see Figure 1. Furthermore, results from the custom model ANCOVA indicated that there was no significant interaction between school types and current age, $F(1, 137) = 0.24$, $p = .63$. Thus, the covariate (current age) did not violate the assumption of homogeneity of regression slopes.

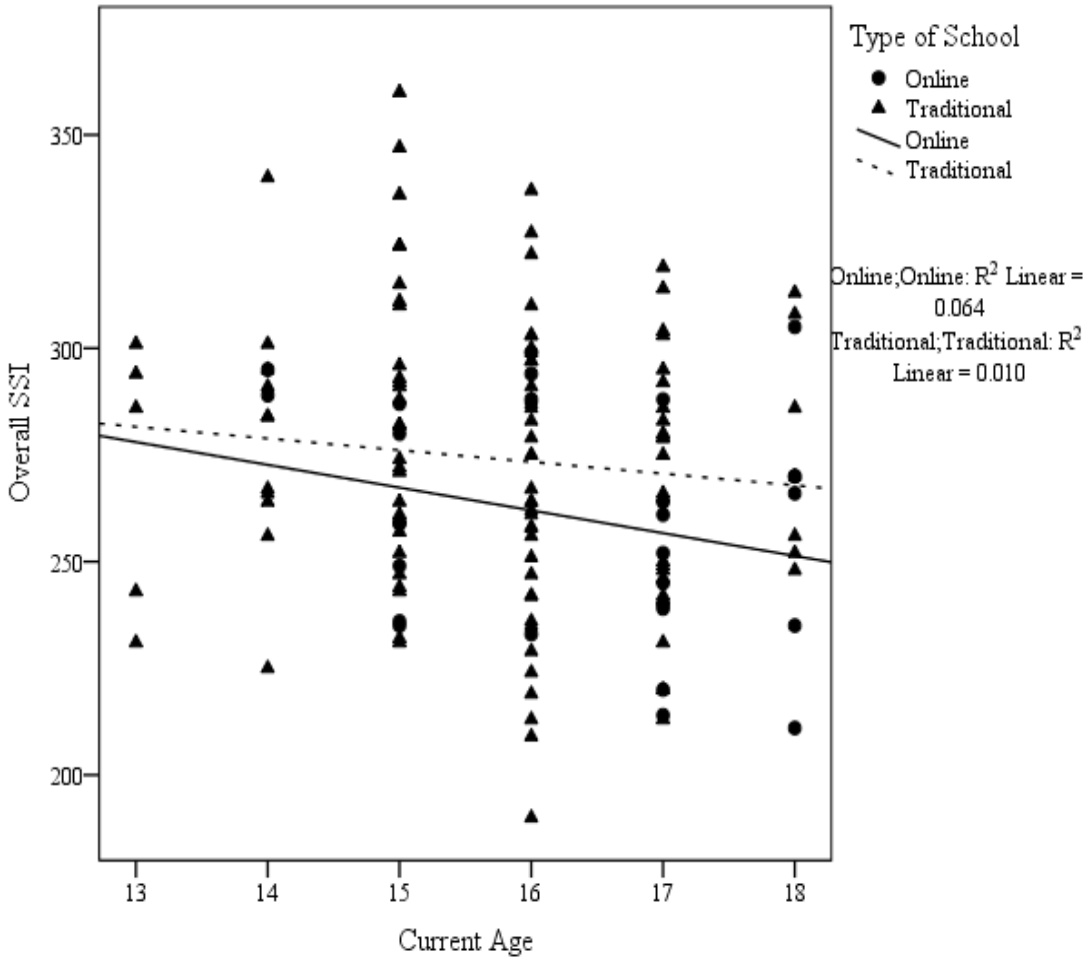

Figure 1. Scatterplot of participants' overall SSI scores and current age by school types

Results from the scatterplot between overall SSI and number of years enrolled at current school indicated that the regression slopes may have appeared to deviate from parallelism—see Figure 2. However, results from the custom model ANCOVA indicated that there was no significant interaction between school types and years enrolled at current school, $F(1, 137) = 1.25$, $p = .26$. Thus, the covariate (number of years enrolled

at current school type) did not violate the assumption of homogeneity of regression slopes.

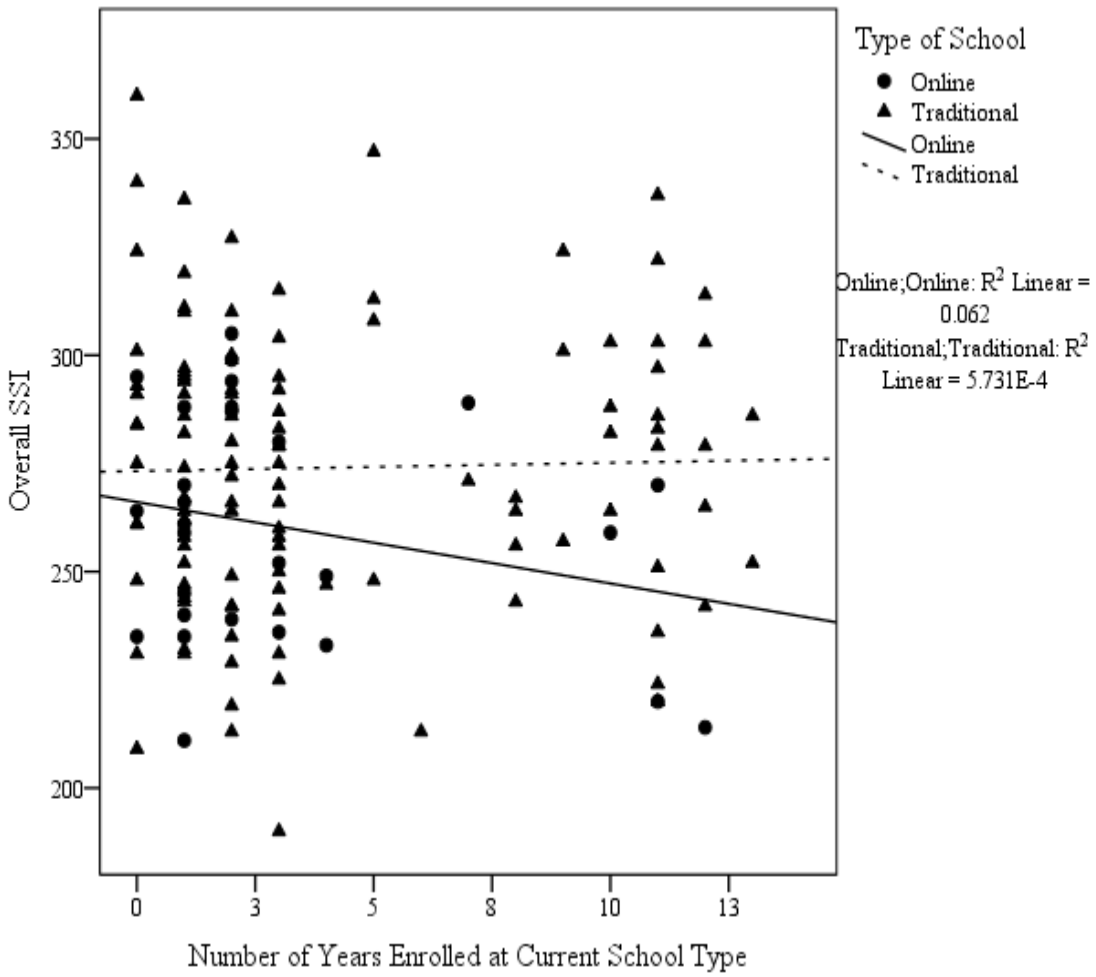

Figure 2. Scatterplot of participants' overall SSI scores and number of years enrolled by school types

Results of Hypothesis 1

Null Hypothesis 1 ($H1_0$): There are no significant differences in students' social competency scores between school types (online, traditional).

Alternative Hypothesis 1 ($H1_a$): There are significant differences in students' social competency scores between school types (online, traditional).

Using SPSS 22, analysis of variance (ANOVA) was used to determine if any significant differences in students' social competency scores existed between school types (online, traditional). Results indicated that there were significant differences in students' overall SSI scores between school types, $F(1, 139) = 4.39$, $p. = .04$, $\eta^2 = .03$. Thus, the null hypothesis for research question 1 was rejected in favor of the alternative hypothesis. A model summary of the ANOVA analysis was displayed in Table 14.

Table 14

Model Summary of the ANOVA Analysis for Research Question 1

Source	Type III sum of squares	df	Mean square	F	Sig. (p)	Partial eta squared (η^2)	Observed power
Corrected Model	4347.69	1	4347.69	4.39	0.04	0.03	0.55
Intercept	6402024.15	1	6402024.15	6468.59	0.00	0.98	1.00
School Type	4347.69	1	4347.69	4.39	0.04	0.03	0.55
Error	137569.60	139	989.71				
Total	10517162.00	141					
Corrected Total	141917.29	140					

Note. Dependent variable = overall SSI; $N = 141$

Results from the ANOVA analysis revealed that students' social competency scores were significantly different across school types. That is, students in traditional

schools had significantly higher social competence scores (M = 274.03, SD = 32.45) as compared to students at online schools (M = 260.11, SD = 26.97). Displayed in Figure 3 was a means plot of students' overall SSI scores by school types.

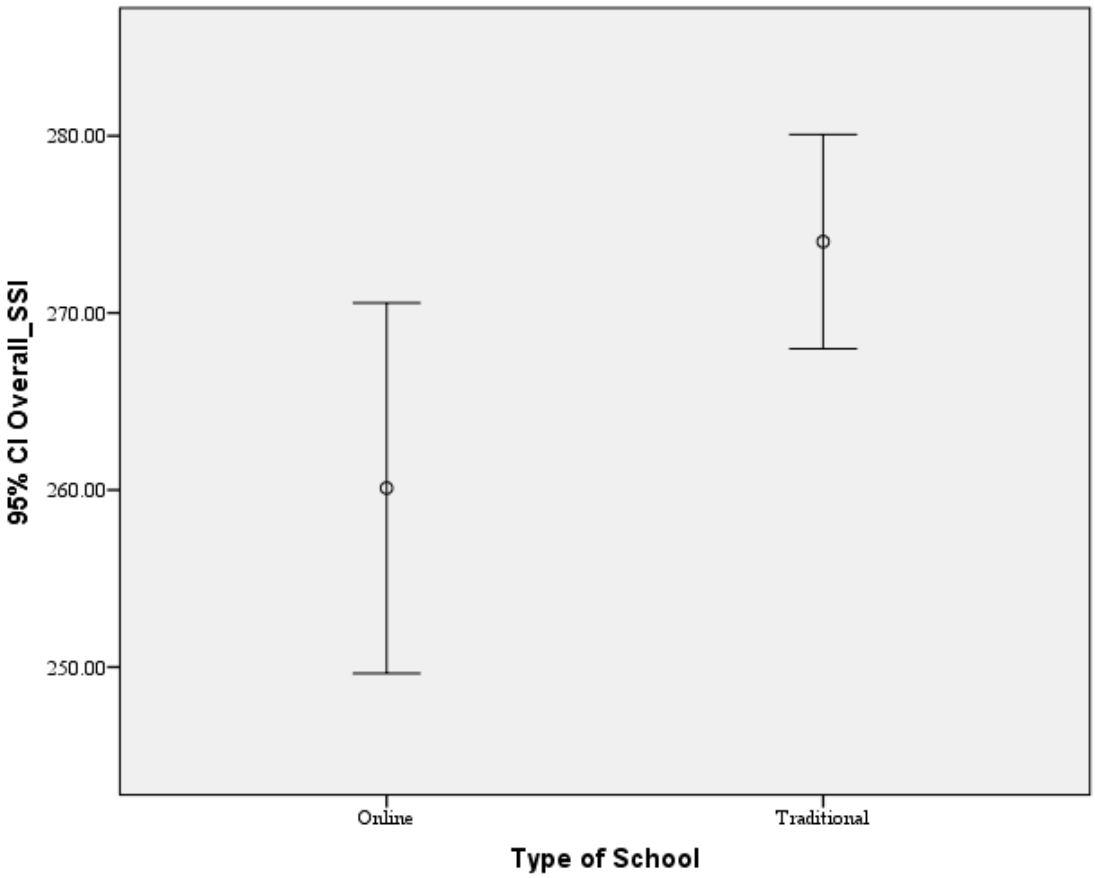

Figure 3. Means plot with standard deviation of students' overall SSI scores by school types

Results of Hypothesis 2

Null Hypothesis 2 ($H1_0$): There are no significant differences in students' social competency scores between school types (online, traditional), after controlling for age.

Alternative Hypothesis 2 ($H1_a$): There are significant differences in students' social competency scores between school types (online, traditional), after controlling for age.

Analysis of covariance (ANCOVA) was used to determine if any significant differences in students' social competency scores existed between school types (online, traditional) after controlling for age. Results indicated that after controlling for age there were no significant differences in students' overall SSI scores between school types, $F(1, 138) = 3.15$, $p. = .08$, $\eta^2 = .02$. Current age did not affect overall SSI; $F(1, 138) = 2.30$, $p. = .13$, $\eta^2 = .02$. This means that there was not a stistically significant difference in overall SSI scores between current age groups. Thus, the null hypothesis for research question 2 was retained. A model summary of the ANOVA analysis was displayed in Table 15.

Table 15

Model Summary of the ANOVA Analysis for Research Question 2

Source	Type III sum of squares	df	Mean square	F	Sig. (*p*)	Partial eta squared	Observed power
Corrected Model	6603.85	2	3301.93	3.37	0.04	0.05	0.63
Intercept	81498.85	1	81498.85	83.12	0.00	0.38	1.00
Current Age	2256.16	1	2256.16	2.30	0.13	0.02	0.33
School Type	3086.30	1	3086.30	3.15	0.08	0.02	0.42
Error	135313.44	138	980.53				
Total	10517162.00	141					
Corrected Total	141917.29	140					

Note. Dependent variable = overall SSI; $N = 141$

Results of Hypothesis 3

Null Hypothesis 3 ($H3_0$): There are no significant differences in students' social competency scores between school types (online, traditional), after controlling for age and the number of years enrolled in their current school type.

Alternative Hypothesis 3 ($H3_a$): There are significant differences in students' social competency scores between school types (online, traditional), after controlling for age and the number of years enrolled in their current school type.

Analysis of covariance (ANCOVA) was used to determine if any significant differences in students' social competency scores existed between school types (online, traditional) after controlling for age and the number of years enrolled in their current school type. Results indicated that after controlling for age and the number of years enrolled in their current school type, there were no significant differences in students' overall SSI scores between school types, $F(1, 137) = 3.01$, $p. = .09$, $\eta^2 = .02$. Current age did not affect overall SSI; $F(1, 137) = 2.23$, $p. = .14$, $\eta^2 = .02$. This means that there was

not a stistically significant difference in overall SSI scores between current age groups. Number of years enrolled did not affect overall SSI; $F(1, 137) = .02$, $p. = .90$, $\eta^2 < .001$. This means that there was not a stistically significant difference in overall SSI scores between number of years enrolled. Thus, the null hypothesis for research question 3 was retained. A model summary of the ANCOVA analysis was displayed in Table 16.

Table 16

Model Summary of the ANCOVA Analysis for Research Question 3

Source	Type III sum of squares	df	Mean square	F	Sig. (*p*)	Partial eta squared	Observed power
Corrected Model	6619.33	3	2206.44	2.23	0.09	0.05	0.56
Intercept	80121.32	1	80121.32	81.13	0.00	0.37	1.00
Current Age	2199.90	1	2199.90	2.23	0.14	0.02	0.32
Number of Years Enrolled at	15.48	1	15.48	0.02	0.90	0.00	0.05
School Type	2969.72	1	2969.72	3.01	0.09	0.02	0.41
Error	135297.96	137	987.58				
Total	10517162.00	141					
Corrected Total	141917.29	140					

Note. Dependent variable = overall SSI; $N = 141$

Summary

The number of students attending high school online continues to increase. There is currently a lack of research that examines the impact of online learning on social skills (Cavanaugh, Barbour, & Clark, 2009, p. 13). This study hopes to add research to the current gap. The outcomes of this study can be used to develop future research and identify gaps in social learning for high school students.

The current study examined the social skills of 141 students. The majority of these students attend school in a traditional setting. All students in the sample lived in Pennsylvania during the time of the study. Chapter 4 presented data on the results of the survey. Several tables were utilized to streamline data. The research questions were presented and accepted or rejected based on the findings.

Table 17 below shows the results of the hypotheses. When comparing the online group to the traditional group there was a significant difference ($p = 0.04$). However, when controlling for age the results were no longer significant ($p = 0.08$). Additionally, when controlling for both age and number of years enrolled in the current school the results were also not significant ($p = 0.09$).

Table 17

Summary of Results for Hypotheses 1-3

Hypothesis	Dependent variable	Independent variable	Covariate	Analysis	Sig. (p)
H1	Overall SSI	School Type		ANOVA	0.04
H2	Overall SSI	School Type	Age	ANCOVA	0.08
H3	Overall SSI	School Type	Age and Number of Years Attending Current School Type	ANCOVA	0.09

Note. $N = 141$

Chapter 5 presents an interpretation of the results found in Chapter 4. It also discussed the social implications of the findings. Recommendations for actions and further study are also presented. The chapter will end by identifying limitations and an overall summary.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

In the 21st century, high school students are able to attend school virtually from their home computer. Researchers have not identified any significant differences between school type as far as academic achievement are concerned. Social skill differences have yet to be examined. Social skills competency is important for many important areas of life such as relationships, employment, mental health, and communication (Gresham et al., 2006). The theory of social learning suggests that social skills are acquired through observation of similarly aged peers (Bandura, 1977). Students who attend high school virtually may have fewer interactions with similar aged peers and as such may not develop the same level of social competence as traditional high school students.

The review of the literature indicated that traditional schools play a role in socialization (Merrell & Gruelder, 2010). Many social skills are modeled and learned in a traditional school setting (Tasmajian, 2002). There are limited face to face interactions for online high school students (Shoaf, 2007). Social skill development and limitations of peer to peer interactions are major concerns for online learners (Rice, 2006). There is currently a gap in research addressing social skills development of online high school students.

There are many reasons why social competency is an important factor of development. The ability to successfully communicate with others leads to healthy relationships (Gresham et al., 2006). Being able to understand social cues and express

feelings are also important for obtaining and maintaining employment (Gumpel, 2007). Inadequate social skills can also lead to mental health concerns such as depression (Meadan & Monda-Amaya, 2008). It is important to examine social skills development of online high school students to ensure that the students are not disadvantaged when obtaining social competency.

In this study, participants completed the Social Skills Inventory (SSI) online to measure their social competency. The research questions were designed to uncover differences in overall SSI scores between online and traditional school students. Significant differences (p = .04) were found when comparing the two school types. After controlling for age and time enrolled in current school type, the research indicated no significant differences.

Interpretation of Findings

In this study, a valid sample of 141 high school students currently residing in Pennsylvania completed the Social Skills Inventory. The sample included 28 online high school students and 113 traditional school students. Data was entered into the Statistical Package for the Social Sciences (SPSS 22.0) and was then tested using analyses of variance (ANOVA) and analyses of covariance (ANCOVA) to evaluate the research questions. Results of the research questions are summarized below.

Research Question 1

Results of research question 1 indicated that there were significant differences in students' overall SSI scores between school types. Students in traditional schools had significantly higher social competence scores as compared to students enrolled in online

schools. Thus, the null hypothesis for research question 1 was rejected in favor of the alternative hypothesis.

The results of this research question support Bandura's theory of social learning. Previous studies also expressed concern about the social skills development of online students. Rice, 2006, speculated that attending online schools may hinder the development of social competence. Shoaf, 2007, identified that lack of a physical classroom and face to face interaction with peers and their teacher may hinder social development. There are many concerns regarding the healthy development of social skills for students currently enrolled in online schools. The importance of developing these skills is significant in all areas of life and will help these students with relationships, employment, and overall health (Gresham et al., 2006).

These implications should be considered with the understanding that the sample size for the online group was small ($n = 28$) compared to the traditional student group ($n = 113$). Although all parametric assumptions were met prior to testing, this fact may mean that a representative sample was not obtained and findings reported invalid.

Research Question 2

Results of research question 2 indicated that after controlling for age there were no significant differences in students' overall SSI scores between school types. Thus, the null hypothesis for research question 2 was retained.

The results of this research question help to support online schools as a healthy alternative to traditional schools. Previous research supports learning from home and social skill development outside the traditional school setting. Francis & Keith, 2004,

found that students who are homeschooled have equal social competency when compared to traditional school peers. Online students and homeschool students both learn at home. Kearsley, 2000, also identified that online learners can achieve the same outcomes if provided the same learning materials, quality of teachers, and resources as their traditional school peers. The results of this research question help to support these studies.

Research Question 3

Results of research question 3 indicated that after controlling for age and the number of years enrolled in their current school type, there were no significant differences in students' overall SSI scores between school types. Thus, the null hypothesis for research question 3 was retained.

As with research question 2, research question 3 also supports online school as a viable method of education. Students who are attending online school for longer periods of time showed no significant differences in social competency when compared to traditional peers. This study only examined social skills of high school students. Longitudinal studies may be helpful in providing more details about social competency over time while enrolled in an online school.

The findings of research questions 2 and 3 contradict the theoretical framework used in this study. Bandura (1977) believed that social skills were developed by observing and imitating similar aged peers. Online high school students have less face to face time with similar aged peers than traditional school students. However, no

differences were found when comparing school type. This indicates that there are other factors that contribute to the development of adequate social skills. These factors should be identified and examined in further research.

Based on results from the analysis, students in traditional schools had significantly higher social competence compared to students at online schools. However, after controlling for age and number of years enrolled in current school type, there were no significant differences in SSI scores. The significant results should be inferred with caution due to a skewed population and a small sample size. Larger and stratified samples are recommended for future study.

These results validate the predictions that there would not be a difference in social competency based on school type. Bandura's theory postulates that face to face interaction is necessary for developing social competency (Bandura, 1977). Many years after Bandura's theory, the internet became a common utility in most homes. With the internet comes the use of many social media sites such as Facebook, Twitter, Myspace, Instagram, and Youtube. Could social media be a sufficient replacement for the missed face to face interaction in a traditional school setting? More research is needed to determine these implications.

Implications for Social Change

The results of this study suggest that school type alone is not a valid predictor of social skills development. It is difficult to determine how social development occurs in today's youth. The current study can be used as a pilot to direct future studies. The advances of technology have not only created a new type of school but also many venues

that can contribute to developing social competence. Social measurement tools are typically not updated to reflect these new technological advances. Accurate measure of social competence may be difficult to obtain. Besides school type and technology venues, additonal factors may also influence social development. Examples include home life stability, number of siblings, birth order, engagement in extracurricular activities, victim of bullying, domestic violence, culture, and income. Development of an all inclusive measure to help gauge the many factors that can contribute to social competency can be beneficial.

It is important to increase awareness on the critical nature of social skills development. Traditionally, schools focus on academic achievement and education. Yerklikaya, 2014, stated that communication of students is also important to the education process. Bullying is becoming a more frequent a topic of discussion at many schools. Many schools have limited resources when it comes to addressing bullying which causes academic and social disruption for all students within the school. There is currently a significant gap in research and more research is needed to help support the social development of today's youth. This study aims to create positive social change by acting as a pilot for future studies.

Recommendations for Further Study

As indicated above, it is important to today's youth to have more research on social development that considers the advances of technology. There are many factors that can contribute to the development of social competency. This study merely examined school type and differences in social skills competency. There are many other

factors to consider as social skills are developing. As previously noted, how is social media impacting the development of social skills?

The method for obtaining participants can be improved in future studies. Challenges were faced when attempting to enlist community partners from the online schools. Many online schools had to seek higher level approval to participate in studies and many were simply not interested. Having several online schools participating could help improve the number of responses from online students. Creating a measure for social competency that includes many of the above considerations can also provide great insight for future research.

It may also be beneficial to measure social skills using a longitudinal study. Measuring the social skills at age 5 for both school types and periodically every 2-3 years until the completion of high school could be beneficial to understanding different rates of social skills developments based on school type.

Recommendations for Action

The results of this research have identified no significant differences in social competency based on school type after controlling for age and time enrolled. This study can serve as a pilot that identifies a greater need for assessment and attention on current social skills measures and development. For educators, this indicates that online schooling showed no significant difference on social skill development of its' students. For parents, this can help alleviate concerns about socialization if they choose to enroll their child in an online school. High school students can feel confident that they are

developing equally to their traditional school peers. These results should be inferred with caution due to small sample size and uneven distribution.

Limitations

One of the limitations of the study is the difference in sample sizes between groups. Of the 141 participants, only 29 were from online schools. The participants were also limited to students residing in Pennsylvania. Future studies should be more balanced to strengthen findings. This research was conducted using a self-report inventory. Responses may have been biased towards self-selection and may not reflect the attitudes within the overall population (Pardo et al., 2010). Students completing the survey were of different ages. Some students may have developed sufficient social competence before entering online school. There are many factors that contribute to social skills development. This may contribute to the difficulty in pinpointing school type as a variable for social skills development. Students participating in the study may have misunderstood the question about years enrolled at current school. This may have affected the results of the study. This question should be reworded to allow for less confusion.

Summary

There are currently over 1 million students enrolled in online education (Watson, 2009). Limited research has been identified exploring the impact of online education on social skills development. Social skills are an important part of communication, relationships, employment, and good mental health (Gresham et al., 2006). Bandura (1977) postulates that social skills are developed through observation and mimicking of

similar aged peers. Online students lack the face to face interaction provided in a school setting. This study examined the social skills of students using the Social Skills Inventory. It was completed online and the data was analyzed using SPSS.

The results of this study show that after controlling for age and number of years enrolled in current school type, that there are no significant differences in overall SSI score. These findings indicate that the type of school a student attends has little to no impact on development of social skills. Further research needs to be performed to support these findings. Curiously, when face to face interaction is removed, social skills were not affected. These results contradict Bandura's social learning theory. What factors contribute to the adequate development of social skills for online students? This study is useful in developing further research to understand social skills development for high school students. The results of this study supports online high school as a viable alternative to traditional high school for social development.

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Appendix A: Exclusion Criteria

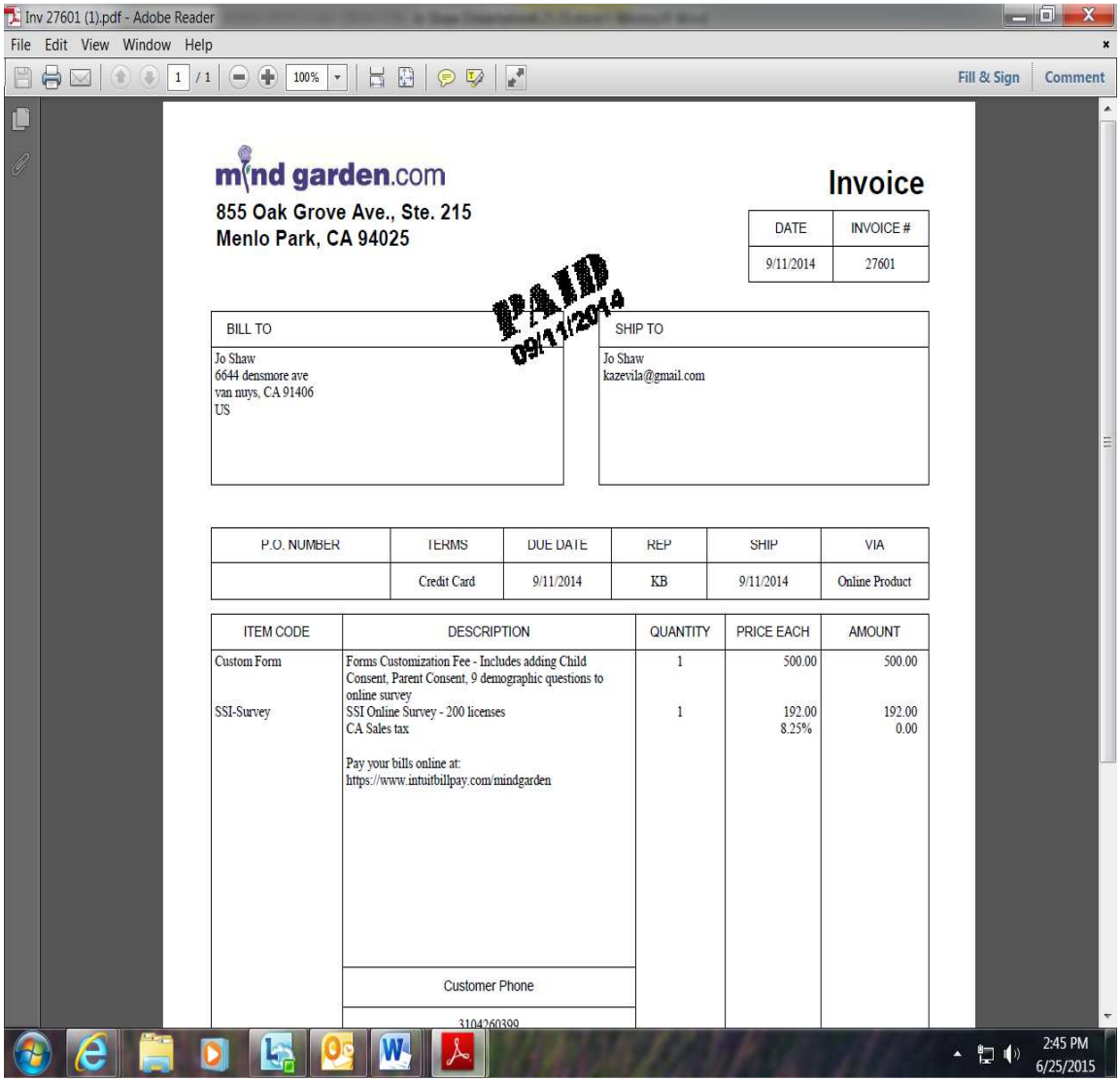
Are you a high school student living in Pennsylvania? Choices are yes or no. Inclusion if select yes, exclusion if select no.

Do you attend high school in-person or online? Choices are In-person, online, other. Inclusion if select Online or In-person, exclusion if select other.

Have you passed 8th grade? Choices are yes or no. Inclusion if select yes, exclusion if select no.

Do you have difficulties reading? Choices are yes or no. Inclusion if select no, exclusion if select yes.

Appendix B: Permission Letter for SSI



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mind garden.com
855 Oak Grove Ave., Ste. 215
Menlo Park, CA 94025

Invoice

DATE	INVOICE #
9/11/2014	27601

PAID 09/11/2014

BILL TO	SHIP TO
Jo Shaw 6644 densmore ave van nuys, CA 91406 US	Jo Shaw kazevila@gmail.com

P.O. NUMBER	TERMS	DUE DATE	REP	SHIP	VIA
	Credit Card	9/11/2014	KB	9/11/2014	Online Product

ITEM CODE	DESCRIPTION	QUANTITY	PRICE EACH	AMOUNT
Custom Form	Forms Customization Fee - Includes adding Child Consent, Parent Consent, 9 demographic questions to online survey	1	500.00	500.00
SSI-Survey	SSI Online Survey - 200 licenses	1	192.00	192.00
	CA Sales tax		8.25%	0.00
	Pay your bills online at: https://www.intuitbillpay.com/mindgarden			
	Customer Phone			
	3104260399			

2:45 PM
6/25/2015

Appendix C: Demographics Questions

Which race/ethnicity to you most closely identify with?
Caucasian, African American, Asian, Hispanic, Other.

Gender? Choices will be Male/Female
How many brothers and sisters do you have?
What kind of high school do you attend? Online or Traditional

What age did you start attending your current school? Participant will enter a valid numerical response.

How old were you when you began attending? Participant will enter a valid numerical response.

How many hours per week do you spend with friends/family doing activities such as games, sports, arts, theatre, clubs, movies, etc? 0, 1-2, 3-4, 5-6, 6-10, 10-15, 15 or more.

Appendix D: Parental Consent Form

Your son/daughter is invited to take part in a research study of social skills competency. He or she was chosen for the study because they are a student at a school in Pennsylvania. This form is part of a process called "informed consent" to allow you to understand this study before deciding whether to allow your child to take part.

This study is being conducted by a researcher who is a doctoral student at Walden University.

Background Information:
The purpose of this study is to compare social skills of traditional school students and online school students. The research findings will help to fill in a current gap in the research and provide great feedback to the schools. It should take about an hour to complete.

Procedures:
If you agree to allow your child to be in this study, he or she will be asked to:

- Complete a self-report of their social skills
- Complete a brief questionnaire

Voluntary Nature of the Study:
Your child's participation in this study is voluntary. This means that everyone will respect your decision of whether or not you want your child to be in the study. No one at the school will treat you differently if you decide for your child to not to be in the study. If your child feels stressed during the study he or she may stop at any time.

Risks and Benefits of Being in the Study:
There are no risks from participating in the study. The benefit is that the student may learn more about themselves and will be providing valuable information to assist in the research process.

Compensation:
There is no compensation for participation.

Confidentiality:
Any information your child provides will be kept anonymous. The researcher will not use your child's information for any purposes outside of this research project. Also, the researcher will not include your child's name or anything else that could identify him or her in any reports of the study.

Statement of Consent:

I have read the above information and I feel I understand the study well enough to make a decision about my child's involvement. By signing below I am agreeing to the terms described above.

Printed Name of Parent _____

Printed Name of Child _____

Date of consent _____

Parent's Signature _____

Researcher's Signature _____

Electronic signatures are regulated by the Uniform Electronic Transactions Act. Legally, an "electronic signature" can be the person's typed name, their email address, or any other identifying marker. An electronic signature is just as valid as a written signature as long as both parties have agreed to conduct the transaction electronically.

Appendix E: Student Assent Form

ASSENT FORM

Hello, I am doing a research project to learn about how well students communicate based on what type of school they attend. I am inviting you to join my project because you currently attend school in Pennsylvania. Please read this form and ask your parents if you have any difficulties undersatnding. I want you to learn about the project before you decide if you want to be in it.

WHO I AM:
I am a student at Walden University. I am working on my doctoral degree. I went to school in Pennsylvania and I am doing research to help improve the schools. It should take about an hour to complete.

ABOUT THE PROJECT:
If you agree to be in this project, you will be asked to:

- Fill out a basic questionnaire and a self-report about yourself.

IT'S YOUR CHOICE:
You don't have to be in this project if you don't want to. You won't get into trouble with your school or parents if you say no. If you decide that you want to join the project, you can still change your mind later. If you want to skip some parts of the project, just tell me.

Being in this project might take away a few minutes of your free time. But this project might help others by giving us important information about how well students are able to socialize and communicate with one another.

There is no compensation for this project.

PRIVACY:
Everything you tell me during this project will be kept private. That means that no one else will know your name or what answers you gave. The only time I have to tell someone is if I learn about something that could hurt you or someone else.

Please sign your name below if you want to join this project.

Name of Child _____

Child Signature _____

Date _____

Researcher Signature _____