

**College of Professional Studies**

Teacher Attitudes and Beliefs on the Socialization of
Cyber School Students

by

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Submitted in Partial Fulfillment of the Requirements for the Degree of

Ph.D. in Strategic Leadership and Administrative Studies

Approved July 25, 2019

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**CHAPTER 1**

**The Problem and Its Setting**

**Introduction**

Socialization remains a primary element of human development since the earliest civilizations. Humans are intrinsically drawn to one another for shared resources, companionship, and ultimately survival. Now in the age of technology, the ways in which we interact, socialize, and communicate have dramatically transformed from the proximal communities of the past (Chai & Fan, 2016; Deaton, 2015). Educators today are faced with the new and unique challenge of instructing students across varied methods of communication, many of which stretch the physical boundaries of the brick and mortar classroom. Rooted in Vygotsky’s Social Learning Theory and Social Development Theory, it is suggested that children learn and retain information better in a social environment and through shared learning experiences (Bandura, 1977; Vygotsky, 1978).

The recent rise of cyber schooling presents new challenges in educating students and ensuring adequate opportunities for socialization in the online classroom. Cyber schools have been part of the school choice movement since the early 2000s in most states across the United States (National Education Policy Center, 2016; Pazhouh, Lake, & Miller, 2015). Many state-funded cyber charter schools report lower than average test scores and poor student academic performance when compared with traditional brick and mortar classrooms (Barbour, Huerta, & Miron, 2018; Jack et al., 2013). Despite poor academic performance and low state testing scores, virtual school enrollment continues to grow (Sludden & Schott, 2013). While some believe that cyber schools offer a unique opportunity for home-based education and can provide opportunity to students who do not identify themselves as a good fit with their local school district, opponents of cyber schools argue for higher accountability for low performing cyber schools (Barbour, Huerta, & Miron, 2018; Schafft et al., 2014). Few studies exist to determine if socialization is a factor in the academic performance of cyber schools.

Vygotsky’s Social Learning Theory and Social Development Theory suggests that children learn more effectively in a social environment where they are participating in shared learning experiences (Bandura, 1977; Bozkurt, 2017; Gilles, 2014; Gunduz & Hursen, 2015; Slavin, 2013; Vygotsky, 1978 ). With a lack of proximal peer to peer interactions and fewer opportunities for genuine collaboration in the classroom, the effects of diminished social experiences for cyber school students is cause for concern in considering its potential impact on student learning.

Existing literature on socialization in K-12 online learning focuses on differences in perceived social presence (Cheng & Szeto, 2014; Bowers & Kumar, 2015), forming relationships in the virtual environment (Zhou, et al., 2016), frequency and duration of teacher-peer interactions and their impact on learning outcomes (Agudo-Peregrina et al., 2014; Joksimovića et al., 2015, Hawkins et al., 2013), student preference and satisfaction in the online environment (Lee, Young Yoon, & Hyun Lee, 2013; Kauffman, Heather., 2015), and overall online learning effectiveness (Nguyen, 2015; Moradi, Moein, et al., 2018). Furthermore, a significant amount of research in this area studies higher education, rather than the K-12 environment (Buzwell, S., Farrugia, M., & Williams, J, 2015; Ilgaz, H., & Gülbahar, Y., 2015; Jaggars, Shanna Smith, 2014; Kirkwood, Adrian and Price, Linda, 2014). Similar research has been conducted in looking at homeschool students and socialization, which largely reports that homeschooling does not have a negative impact on social skills (Koehler, et al., 2010; McKinley et al., 2007; Medlin, 1994, 2006; Ray, 2010). Additionally, Social Presence Theory is a popular theory in the current literature, which looks at how socialization occurs through virtual spaces and how meaning is created through internet communications (Picciano, 2002; Tu, 2000; Whiteside 2015). The research of social learning theory may be applicable to online educators by identifying ways to improve virtual socialization and peer communication.

A gap in the literature exists in determining teacher perceptions of socialization in cyber schooling and its relationship to academic performance. Methodologically, no studies are present that comparatively represent the opinions of both cyber teachers as well as brick and mortar teachers. This study intends to remedy these deficiencies by comparing the perceptions of both cyber and traditional school teachers in relation to student socialization in the brick and mortar and virtual environment. Multiple audiences benefit from this study, including current and potential K-12 online learners as well as cyber school district leaders and teachers. In an attempt to make better informed decisions as to school choice, current and potential K-12 online learners benefit through a more well-defined understanding of how teachers perceive the social costs of online schooling and how these may impact student learning. Cyber school districts benefit through a wider understanding of how their own school beliefs fit into a larger context of socialization in online learning, in hopes that they may alter school policies to better fit the social needs of students.

Using a quantitative survey method, this study compares attitudes and beliefs of cyber school and traditional classroom teachers on the significance of student socialization and its relation to learning outcomes.

**Theoretical Framework**

 Vygotsky’s Social Learning Theory sets a theoretical foundation to further examine impact of cyber schooling and its correlation to the social development and learning of children. The work of psychologists Lev Vygotsky and Albert Bandura have laid the framework for social learning theory. Vygotsky surmises that children construct learning through social interactions with peers. Known as constructivism, he argues that students learn best in a social setting, and that furthermore these interactions play a critical role in the cognitive development of the child (Bandura, 1977). Vygotsky (1978) explains that every part of the child’s development occurs in two parts, first the social level (between people), and then later the individual level (within the child). Similarly, Bandura (1977) believes that children learn through observation and imitation, and therefore the social presence of others is key in a child’s learning and development. This research provides the groundwork for further research on the impact of socialization on child development and learning.



Figure 1 Social Learning Theory (Vygotsky, 1978)

Constructivism continues to be a major trend in educational practice today and is predicted to continue to gain importance (Gunduz & Hursen, 2015). In looking at educational philosophies of today’s educators, the use of social interaction theory and constructivism is prevalent through all levels of education. Krahenbuhl (2016) agrees that twenty-first century educators are increasingly compelled to buy-in to constructivism and utilize interactive practices in the classroom, further confirming how these learning theories are relevant today. Teachers are regularly utilizing constructivism and social learning in traditional brick and mortar classrooms across the country and are demonstrating research-supported results that indicate that socialization is an important factor in student learning.

In a recent study of the effectiveness of learning through social constructivist perspectives, Bozkurt concluded that an interactive approach to learning math supports improvements in individual student cognition and learning (2017). Students who worked interactively with one another scored higher on assessments than students who worked individually, demonstrating the power of interaction in learning (Bozkurt, 2017). Given the continued research and support of teachers, social learning and constructivism are widely accepted as successful classroom practices. These studies indicate that not only is this style of learning being regularly utilized, but it also is as effective as has been presented in previous literature.

Gilles suggests that cooperative learning is another accepted form of social learning theory (2014). Cooperative learning takes place when students interact by working together to complete specific tasks and achieve group goals. In a comprehensive literature review of the effectiveness of cooperative learning, Gilles asserts that cooperative learning may support academic success in reading, writing, science, math, and overall higher-order thinking skills. Participation in cooperative learning is shown to produce academic and social growth when compared to the outcomes of individual learning. He further suggests that schools have been largely structured to encourage socialization and learning opportunities, given the confidence in the power of cooperative learning (Gilles, 2014).

Slavin found similar results on cooperative learning and teacher professional development on the use of cooperative learning in the classroom (2013). In a systematic review of math and reading program research, Slavin found that patterns emerged across hundreds of studies indicating a potential relationship between cooperative learning and student outcomes. Teachers who were trained to utilize cooperative learning demonstrated stronger academic success for their students as compared to teachers who received trainings in computer-aided instructional methods (Slavin, 2013). In a later study on the same topic, Slavin suggests that cooperative learning and its link to student achievement is generally viewed through one of four perspectives: motivational, social cohesion, cognitive, or developmental (2015). Each of these factors is thought to contribute to the learning process during collaboration. Although there is significant empirical evidence to support the success of collaborative learning, constructivism, and social learning theory, there is little evidence to support that the sole act of interaction can produce higher achievement in students, suggesting that that while socialization plays a key role in student learning, there must be other contributing factors that cannot be dismissed (Slavin, 2015).

Additionally, Deaton argues that given the increase of virtual communications through the use of social media and digital technology, the way in which we communicate and interact has been fundamentally altered within the past decade (2015). This alteration in communication and increase in technology has inevitably changed the ways in which learning takes place, suggesting that social learning theory may not be relevant to the virtual classroom environment (Deaton, 2015). Zhou et al. suggest that one example of technology being used to foster strong relationships is the online tool of instant messaging (2016). This form of online interaction is thought to be of high quality, given its ability to facilitate problem solving and foster the sharing of values and relationships, suggesting that meaningful social interaction may be able to occur virtually (Zhou, et al., 2016).

This combined research on the role of socialization on learning in the traditional brick and mortar classroom provides support for the theory that socialization is an important factor in the learning process as it can promote higher academic success for students. Yet, much of this research cannot be as easily applied to the virtual classroom given the major differences in the two settings. In a brick and mortar classroom, students have regular access to their peers, while in an online classroom setting, those interactions can only take place virtually, providing impediments on the level to which students can collaborate, interact, and communicate.

Given the increase of virtual communications through the use of social media and digital technology, the way in which we communicate and interact has been fundamentally altered within the past decade. This alteration in communication and increase in technology has inevitably changed the ways in which learning takes place (Deaton, 2015). With the expansion of the virtual classroom environment, more recent research has focused on how social learning translates online. In a traditional classroom, students have numerous and varied opportunities for collaboration and interaction, both through formal instruction as well as proximal interactions. In the virtual classroom environment, these interactions are naturally lessened given that students are not in the same space while they are learning, rather most online learning takes place in the students’ homes. Therefore, social presence and peer interactions are experienced differently virtually than they would be in a traditional brick and mortar classroom.

Furthermore, the continued relevance of social learning theory, constructivism, and cooperative learning can be seen recent literature and research (Gilles 2014; Gunduz & Hursen, 2015; Krahenbuhl, 2016; Salvin, 2015). The theories of Vygotsky and Bandura suggest that without the opportunity for interaction and collaboration, children may not have the opportunity to develop adequate social skills or participate in fundamental learning which is fundamental to development (Bandura, 1977; Vygotsky, 1978). Yet, contradictory research suggests that meaningful communication and interaction can be achieved in the online setting, demonstrating how further research is needed to help better understand this complicated setting (Bowers & Kumar, 2015; Deaton, 2015, Zhou et al,. 2016).

**Conceptual Framework**

**** The conceptual framework of this study is built upon the assumptions of Vygotsky’s Social Learning Theory that socialization and peer interactions have a direct link to student learning outcomes. This study intends to investigate the differences between virtual teachers and traditional teachers’ attitudes and beliefs about the socialization of cyber school students. The mediating factor of teacher environment (virtual teacher vs. traditional teachers) will be compared to see how they differ in attitudes and beliefs. The socialization of virtual school students is the factor being investigated.

Figure 2

**Purpose Statement**

The purpose of this study is to test Vygotsky’s Social Learning Theory that relates the socialization of cyber schooled students to learning experiences, by comparing the attitudes and beliefs of brick and mortar and cyber school teachers on the importance of socialization in both brick and mortar and cyber school classrooms. The independent variables are type of schooling, brick and mortar or virtual. The dependent variables will be defined as attitudes and beliefs of brick and mortar and cyber school teachers on social learning experiences of both virtual and brick and mortar school students.

**Research Questions**

What are the differences in attitudes and beliefs about student socialization between virtual and traditional teachers of brick and mortar and cyber school students in Pennsylvania?

**Sub Problems**

1. What are the attitudes of traditional teachers about socialization of brick and mortar school students?
2. What are the attitudes of traditional teachers about socialization of cyber school students?
3. What are the attitudes of cyber school teachers about socialization of brick and mortar school students?
4. What are the attitudes of cyber school teachers about socialization of cyber school students?
5. What are the beliefs of traditional teachers about socialization of brick and mortar school students?
6. What are the beliefs of traditional teachers about socialization of cyber school students?
7. What are the beliefs of cyber school teachers about socialization of brick and mortar school students?
8. What are the beliefs of cyber school teachers about socialization of cyber school students?
9. What are the differences in attitudes between virtual teachers and traditional teachers on the socialization of cyber school students?
10. What are the differences in attitudes between virtual teachers and traditional teachers on the socialization of brick and mortar students?
11. What are the differences in beliefs between virtual teachers and traditional teachers on the socialization of cyber school students?
12. What are the differences in beliefs between virtual teachers and traditional teachers on the socialization of brick and mortar students?

**Hypothesis**

Hypothesis 1:

Null Hypothesis 1: There are no differences in attitudes of traditional and cyber school teachers about socialization of cyber school students.
Alternative Hypothesis 1: There are differences in attitudes of traditional and cyber school teachers about socialization of cyber school students.
Directional Hypothesis 1: Traditional teachers are more likely to have negative attitudes about socialization of cyber school students.

Hypothesis 2:

Null Hypothesis 2: There are no differences in beliefs of traditional and cyber school teachers about socialization of cyber school students.

Alternative Hypothesis 2: There are differences in beliefs of traditional and cyber school teachers about socialization of cyber school students.

Directional Hypothesis 2: Traditional teachers are more likely to have negative beliefs about socialization of cyber school students.

Hypothesis 3:

Null Hypothesis 3: There are no differences in attitudes of traditional and cyber school teachers about socialization of brick and mortar students.
Alternative Hypothesis 3: There are differences in attitudes of traditional and cyber school teachers about socialization of brick and mortar students.
Directional Hypothesis 3: Traditional teachers are more likely to have negative attitudes about socialization of brick and mortar students.

Hypothesis 4:

Null Hypothesis 4: There are no differences in beliefs of traditional and cyber school teachers about socialization of brick and mortar students.
Alternative Hypothesis 3: There are differences in beliefs of traditional and cyber school teachers about socialization of brick and mortar students.
Directional Hypothesis 3: Traditional teachers are more likely to have negative beliefs about socialization of brick and mortar students.

**Definition of Terms**

1. Cyber School - Provides majority of instruction to students through the Internet or by some other electronic means. Students enrolled in cyber schools complete most school work at home through a computer, rather than attending in a school building (Education Law Center, 2013). In this study, cyber schooling will be defined as learning that takes place in a virtual classroom setting rather than a brick and mortar school.
2. Traditional Teacher - A Pennsylvania certified instructor who teaches in a brick and mortar classroom either full or part-time.
3. Virtual Teacher - A Pennsylvania certified instructor who teaches in a cyber school, either full or part-time, using the internet as the primary communication and instructional tool
4. Socialization - the process beginning during childhood by which individuals acquire the values, habits, and attitudes of a society through social interactions with others (Merriam-Webster). In this study, socialization can be defined as meaningful interactions among individuals, which can occur in-person or can be mediated through technology.
5. Student learning outcomes- Defined as teacher perception of student academic achievement as measured by observable learning, student grades, and overall academic performance.
6. Online learning - A form of distance learning in which students learn primarily through computer-mediated experiences (Nguyen, 2015).
7. Synchronous learning - Learning that takes place in live time, as opposed to asynchronous learning in which students are working independently (Szeto & Cheng, 2014). In the virtual classroom environment, synchronous learning can take place through live sessions, video calling, online collaborative documents, and instant messaging.
8. Attitudes - A mental position with regard to a fact or state; a feeling or emotion toward a fact or state (Merriam-Webster).
9. Beliefs - Something that is accepted, considered to be true, or held as an opinion; something believed (Merriam-Webster).

**Delimitations**

This study is delimited to Pennsylvania certified K-12 teachers who hold a valid Instructional I or II teaching certificate.

This study is delimited to teachers who have been working in the profession for at least one year.

This study is delimited to teachers who are currently working in Pennsylvania.

**Limitations**

Limitations to this study are present, including that participation is volunteer based and therefore participation may be limited. Delimitations of the study also narrow the eligibility of participants, which may result in a smaller sample than anticipated. Given that sampling is conducted in a limited demographic (Pennsylvania), it therefore may not be generalized or representative of the larger population. Results of this study could only be generalized to teachers who (a) hold valid Pennsylvania teaching certificates, (b) teach a K-12 subject in Pennsylvania, and (c) have one or more years teaching experience. Duration of study allows for two weeks for data collection, which may potentially limit the scope of the findings. Additionally, the researcher-created survey instrument may need to be further clarified for validity and reliability.

**Assumptions**

 It can be assumed that participants will answer truthfully, the sample is representative of the population, the survey tool is valid and reliable, and participants have a sincere interest in completing the study without other motives. To ensure truthful participation, the records of this study will be kept private. Information used in any written or presented report will not make it possible to identify the participants. Only the principle investigator will have access to the research records, which will be stored on a password protected secure server. Prior to participating in the study, potential participants will need to agree to the informed consent form, as well as acknowledge that they are meet all eligibility requirements and have no ulterior motives in completing the study. In order to ensure validity and reliability of the survey instrument, it will be modeled after previously created survey tools with proven validity and reliability.

**Significance**

As the climate of education continues to change and adapt to educational technology, it is critical to continue to evaluate and analyze how technology is being used to service students and what the impact is on student learning. Future research should focus on developing accurate measurements for student interactions when utilizing instructional technologies as well as continuing to monitor how changing technologies impact student opportunities for collaboration and related learning outcomes. Additionally, long-term longitudinal studies on cyber schooled children and any possible lasting impacts due to lack of socialization opportunities would be beneficial to closing gaps in the literature. Few studies exist using Social Learning Theory as a framework when studying learning outcomes in cyber school students.

Limitations of the literature on this topic include difficulty in accurately measuring socialization, inconsistencies between cyber schools, and lack of long-term longitudinal studies on lasting impacts. The existing body of research focuses mainly on identifying the efficiency of online learning by comparing student learning outcomes, but does not adequately address how meaningful virtual interactions can be a critical component of this. Another important limitation is that comparatively few cyber schools have been studied in relation to how many are currently operating. This limits the results of the literature because those who have been studied are not necessarily representative of all cyber schools, which suggests that some cyber schools may be out performing others. This study is intended to address these gaps in the literature by focusing on the topic of teacher perspectives of socialization in the virtual environment, therefore adding to this growing body of literature to help clarify how Social Learning Theory is applicable to cyber school students.

The analysis of this future study is valuable for parents and students who are attending or considering attending a cyber school to help them make an informed decision as to how it can impact their education. This information is also valuable for cyber schools, given that they can change common practices to encourage more meaningful student-student interactions, which may promote more learning and higher academic achievement. Additionally, this study can be useful for policy makers to make informed decisions as to how to alter and encourage legislation that benefits students attending cyber schools, as well as their local sending schools.

**CHAPTER 2**

**The Literature Review**

**Introduction**

This literature review is intended to provide an overview of research on K-12 online learning as it relates to the socialization of virtual school students. The three major themes that will be explored are effectiveness of online learning, socialization of homeschooled students, and social presence and online learning. Evidence of practices in research from online learning in higher education will also be included when applicable. The effectiveness of virtual schooling will be explored through the concepts of learning outcomes, school performance, and instructional technologies. Social Learning theory and the psychological research of Vygotsky and Bandura will be explored as the theoretical framework. These learning theories will be used to compare socialization as a factor in learning in both the brick and mortar and virtual classroom environments. Related research on socialization of homeschooled students will be included, given the similarities in learning environment. Additionally, the significance of social presence theory and how its connection to online learning is explored. Blended learning and future classroom models as they relate to student interaction and socialization will also be included in the scope of this literature review.

**Effectiveness of Online Learning**

In exploring socialization in the virtual school setting, it is necessary to examine the academic performance of cyber schools, the methods of socialization available to students in this setting, and the effectiveness of that socialization. Cyber schooled students are not physically present in the classroom, yet varied instructional technologies are utilized to provide synchronous learning experiences, such as instant messaging, interactive whiteboards, and video conferencing (Lee, Young Yoon, & Hyun Lee, 2013). There is research to support both sides of the effectiveness of virtual learning and evidence as to the effectiveness of virtual interactions is mixed (Joksimovića et al., 2015; Szeto & Cheng, 2016; Zhao, Sullivan, & Mellenius, 2014).

One study on the effectiveness of virtual synchronous instruction, which looked at 204 students in 29 courses over a period of six years, indicated that virtual synchronous student-to-student interactions did not have an effect on learning outcomes (Joksimovica et al., 2015). Joksimovica et al. looked at frequency and duration of two forms of interactions: student-student, in which students interacted synchronously with one another, and student-system, where students interacted with a computer program. Final grade in the course was used as the measurement to determine which form of interaction was more effective. Increased frequency and duration of student-student interactions did not increase performance, but increased frequency and duration of student-system interactions did. (Joksimovića et al., 2015). In contrast, in a similar empirical study of online interaction, researchers analyzed six online courses for interaction data and found contradictory results to Joksimovica et al. (2015; Agudo-Peregrina et al., 2014). This study was specifically aimed at determining which virtual interactions were relevant for learning and used data based on frequency and duration of interaction. It studied three types of interactions: student-student, student-teacher, and student-content. In VLEs (virtual learning environments) student-content interactions refer to students accessing online content such as resources and tasks. Results suggest that student outcomes can be predicted by frequency and duration of interactions with peers and teachers in the virtual learning environment (Agudo-Peregrina et al., 2014). The contradictory findings of these studies demonstrate that further research is needed in determining whether or not online interactions are relevant for learning (Agudo-Peregrina et al., 2014; Joksimovića et al., 2015).

 Moreover, when compared with face-to-face, synchronous online student collaboration is experienced differently (Lee, Young Yoon, & Hyun Lee, 2013; Szeto & Cheng, 2016; Zhao, Sullivan, & Mellenius, 2014). When interactions take place through video conferencing, where the students are able to both visually and verbally participate, a different level of social presence is experienced than in a traditional face-to-face setting (Szeto & Cheng, 2016). Similarly, asynchronous online interactions, such as peer discussion postings, do not automatically yield collaboration. Students may post a discussion response but not receive any replies, therefore despite participation, students may not be receiving any interaction or opportunities for collaboration (Zhao, Sullivan, & Mellenius, 2014). Collaboration and interaction in the online environment may not be as strong as a factor on student success as it is in the face-to-face environment (Szeto & Cheng, 2016; Zhao, Sullivan, & Mellenius, 2014).

 Lee, Young Yoon, and Hyun Lee found evidence to suggest that students prefer to learn online when utilizing synchronous video conferencing, as opposed to completing the work without those interactions. Results found that students were more engaged when using video conferencing, as opposed to a live chat option, as evidenced by the frequency of student questioning and participation. A significant take away of this study is that academic scores improved with use of the video conferencing system as compared to the online chat feature, suggesting that delivery method of interactions is significant for online students and that specifically, the methods used to mediate interaction is as important, if not more important, than the frequency of those interactions (Lee, Young Yoon, & Hyun Lee, 2013).

Given the varying factors that can impact academic success it cannot be clearly determined which of the many factors are impacting student learning, yet some research suggests that there may be a relationship between learning outcomes and student interaction, which transcends through both classroom environments (Agudo-Peregrina et al., 2014; Lee, Young Yoon, & Hyun Lee, 2013; Nguyen, 2015; Wilder, 2014). Despite this uncertainty, the literature shows that students in the virtual school environment do not perform as highly as those in the brick and mortar setting, prompting the question as to whether this may be influenced by the lack of in-person student interactions, among other factors (National Association of Charter School Authorizers, 2015; NEPC, 2016; Jack et al., 2013).

Virtual schools across the United States are not keeping up with performance standards of comparative traditional brick and mortar schools (NEPC, 2016, Jack et al., 2013). Virtual schools consistently perform below traditional schools in state standardized exams, report lower course completion rates and academic averages, as well as reporting much lower graduation rates. Nationally, the four-year graduation rate at traditional brick and mortar schools is reported to be an average of 82%, while virtual school averages are almost half of that, at 41% (NEPC, 2016).

In a comprehensive review of available data on virtual school performance, it was found that cyber schools are not achieving national averages of student performance standards. Two such highlighted findings are that students enrolled full time in virtual school in Ohio lag behind in reading and math proficiency, and that online students from Washington State performed lower than the state average in all subject areas (National Association of Charter School Authorizers, 2015). These results demonstrate that virtual school students perform lower than traditional students, yet cyber schools serve a disproportionately at-risk population of transient students which may be a factor in the wide-spread low performance of these schools (National Association of Charter School Authorizers, 2015). Multiple additional factors may contribute to the demonstrated lower academic performance of virtual schools, some of which may be the same factors impacting individual academic performance of students, such as parental involvement, student self-regulation, structure of the learning community, type of learning activities, and student’s engagement level (National Association of Charter School Authorizers, 2015; Nguyen, 2015; Wilder, 2014).

Jack, James, and Schott’s research on Cyber Charter Schools cites consistent findings regarding the effectiveness of cyber schooling. In this 2013 study, which focuses on a more narrow population of Pennsylvania cyber charter schools, eleven schools were analyzed and compared through school performance profiles, mobility rates, academic achievement, and demographics of student population. Jack et al.’s findings suggest that students who attend cyber charter schools in Pennsylvania are more likely to score lower on state tests, switch districts frequently, fall into a lower socio-economic status (2013). In comparing the demographic makeup of cyber charters with brick and mortar schools, the student bodies were thought to be comparable, expect that cyber charter schools were found to have a higher proportion of economically disadvantaged students (Jack et al., 2013). Given that socio-economic status is found to be a factor influencing student achievement, this may suggest one aspect impacting lower performing cyber schools in Pennsylvania (Jack et al., 2013, Nguyen, 2015).

Virtual schooling provides some opportunities for socialization through synchronous learning opportunities, but it is not known whether these virtual interactions are as powerful of a learning tool as in-person collaboration (Agudo-Peregrina et al., 2014; Joksimovića et al., 2015; Lee, Young Yoon, & Hyun Lee, 2013). It is unknown what factors specifically are the cause for the low performance of cyber schools, but student demographics and effectiveness of virtual learning interactions have both been considered, and therefore it cannot be clearly stated whether or not a lack of social interaction has an impact on student learning and virtual school performance (Jack et al., 2013, Nguyen, 2015; Wilder, 2014).

**Socialization of Homeschooled Students**

While the research surrounding socialization and cyber schools is relatively new, homeschool and the question of socialization has been raised and researched for decades (Medlin, 1994; Ray, 2000; Rudner, 1999; van Pelt, 2003). Homeschool students and virtual school students share similarities in the learning environments, given that the majority of education takes place at home in both educational settings. Many of the concerns being raised for cyber schooled students are similar to the socialization concerns of homeschooled children. By looking at the existing research of homeschool socialization and social skills of homeschoolers, more can be learned about how this may relate to the similar setting of online learners.

In research of homeschool students, the Social Skills Rating System (SSRS) is a commonly used survey tool that is used to evaluate social behaviors of children aged 3-18. This tool is comprised of child, parent, and teacher questionnaires (Gresham & Elliot, 1990). Koehler et al. (2002) conducted a study on the social skills of homeschooled students versus traditionally schooled students. Using the Social Skills Rating System (SSRS) they looked at cooperation, assertion, responsibility, and self-control of both groups of students. A two tailed independent sample t-test was used to analyze the data. Results found that home-schooled students demonstrated higher social skills than conventionally schooled students. This study highlights that although the findings are consistent with previous research in this area, they are contradictory to popular belief. Limitations of this study include a small sample size and limited demographics, which may make generalization questionable. Additionally, parental bias may be a factor given that parents responded to the SSRS according to their own perceptions (Koehler et al., 2002).

Medlin looked at homeschooled children’s social skills in a quantitative research study using the Social Skills Rating System (SSRS). Seventy homeschooled students participated in the study and were compared with a standard sample from the SSRS of 1,170 traditionally schooled children. Results show that scores of homeschooled students exceeded the average for public school students in the standardization sample for all four categories of cooperation, assertiveness, empathy, and self-control (the 50th percentile). These findings demonstrate that these self-reported skills were consistently higher than those of public school students, especially for older children and girls (Medlin, 2006). In an earlier study, Medlin (1994) looked at the relationship between homeschooled children’s academic achievement and their parents’ teaching practices, their scholastic aptitude, and their academic self-concept. Thirty-six homeschooled children and their parents participated through a survey and data collected from standardized achievement tests scores. A multiple regression analysis was conducted and found four significant predictors of academic achievement: OLSAT scores, fewer months per year of homeschool, PHCSCS scores, and a low level of direct instruction. Highlights from this study include that the level of direct instruction provided by parents (p=.006), as well as months per year of school (p=.015) were shown to have a significant negative correlation with achievement (Medlin, 1994). As with other research using the SSRS, self-reporting bias is a significant limitation of this study, as participants may lack the self-awareness to respond truthfully or validly. Given that many studies on social skills in children are analyzed using the SSRS, it can be suggested that an alternative survey tool be developed, especially given the simplicity of the SSRS questionnaire.

Mecham (2004) compared SSRS scores of homeschooled children to that of their public school peers and found no differences between the groups for boys, but did find that girls who were homeschooled scored lower than publicly schooled girls in the areas of self-control, empathy, and assentation. There was no significant difference found between homeschooled boys and girls. Scores were reported both by mothers on their children, as well as the children self-reporting. A similar study by Francis and Keith (2004) found that homeschooled children were rated higher on social skills by their parents than that of publicly schooled students. Overall scores were shown to be higher for the homeschooled group, but no significance was found between the two groups in any of the individual categories.

In another study utilizing the SSRS, McKinley et al. (2007) compared the social skills between homeschooled, public schooled, and private schooled children. They utilized the SSRS, as well as the Peer Network and Dyadic Loneliness Scale (PNDLS), the Loneliness and Social Dissatisfaction Questionnaire (LSDQ), and the Friendship Qualities Scale (FQS) on 53 homeschooled, 48 public schooled children, and 49 private schooled between the ages of 8 and 12. Descriptive statistics were calculated and the hypothesis was tested using a one-way between subject ANOVA, with post-hoc tests (Tukey’s HSD) used to compare variables. Findings from the SSRS show that private schooled children scored significantly higher than home-schooled children in the areas of cooperation (p = .038), assertion (p = .006), and self-control (p= .009). On the LSDQ, homeschooled children were shown to be significantly lonelier than private school children (p = .021), but no significant differences were found between homeschooled and public schooled children, or any of the three variables on the PNDLS. Additionally, homeschooled children reported significantly less conflict and more affectionate bonds in friendships as measured by the FQS (McKinley, 2007). Based on the findings, the authors suggest that school setting is not an effective indicator of social skills in children. These results are steadily consistent with other homeschool SSRS-based research indicating that the social skills of homeschooled children are not negatively impacted by the homeschool setting.

Reavis and Zakrinski (2005) looked at socialization of homeschooled children by comparing their social networks and psychological adjustment to their traditionally schooled peers. Findings showed that both groups, homeschooled and conventionally schooled children, had the same number of close friendships with a similar level of quality. Additionally, homeschooled children were found to have more positive relationships with non-peer adults such as coaches and parents. Differences were found between the psychological adjustment of the groups, suggesting that homeschooled children may be more dependent on close friends (Reavis and Zakrinski, 2005). While this research did not use the SSRS and was focused more on friendships than social abilities, the results are similar in that they do not show any negative social effects of homeschooling.

 In a comprehensive literature review of socialization in homeschool students, Medlin analyzed the major findings prior to 2000. Medlin (2000) analyzed literature supporting both side of the socialization questioning, finding that research overwhelmingly showed little empirical evidence to support the claim that homeschooling negatively impacts the socialization of children. Medlin (2013) revisited this research question thirteen years later and once again found that empirical evidence supported positive social outcomes of homeschooling.

Ray (2010) found similar results when he conducted a nationwide cross sectional study examined academic achievement, demographic features, and educational history of home-school students. The highlights of this study include an attempt to include a larger sample population including a broader range of students and families. A researcher-created survey instrument was used to collect background and demographic information. Academic achievement was measured with standardized test scores. Data from a sample of nearly 12,000 students was gathered from all 50 states. This study provided insight into home the education setting, including that 98.3% of students had a computer at home that they utilized and that 89.4% of parents had never been certified teachers. Results found that there is no significant interaction of parent certification status and grade ( p=.987), yet homeschool children whose parents are both college graduates outperform children whose parents both do not have a college degree (p<.001). Additional findings regarding academic achievement find that test scores of homeschool students are exceptionally higher than traditionally schooled students. Homeschooled students mean scores were well above public school students on every subtest. Given that this is a descriptive study and not an experiment, findings must be interpreted accordingly (Ray, 2010). Results of this study are consistent with similar previous studies in suggesting that the homeschool setting provides effective instruction (Ray, 2000; Rudner, 1999; van Pelt, 2003). While online learners appear to be academically underperforming, this research suggests that homeschool students may actually be out-performing their traditionally schooled peers (Barbour, Huerta, & Miron, 2018; Jack et al., 2013; Ray, 2010). Although both educational settings of homeschool and online learning take place in the home, the results of their academic performance appear to be different, suggesting that there are more factors contributing to student academic performance.

Despite the consistencies shown in the research supporting healthy social attributes in homeschooled children, critical opposition has been raised. A 1996 article from the *APA Monitor* voices the opinions of educational psychologists strongly against homeschooling, emphasizing that they believe homeschooled children are too sheltered and ill prepared for mainstream life (Murry, 1996). In another piece of literature critical to homeschooling, Mayberry et al. (1995) surveyed public school superintendents and found that 92% felt that homeschooled children do not receive adequate socialization. Themes include harsh critics of parents, including that parents “want to ensure their children’s ignorance” (p. 94) and are inducing “serious harm” on their homeschooled children (p. 94). The differences in public opinion about homeschooling and what the research actually shows raises questions as to why homeschooling is viewed negatively while research supports such positive findings.

In research contradictory to Murray (1996) and Mayberry et al. (1995), Brint, Contreras, and Matthews (2001) studied socialization messages in 64 public elementary schools through observation. Researchers coded interactions between teachers and students and found that 84% of the messages from teachers were related to orderliness, such as maintaining classroom rules, keeping students quiet, and redirecting attention in an attempt to encourage students to complete work appropriately and timely. Messages communicating positive social behaviors were comparatively rare, including that of responsibility (1%), honesty (>1%), courage (>1%), and cooperation (2%). This research suggests although there may be more student-teacher and student-student interactions in the traditional classroom than may be present in a homeschool or virtual environment, the majority of those interactions are neither positive nor instructionally-focused.

Additional research on the involvement of homeschooled students in extracurricular activities as a supplement to social interaction suggests that homeschooled children are active in these type of non-academic social activities. This research demonstrates that homeschooling families should encourage social activities outside of the home, including church organizations, scouting, and recreational sports (Lebeda, 2005). In Pennsylvania, homeschooled children are eligible by law to participate in extracurricular activities sponsored by their home district, including clubs, musical ensembles, athletic teams, and theatrical productions as long as they are held during after school hours and are not credit bearing (Pennsylvania Equal Access Bill, 2006). Similarly, cyber school students have the same rights, given that students enrolled in a cyber charter school in Pennsylvania are eligible to participate in extra-curricular activities of their home district of residence as long as the cyber school doesn’t provide the same extra-curricular opportunity (Charter School BEC, 24 P.S. §17-1701-A, 2006).

Overall, this research is related to the research question of comparing perceptions of cyber school and traditional classroom teachers on the significance of student socialization and its relation to learning outcomes because it highlights important literature in relation to how the home learning environment may impact both social skills and academic success. A major difference between the research in cyber school effectiveness and that of homeschooled students is that there are mixed findings in regards to how virtual interactions impact learning, yet research of homeschooled students is more consistent in showing that the learning environment does not seem to have negative impacts on either academics or social skills (Agudo-Peregrina et al., 2014; Joksimovića et al., 2015; Medlin, 2000; Ray, 2010; Young Yoon, & Hyun Lee, 2013). This research suggests that the home learning environment and lack of school-facilitated peer interactions would not be the root cause of low performance of virtual schools.

**Social Presence and Online Learning**

Social presence theory is the idea that both synchronous and asynchronous interactions in the online learning environment, including text based communications like discussion postings, as well as instant messaging and live virtual class experiences, create a sense of community and provide for some level of social engagement and collaboration (Kreijns, et al., 2014). Social presence is suggested to be an important element of online learning, given its connection to social interaction and participation among online students, which yields potential opportunities for collaboration (Goggins et al, 2009, Picciano, 2002; Yang et al, 2006). The body of literature on social presence theory can provide insight into how online learners build relationships with peers and teachers in the online environment, which can help inform the research question of this proposed study by clarifying how socialization and meaningful interactions can take place virtually. Much of the research on social presence theory is centered around identifying what make a virtual learning interaction a meaningful experience, as well as how to effectively track and measure those interactions.

Tu (2000) refers to social presence as one of the “most significant factors to examine in distance education” (p.1). He relates social presence to Vygotsky’s social development theory by asserting that social presence is a principle aspect of social learning theory, given that communication and interpersonal relationships are both fundamentally impacted by social presence. He explains that in order for social learning to occur during computer-mediated communications (CMCs), students must interact with others, acknowledging their social presence.

Weidlich and Bastiaens (2017) attempt to better understand social presence in the online classroom through validating and further improving the SIPS model (Sociability, Social Interaction, Social Presence, Social Space), which is an instrument used to gauge the level of social presence in an online setting. Sociability (.41) and Social Interaction (.46) were shown to have a large effect, Social Interaction a medium to large effect (.27), and Social Presence a small effect (.05). Results indicate that the SIPS model is a viable framework in evaluating and understanding social aspects of online learning. Yet, researchers point out that individual learners’ perception of progress exceeds some variables, specifically socioemotional. This study is significant because it is the first attempt at validating the SIPS tool, which can lead to further research clarifying the variable factors of online social presence.

Karel Kreijns has been a dominant researcher in the field of online social presence theory and has made numerous contributions to the literature surrounding this topic. Kreijns, Van Acker, Vermeulen, and Van Buuren (2014), build off of the COI tool (Community of Inquiry) to further clarify online social presence and define one’s ability to share a personal identity and unique characteristics virtually.

Goggins et al (2009) studied social ability in online groups using a subset of data previously collected from an online graduate course. This mixed methods study utilized data from 42 participant interviews, transcripts from course assignments including discussions, reflections, and chat transcript, as well as 24 responses to a social ability survey. The two questions being studied were how social ability changes during a 7 week collaborative online project, and how does the social ability of participants impact their participation and contribution in an online course. Goggins found that social ability increased when participants collaborated in an online project. Specifically, two factors of social ability, peer social presence and written communication skills, increased significantly (p < 0.05). These results suggest that working collaboratively online can increase social presence for group members. Based on these findings, Groggins asserts that structuring activities to include group work can be effective in encouraging social ability and increasing social presence in online courses.

In a non-experimental, comparative study, Oyrzun (2016) looked at the relationship between methods of learner to learner interaction and their effects on satisfaction, social presence, and achievement of online learners. Two hundred and twenty seven online undergraduate students and 17 instructors participated in the study through survey completion. Results found that learner’s achievement and level of satisfaction increased when instructors provided designed interactions with a cooperative intent.

 Picciano (2002)’s quantitative study focused on interaction, presence and performance in an online course. This study is unique in that it studied performance through specifically looking at assessments related to course objectives, rather than relying on measures of institutional performance like withdrawal rates or grades. Interaction, presence, and student performance data was collected through the Blackboard learning management system for an online graduate course. descriptive analysis of interaction, presence, and performance data collected in a graduate course (N=23). Findings from this study show a positive relationship between student perception of interaction and their perception of quality of learning, meaning that students believed that when they interacted more, they had a better learning experience. However, evidence to contradict this was found when message board postings were analyzed and compared to student performance measures, revealing that student perception of importance in interactions were not consistent with findings from student data. Although the findings of the qualitative aspect of this study support Oyrzun’s (2016) results, the contradictory quantitative findings indicate that there is a disconnect between user perception and how interaction data is being measured.
 Similarly to Picciano’s (2003) mixed findings, in a more recent study Whiteside found that student perception of interaction did not match interaction data, demonstrating a need to further validate methods of identifying and analyzing this complicated data. Whiteside (2015) explored the social presence model in online and blended learning. Similar to this proposed research study, Vygotsky’s social learning theory is used as a framework for the research. Whiteside used a pre-existing coding scheme for social presence to analyze online course discussion assignments from two cohorts of 16 graduate level online courses, which included participants who were school leaders including teachers, technology specialists, principals, and superintendents. The purpose of this study was to compare the social presence experiences of two groups of online students. Cohort 1 participants averaged 316 social presence codes, while Cohort 2 averaged only 178, suggesting that Cohort 1 participants experienced a greater social experience. Yet, additional data from interviews and participant self-reported observation notes suggest Cohort 2 to be the more socially present section. These contradictory results of this study were overall inconclusive and demonstrate a need to more effectively measure social presence in the online classroom. Benefits of this study include the duration, given that it was conducted over 13 months.

Moreover, student perception of social ability in relation to online learning was studied by Yang et al. (2006). Social ability is defined as perceived experiences and social interactions during online learning experiences. The research consisted of survey data from 125 students in online college courses. Two survey tools, the Motivated Strategies for Learning Questionnaire (MSLQ) and the Social Ability Instrument were adapted for this study. An exploratory factor analysis was conducted and found that perceived peers social presence (34.05%), perceived written communication skills (11.45%), perceived instructor social presence (8.16%), comfort with sharing personal information (4.43%), and social navigation (3.76%) account for 61.86% of total variance. Yang et al state that these are the five primary characteristics of social ability, providing insight into how online learners perceive their experiences and social interactions.

While the previously discussed research focuses mainly on how interactions occur in the virtual environment and how to best measure those interactions, Huda et al. looked more specifically at how technology can be used to customize the online learning experience for individual users. In their recent study, Huda et al. (2018) studied how big data can be used to inform online learning and improve social presence. Big data refers to the information data collected from a user's communications on all digital devices, such as cell phones, laptops, and tablets, and includes information from social media platforms and email contents. Much like digital marketing uses this data to predict applicable advertisements, Huda etl al suggest that it could be similarly used to predict resources that would be beneficial. Using content analysis, findings of their study revealed that analyzing big data can provide some particular advantages to improve the experiential learning basis of online learners (2018).

 Unlike the consistent research on homeschool socialization, social presence theory finds mixed results on how social experiences may be impacting the online learner. While one major survey tool (SSRS) is used commonly throughout homeschool research, there have been many attempts to create and validate effective methods of measuring student interaction and social ability in the online environment (Kreijns et al., 2014; Weidlich and Bastiaens, 2017). The inconsistent findings of how social presence theory relates to online learning mirror similar inconsistencies in the research on the effectiveness of online learning, further indicating that more research is needed in determining how socialization impacts cyber schooled students.

**Summary**

In exploring the effectiveness of online learning, socialization of homeschooled students, and social presence and online learning, three key patterns in the literature emerge. First, that despite numerous and varied research studies, it is inconclusive how social learning theory applies to the online learning environment and it cannot be stated whether or not socialization is a factor in the underperformance of virtual schools (Jack et al., 2013; NEPC, 2016; Szeto & Cheng, 2016; Zhao, Sullivan, & Mellenius, 2014). Second, that despite the low performance shown in the home learning environment of virtual schools, homeschool research demonstrates that students can thrive academically and socially in the home learning environment (Barbour, Huerta, & Miron, 2018; Francis and Keith, 2004; Ray, 2010; Reavis and Zakrinski, 2005). Lastly, that more research is needed to clarify how social interaction and collaboration, including those in the virtual classroom, can be both effectively measured and implemented within the classroom (Piccano, 2003; Oyrzun, 2016; Whiteside 2015). Overall, this literature shows that there is a need to clarify how social learning and socialization translate into the virtual space and if the differences in communication and methods of interaction have an impact on the academic achievement of online students. Ultimately, learning more about how socialization takes place virtually can potentially enable virtual instructors and schools to implement best practices to increase student success.

**CHAPTER 3**

**Methodology**

**Research Design**

 The purpose of this study is to compare the difference in attitudes and beliefs of traditional and cyber school teachers through a quantitative study. An online survey method is the preferred approach for this study because it provides for flexibility in administering the survey instrument across the population within the specified region. This survey will be cross-sectional in nature with all data collected at one point in time. The independent variables within this quantitative research study are traditional brick and mortar teachers (BM) and cyber school teachers (VIR). The dependent variables that will be studied will be the attitudes (ATT) and beliefs (BEL) of teachers on the socialization of cyber school students. Data collection will take place through an online survey that will be distributed via social media on Facebook.

**Sample**

The population to be studied in this survey is teachers in Pennsylvania, including both traditional classroom teachers and cyber school teachers. The US Bureau of Labor Statistics estimates the number of elementary, middle, and secondary school teachers in Pennsylvania at 122,430.
 A convenience sample will be utilized wherein participants will be chosen based on availability and convenience. The population will be selected through voluntary participation using social media (Facebook) as the recruitment method. The sampling design for this population will be single stage. The researcher will post a status update sharing the recruitment flyer and survey link a minimum of twice throughout the two week data collection window. Additionally, the reacher will share the recruitment post and survey link on the PA Teachers Unite Facebook group, a group of 180 members for teachers in Pennsylvania. The recruitment post can be found in Appendix B and the Informed Consent is can be found in Appendix C.

**Instrumentation**

Two instruments will be used for this study the Socialization Belief and Attitude Instrument and a demographic instrument. The Socialization Belief and Attitude Instrument is a modified instrument of the Teachers’ Attitudes, Beliefs, and Self Efficacy about Multicultural Education (Appendix D). Exploratory Factor Analysis was used to create this instrument. Content validity was established for 13 items for belief scale and 19 items for the attitude scale through approval of five experts. Construct validity of the analysis was confirmed through analysis of the data of 490 teachers. Exploratory Factor Analysis was completed to test the accuracy and reliability of the model structure have led to Confirmatory Factor Analysis. Reliability was verified using Cronbach’s alpha values and was determined to be.737 for belief scale, .654 for attitude scale and .786 for self-efficacy scale (Yildirim & Tezci, 2016).

This survey instrument was further modified to reflect teachers’ attitudes and beliefs regarding socialization of cyber school students. Elements of multicultural education will be removed and replaced with elements of socialization for cyber school students. Content validity of this instrument has been strengthened through pilot testing. Three voluntary participants meeting the participation requirements of the study have evaluated the instrument by performing an initial evaluation of question consistency, as well as improving format and instructions. The comments and feedback of the three pilot testers have been used to alter the instrument. To ensure reliability of the modified survey instrument, professional review has been completed by Marywood University faculty Dr. Joseph Polizzi. Professional Review documentation will be provided to the Institutional Review Board for Marywood University.

Likert scale scored from 1-5 will be used to measure items on the instrument from a continuous 5 point scale of Strongly Disagree, Disagree, Neutral, Agree, and Strongly Agree. For attitude, the minimum score is 10 and maximum score is 50. For beliefs, the minimum score is 10 and the maximum score is 50. The beliefs component consists of 10 questions: 11, 12, 14, 16, 18, 21, 22, 24, 26, 30. The attitudinal component consists of 10 questions: 13, 15, 17, 19, 20, 23, 25, 27, 28, 29. There are no reversed scored items. Questions are intended to establish a baseline for teacher attitudes and beliefs towards socialization in the brick and mortar classroom and compare that to the cyber school environment. The brick and mortar portion consists of 10 questions (10-20). The cyber school portion consists of 10 questions (21-30).

Demographic information will also be collected on the survey including age, gender, ethnicity, and education level. The following additional demographic information regarding teaching experience will also be included: educational setting of current employer, years teaching in brick and mortar and virtual environments, and if the participant has ever been a student in an online course.

Items are used to measure teachers’ attitudes and beliefs of socialization of cyber school and brick and mortar students. Survey Instrument is attached in Appendix A.

**Data Collection/Procedure**

Internal Review Board approval will be received by Marywood University through the exempt review process prior to beginning research. An exempt review is anticipated, given that research is conducted in an educational setting, does not contain sensitive material, and data will be recorded with no identifiable information. Research will be gathered via an online survey on Survey Monkey. The researcher will utilize a convenience sample and recruit participants via social media on Facebook. The researcher will share the post with recruitment post and survey link as a status update as well as on the PA Teachers Unite group. Prior to participating in the study, potential participants will need to agree to the informed consent form, which is embedded as the first page of the survey, as well as acknowledge that they meet eligibility requirements.

Data will be collected through Survey Monkey and exported to SPSS Version 24 for data analysis. The records of this study will be kept private. Information used in any written or presented report will not make it possible to identify the participants. Only the principle investigator will have access to the research records, which will be stored on a secured and password protected server. Records will be kept for a minimum of three years, then they will be destroyed through deletion of computer records. The risks in this study are no greater than the risks experienced in daily life or activities.

**Data Analysis**

Data Analysis will be conducted through statistical analysis on SPSS, Version 24. An alpha level .05 will be used to examine significance.

Sub-Problems:

1. What are the attitudes of traditional teachers about socialization of brick and mortar school students will be analyzed using frequency distribution and other descriptive statistics.
2. What are the attitudes of traditional teachers about socialization of cyber school students will be analyzed using frequency distribution and other descriptive statistics.
3. What are the attitudes of cyber school teachers about socialization of brick and mortar school students will be analyzed using frequency distribution and other descriptive statistics.
4. What are the attitudes of cyber school teachers about socialization of cyber school students will be analyzed using frequency distribution and other descriptive statistics.
5. What are the beliefs of traditional teachers about socialization of brick and mortar school students will be analyzed using frequency distribution and other descriptive statistics.
6. What are the beliefs of traditional teachers about socialization of cyber school students will be analyzed using frequency distribution and other descriptive statistics.
7. What are the beliefs of cyber school teachers about socialization of brick and mortar school students will be analyzed using frequency distribution and other descriptive statistics.
8. What are the beliefs of cyber school teachers about socialization of cyber school students will be analyzed using frequency distribution and other descriptive statistics.
9. What are the differences in attitudes between virtual teachers and traditional teachers on the socialization of cyber school students will be analyzed using an Independent Samples T-Test.
10. What are the differences in attitudes between virtual teachers and traditional teachers on the socialization of brick and mortar students will be analyzed using an Independent Samples T-Test.
11. What are the differences in beliefs between virtual teachers and traditional teachers on the socialization of cyber school students will be analyzed using an Independent Samples T-Test.
12. What are the differences in beliefs between virtual teachers and traditional teachers on the socialization of brick and mortar students will be analyzed using an Independent Samples T-Test.

**Supplemental Analysis**

Supplemental analysis will be conducted through statistical analysis of demographic data:

1. The differences in Belief by gender will be analyzed through an Independent Sample T-Test.
2. Attitude by gender will be analyzed through an Independent Sample T-Test.
3. Attitude by age will be analyzed using Pearson’s Correlation Coefficient.
4. Belief by age will be analyzed using Pearson’s Correlation Coefficient.
5. Attitude by years teaching will be analyzed using Pearson’s Correlation Coefficient.
6. Belief by years teaching will be analyzed using Pearson’s Correlation Coefficient.
7. The relationship between attitude and belief will be analyzed using Pearson’s Correlation Coefficient.

**CHAPTER 4**

**Data Analysis**

**Introduction**

This research study was conducted to examine the differences in attitudes and beliefs about student socialization between virtual and traditional teachers of cyber school students in Pennsylvania. Data collection was open for a four week window between April 23, 2019 and May 20, 2019 in which the recruitment for participants was sent out three times. The first request netted 46 responses, the second request netted an additional 27 new responses, and the third request netted 3 new responses. During this window, 76 total responses were received on the Survey Monkey survey tool, with 65 of those responses being complete.

**Data Screening**

Data Analysis was conducted through statistical analysis on SPSS, Version 24. An alpha level .05 was used to examine significance. Data was exported from Survey Monkey into Excel and then uploaded into SPSS and recoded into numeric variables. In performing the pre-data analysis and data-screening, determinations needed to be made to addresses issues in data quality. In dealing with missing data, the decision was made to eliminate all incomplete responses, bringing the number of responses from 76 to 65. Eight cases (4, 10, 39, 51, 52, 69, 73,75) were eliminated for incomplete data. Cases 34, 53, and 67 were eliminated because they selected “No” for the informed consent and therefore did not complete the survey. Additionally, case 43 listed AGE as “Over 50,” which was recoded into “55”. Data was screened for unusual values using frequency tables and descriptive statistics but none were identified. Descriptive statistics were used to examine the data for normality. Skewness and Kurtosis were between -1 and 1, therefore the data is normally distributed. Additionally, QQ plots were observed to be normal for both attitudes and beliefs. No transformation is necessary.

**Demographics**

The final population sample after all screening was performed, was majority female (95.4%). The ethnicity of participants was 98.5% white. The mean age of participants was 37.98 (+/- 8.72), while the median was 35.67 (range = 25-68). The majority of participants (67.7%) have completed a Master’s Degree and with the remaining participants (32.3%) having completed a Bachelor’s Degree. Slightly more participants (61.5%) are currently employed in a Brick and Mortar setting, while 38.5% are currently employed in a Virtual School setting. Within the population sampled, 92.3% have been a student in an online course. The mean number of years teaching in Brick and Mortar was 11.00 years (+/- 8.33), while the mean was 10.80 years (range= 0-28). The mean number of years teaching in Virtual was 1.35 years (+/- 2.32), while the median was .57 years (range= 0-9).

Table 1

*Population Sample Demographics N(%)*

|  |  |  |
| --- | --- | --- |
|  |  | N (%) |
| Gender | Male | 3 (4.6%) |
|  | Female | 62 (95.4%) |
| Ethnicity | White | 64 (98.5%) |
|  | Other | 1 (1.5%) |
| Educational Setting | Brick and Mortar | 40 (61.5%) |
|  | Virtual | 25 (38.5%) |
| Level of Education | Bachelor’s Degree | 21 (32.3%) |
|  | Master’s Degree | 44 (67.7%) |

In the following two tables provide an overview of the total frequencies of responses for brick and mortar students and cyber school students. This information is further broken down for clarification within each subsequent subproblems.

Table 2

*Frequencies of Responses for Brick and Mortar Students N (%)*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Question | Edu. Setting | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| I believe that there is a need to encourage socialization of students in the brick and mortar learning environment. | TraditionalVirtual | 1 (2.5%)2 (8%) | 1 (2.5%)3 (12%) | 7 (17.5%)3 (12%) | 17 (42.5%)15 (60%) | 14 (35%)2 (8%) |
| I believe that brick and mortar students are lacking in appropriate social skills. | TraditionalVirtual | 0 (0%)0 (0%) | 14 (35%)6 (24%) | 8 (20%)9 (36%) | 15 (37.5%)9 (36%) | 3 (7.5%)1 (4%) |
| I think brick and mortar students need more peer socialization. | TraditionalVirtual | 2 (5%)1 (4%) | 11 (27.5%)11 (44%) | 9 (22.5%)7 (28%) | 16 (40%)5 (20%) | 2 (5%)1 (4%) |
| I believe that brick and mortar classrooms promote social learning. | TraditionalVirtual | 0 (0%)0 (0%) | 0 (0%)3 (12%) | 4 (10%)3 (12%) | 24 (60%)17 (68%) | 12 (30%)2 (8%) |
| I am concerned about the lack of socialization for brick and mortar students | TraditionalVirtual | 7 (17.5%)3 (12%) | 19 (47.5%)14 (56%) | 5 (12.5%)7 (28%) | 3 (7.5%)1 (4%) | 6 (15%)0 (0%) |
| I believe that social interaction helps brick and mortar students learn. | TraditionalVirtual | 0 (0%)0 (0%) | 1 (2.5%)1 (4%) | 1 (2.5%)1 (4%) | 22 (55%)17 (68%) | 16 (40%)6 (24%) |
| I think there are effective ways for students to socialize in the brick and mortar environment. | TraditionalVirtual | 0 (0%)0 (0%) | 0 (0%)0 (0%) | 1 (2.5%)0 (0%) | 23 (57.5%)15 (60%) | 16 (40%)10 (40%) |
| I think students can achieve meaningful social interactions in-person in a brick and mortar school. | TraditionalVirtual | 0 (0%)0 (0%) | 0 (0%)0 (0%) | 0 (0%)0 (0%) | 19 (47.5%)16 (64%) | 21 (52.5%)9 (36%) |
| I think that brick and mortar schools provide a social and interactive learning environment. | TraditionalVirtual | 0 (0%)0 (0%) | 0 (0%)1 (4%) | 3 (7.5%)2 (8%) | 19 (47.5%)19 (76%) | 18 (45%)3 (12%) |
| I believe that brick and mortar students should be involved in extra-curricular activities outside of the classroom. | TraditionalVirtual | 0 (0%)0 (0%) | 0 (0%)1 (4%) | 3 (7.5%)1 (4%) | 21 (52.5%)18 (72%) | 16 (40%)5 (20%) |

Table 3

*Frequencies of Responses for Cyber School Students N (%)*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Question | Educational Setting | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| I believe that there is a need to encourage socialization of students in the virtual learning environment. | TraditionalVirtual | 0 (0%)0 (0%) | 0 (0%)0 (0%) | 2 (5%)0 (0%) | 14 (35%)15 (60%) | 24 (60%)25 (10%) |
| I believe that virtual school students are lacking in appropriate social skills. | TraditionalVirtual | 0 (0%)0 (0%) | 2 (5%)13 (52%) | 10 (25%)4 (16%) | 16 (40%)5 (20%) | 12 (30%)3 (12%) |
| I think cyber school students need more peer socialization. | TraditionalVirtual | 0 (0%)0 (0%) | 0 (0%)2 (8%) | 6 (15%)3 (12%) | 20 (50%)17 (68%) | 14 (35%)3 (12%) |
| I believe that virtual classrooms promote social learning. | TraditionalVirtual | 2 (5%)0 (0%) | 23 (57.5%)2 (8%) | 13 (32.5%)5 (20%) | 2 (5%)17 (68%) | 0 (0%)1 (4%) |
| I am concerned about the lack of socialization for cyber school students. | TraditionalVirtual | 0 (0%)1 (4%) | 2 (5%)7 (28%) | 2 (5%)10 (40%) | 20 (50%)4 (16%) | 16 (40%)3 (12%) |
| I believe that social interaction helps virtual school students learn. | TraditionalVirtual | 0 (0%)0 (0%) | 6 (15%)0 (0%) | 10 (25%)1 (4%) | 16 (40%)19 (76%) | 8 (20%)5 (20%) |
| I think there are effective ways for students to socialize in the virtual school environment. | TraditionalVirtual | 0 (0%)0 (0%) | 9 (22.5%)1 (4%) | 15 (37.5)3 (12%) | 14 (35%)17 (68%) | 2 (5%)4 (16%) |
| I think students can achieve meaningful social interactions virtually in a cyber school. | TraditionalVirtual | 0 (0%)0 (0%) | 21 (52.5%)1 (4%) | 13 (32.5%)3 (12%) | 6 (15%)15 (60%) | 0 (0%)0 (0%) |
| I think that cyber schools provide a social and interactive learning environment. | TraditionalVirtual | 2 (5%)1 (4%) | 22 (55%)1 (4%) | 12 (30%)4 (16%) | 4 (10%)18 (72%) | 0 (0%)1 (4%) |
| I believe that cyber school students should be involved in extra-curricular activities outside of the classroom.  | TraditionalVirtual | 0 (0%)0 (0%) | 1 (2.5%)0 (0%) | 0 (0%)2 (8%) | 14 (35%)10 (40%) | 25 (62.5%)13 (52%) |

Sub-Problem 1

Sub-problem 1, what are the attitudes of traditional teachers about socialization of brick and mortar school students, was analyzed by using frequency distribution and other descriptive statistics. The attitudes of traditional teachers about the socialization of brick and mortar school students had a mean score of 18.95 (sd =2.46), while the median was 18.46 (15-24). The question which was most strongly agreed with was demonstrated that brick and mortar teachers think students can achieve meaningful social interactions in-person in a brick and mortar school. The question which was most strongly disagreed upon was that brick and mortar teachers are concerned about the lack of socialization for brick and mortar students.

Table 4

*Attitudes of Brick and Mortar Teachers towards Brick and Mortar Students N (%)*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Question | Educational Setting | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| I think brick and mortar students need more peer socialization.  | Traditional | 2 (5%) | 11 (27.5%) | 9 (22.5%) | 16 (40%) | 2 (5%) |
| I am concerned about the lack of socialization for brick and mortar students | Traditional | 7 (17.5%) | 19 (47.5%) | 5 (12.5%) | 3 (7.5%) | 6 (15%) |
| I think there are effective ways for students to socialize in the brick and mortar environment.  | Traditional | 0 (0%) | 0 (0%) | 1 (2.5%) | 23 (57.5%) | 16 (40%) |
| I think students can achieve meaningful social interactions in-person in a brick and mortar school. | Traditional | 0 (0%) | 0 (0%) | 0 (0%) | 19 (47.5%) | 21 (52.5%) |
| I think that brick and mortar schools provide a social and interactive learning environment. | Traditional | 0 (0%) | 0 (0%) | 3 (7.5%) | 19 (47.5%) | 18 (45%) |

Sub-Problem 2

Sub-problem 2, what are the attitudes of traditional teachers about socialization of cyber school students, was analyzed by using frequency distribution and other descriptive statistics. The attitudes of traditional teachers about the socialization of cyber school students had a mean score of 16.75 (sd =1.84), while the median was 16.59 (14-20). The response which was most strongly agreed with was that brick and mortar teachers are concerned about the lack of socialization for cyber school students. The response which was most strongly disagreed upon was that cyber schools provide a social and interactive learning environment.

Table 5

*Attitudes of Brick and Mortar Teachers towards Cyber School Students N (%)*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Question | Educational Setting | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| I think cyber school students need more peer socialization. | Traditional | 0 (0%) | 0 (0%) | 6 (15%) | 20 (50%) | 14 (35%) |
| I am concerned about the lack of socialization for cyber school students. | Traditional | 0 (0%) | 2 (5%) | 2 (5%) | 20 (50%) | 16 (40%) |
| I think there are effective ways for students to socialize in the virtual school environment. | Traditional | 0 (0%) | 9 (22.5%) | 15 (37.5) | 14 (35%) | 2 (5%) |
| I think students can achieve meaningful social interactions virtually in a cyber school. | Traditional | 0 (0%) | 21 (52.5%) | 13 (32.5%) | 6 (15%) | 0 (0%) |
| I think that cyber schools provide a social and interactive learning environment. | Traditional | 2 (5%) | 22 (55%) | 12 (30%) | 4 (10%) | 0 (0%) |

Sub-Problem 3

Sub-problem 3, what are the attitudes of cyber school teachers about socialization of brick and mortar school students, was analyzed by using frequency distribution and other descriptive statistics. The attitudes of cyber school teachers about socialization of brick and mortar school students had a mean score of 17.72 (sd =1.77), while the median was 17.30 (16-22). The response that was most strongly agreed upon by cyber school teachers was that students can achieve meaningful social interactions in-person in a brick and mortar school. The question that was most strongly disagreed upon by cyber school teachers was if they are concerned about the lack of socialization for brick and mortar students.

 *Attitudes of Virtual Teachers towards Brick and Mortar Students N (%)*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Question | Educational Setting | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| I think brick and mortar students need more peer socialization.  | Virtual | 1 (4%) | 11 (44%) | 7 (28%) | 5 (20%) | 1 (4%) |
| I am concerned about the lack of socialization for brick and mortar students | Virtual | 3 (12%) | 14 (56%) | 7 (28%) | 1 (4%) | 0 (0%) |
| I think there are effective ways for students to socialize in the brick and mortar environment.  | Virtual | 0 (0%) | 0 (0%) | 0 (0%) | 15 (60%) | 10 (40%) |
| I think students can achieve meaningful social interactions in-person in a brick and mortar school. | Virtual | 0 (0%) | 0 (0%) | 0 (0%) | 16 (64%) | 9 (36%) |
| I think that brick and mortar schools provide a social and interactive learning environment. | Virtual | 0 (0%) | 1 (4%) | 2 (8%) | 19 (76%) | 3 (12%) |

Sub-Problem 4

Sub-problem 4, what are the attitudes of cyber school teachers about socialization of cyber school students, was analyzed by using frequency distribution and other descriptive statistics. The attitudes of cyber school teachers about socialization of cyber school students had a mean score of 18.56 (sd =1.89), while the median was 18.43 (15-22). Cyber school teachers most strongly agree that there are effective ways for students to socialize in the virtual school environment. Cyber school teachers most strongly disagree with the question asking if they are concerned about the socialization of cyber school students.

 Table 5

*Attitudes of Virtual Teachers towards Cyber School Students N (%)*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Question | Educational Setting | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| I think cyber school students need more peer socialization. | Virtual | 0 (0%) | 2 (8%) | 3 (12%) | 17 (68%) | 3 (12%) |
| I am concerned about the lack of socialization for cyber school students. | Virtual | 1 (4%) | 7 (28%) | 10 (40%) | 4 (16%) | 3 (12%) |
| I think there are effective ways for students to socialize in the virtual school environment. | Virtual | 0 (0%) | 1 (4%) | 3 (12%) | 17 (68%) | 4 (16%) |
| I think students can achieve meaningful social interactions virtually in a cyber school. | Virtual | 0 (0%) | 1 (4%) | 3 (12%) | 15 (60%) | 0 (0%) |
| I think that cyber schools provide a social and interactive learning environment. | Virtual | 1 (4%) | 1 (4%) | 4 (16%) | 18 (72%) | 1 (4%) |

Sub-Problem 5

Sub-problem 5, what are the beliefs of traditional teachers about socialization of brick and mortar school students, was analyzed by using frequency distribution and other descriptive statistics. The beliefs of traditional teachers about socialization of brick and mortar school students had a mean score of 20.08 (sd= 2.08), while the median was 20.00 (14-25). Traditional teachers most strongly believe that social interaction helps brick and mortar students learn. They most strongly disagree that brick and mortar students are lacking in appropriate social skills.

Table 6

*Beliefs of Brick and Mortar teachers towards Brick and Mortar Students N (%)*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Question | Educational Setting | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| I believe that there is a need to encourage socialization of students in the brick and mortar learning environment. | Traditional | 1 (2.5%) | 1 (2.5%) | 7 (17.5%) | 17 (42.5%) | 14 (35%) |
| I believe that brick and mortar students are lacking in appropriate social skills. | Traditional | 0 (0%) | 14 (35%) | 8 (20%) | 15 (37.5%) | 3 (7.5%) |
| I believe that brick and mortar classrooms promote social learning. | Traditional | 0 (0%) | 0 (0%) | 4 (10%) | 24 (60%) | 12 (30%) |
| I believe that social interaction helps brick and mortar students learn. | Traditional | 0 (0%) | 1 (2.5%) | 1 (2.5%) | 22 (55%) | 16 (40%) |
| I believe that brick and mortar students should be involved in extra-curricular activities outside of the classroom. | Traditional | 0 (0%) | 0 (0%) | 3 (7.5%) | 21 (52.5%) | 16 (40%) |

Sub-Problem 6

Sub-problem 6, what are the beliefs of traditional teachers about socialization of cyber school students, was analyzed by using frequency distribution and other descriptive statistics. The beliefs of traditional teachers about socialization of cyber school students had a mean score of 19.10 (sd= 1.97), while the median was 19.08 (15-23). Traditional teachers most strongly believe that cyber school students should be involved in extracurricular activities outside of the classroom. Traditional teachers most strongly disagree with the belief that virtual classrooms promote social learning.

Table 7

*Beliefs of Brick and Mortar Teachers towards Cyber School Students N (%)*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Question | Educational Setting | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| I believe that there is a need to encourage socialization of students in the virtual learning environment. | Traditional | 0 (0%) | 0 (0%) | 2 (5%) | 14 (35%) | 24 (60%) |
| I believe that virtual school students are lacking in appropriate social skills. | Traditional | 0 (0%) | 2 (5%) | 10 (25%) | 16 (40%) | 12 (30%) |
| I believe that virtual classrooms promote social learning. | Traditional | 2 (5%) | 23 (57.5%) | 13 (32.5%) | 2 (5%) | 0 (0%) |
| I believe that social interaction helps virtual school students learn. | Traditional | 0 (0%) | 6 (15%) | 10 (25%) | 16 (40%) | 8 (20%) |
| I believe that cyber school students should be involved in extra-curricular activities outside of the classroom.  | Traditional | 0 (0%) | 1 (2.5%) | 0 (0%) | 14 (35%) | 25 (62.5%) |

Sub-Problem 7

Sub-problem 7, what are the beliefs of cyber school teachers about socialization of brick and mortar school students, was analyzed by using frequency distribution and other descriptive statistics. The beliefs of cyber school teachers about socialization of brick and mortar school students had a mean score of 18.60 (sd=2.10), while the median was 18.60 (15-23). Cyber school teachers most strongly agree that social interaction helps brick and mortar students learn. Cyber school teachers most strongly disagree with the belief that that there is a need to encourage socialization of students in the brick and mortar environment.

 Table 8

*Beliefs of Virtual Teachers towards Brick and Mortar Students N (%)*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Question | Educational Setting | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| I believe that there is a need to encourage socialization of students in the brick and mortar learning environment. | Virtual | 2 (8%) | 3 (12%) | 3 (12%) | 15 (60%) | 2 (8%) |
| I believe that brick and mortar students are lacking in appropriate social skills. | Virtual | 0 (0%) | 6 (24%) | 9 (36%) | 9 (36%) | 1 (4%) |
| I believe that brick and mortar classrooms promote social learning. | Virtual | 0 (0%) | 3 (12%) | 3 (12%) | 17 (68%) | 2 (8%) |
| I believe that social interaction helps brick and mortar students learn. | Virtual | 0 (0%) | 1 (4%) | 1 (4%) | 17 (68%) | 6 (24%) |
| I believe that brick and mortar students should be involved in extra-curricular activities outside of the classroom. | Virtual | 0 (0%) | 1 (4%) | 1 (4%) | 18 (72%) | 5 (20%) |

Sub-Problem 8

Sub-problem 8, what are the beliefs of cyber school teachers about socialization of cyber school students, was analyzed by using frequency distribution and other descriptive statistics. The beliefs of cyber school teachers about socialization of cyber school students had a mean score of 19.60 (sd= 1.58), while the median was 19.70 (16-23). Cyber school teachers most strongly agreed with the belief that cyber school students should be involved in extracurricular activities outside of the classroom. Cyber school teachers most strongly disagreed with the belief that virtual school students are lacking in appropriate social skills.

 Table 9

*Beliefs of Cyber School Teachers towards Cyber School Students N (%)*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Question | Educational Setting | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| I believe that there is a need to encourage socialization of students in the virtual learning environment. | Virtual | 0 (0%) | 0 (0%) | 0 (0%) | 15 (60%) | 25 (10%) |
| I believe that virtual school students are lacking in appropriate social skills. | Virtual | 0 (0%) | 13 (52%) | 4 (16%) | 5 (20%) | 3 (12%) |
| I believe that virtual classrooms promote social learning. | Virtual | 0 (0%) | 2 (8%) | 5 (20%) | 17 (68%) | 1 (4%) |
| I believe that social interaction helps virtual school students learn. | Virtual | 0 (0%)  | 0 (0%) | 1 (4%) | 19 (76%) | 5 (20%) |
| I believe that cyber school students should be involved in extra-curricular activities outside of the classroom. | Virtual | 0 (0%) | 0 (0%) | 2 (8%) | 10 (40%) | 13 (52%) |

Sub-Problem
Sub-problem 9, what are the differences in attitudes between virtual teachers and traditional teachers on the socialization of cyber school students, was analyzed using an Independent Sample T-Test. An independent-samples T test comparing the means of the attitudes between virtual teachers and traditional teachers on the socialization of cyber school students, found a significant difference between the means of the two groups (t(63)= -3.82, p<.05). The mean of the traditional teachers (M=16.75, sd=1.84) was significantly lower than the mean of the virtual school teachers (M=18.56, sd=1.89). Effect size (d=.97) was large. Thus, the null hypothesis was rejected and the alternative hypothesis was supported, showing that there are differences in attitudes of traditional and cyber school teachers about socialization of cyber school students.

Both virtual teachers (68%) and traditional teachers (50%) indicated that they think cyber school students need more peer socialization. Note that 50% of traditional teachers indicated that they are concerned about the lack of socialization of cyber school students, while 40% of virtual school teachers responded neutral. The majority of virtual teachers indicated that they agree that there are effective ways for students to socialize in the virtual school environment (68%) and that cyber schools provide a social and interactive learning environment (72%). Comparatively, only 35% of traditional teachers agree that there are effective ways for students to socialize in the virtual environment and only 10% agree that cyber schools provide a social and interactive learning environment.

Table 10

*Percent of Responses for Attitudes towards Cyber School Students*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Question | Educational Setting | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| I think cyber school students need more peer socialization. | TraditionalVirtual | 0%0% | 0%8% | 15%12% | 50%68% | 35%12% |
| I am concerned about the lack of socialization for cyber school students. | TraditionalVirtual | 0%4% | 5%28% | 5%40% | 50%16% | 40%12% |
| I think there are effective ways for students to socialize in the virtual school environment. | TraditionalVirtual | 0%0% | 22.5%4% | 37.5%12% | 35%68% | 5%16% |
| I think students can achieve meaningful social interactions virtually in a cyber school. | TraditionalVirtual | 0%0% | 52.5%4% | 32.5%12% | 15%60% | 0%0% |
| I think that cyber schools provide a social and interactive learning environment. | TraditionalVirtual | 5%4% | 55%4% | 30%16% | 10%72% | 0%4% |

Sub-Problem 10

Sub-problem 10, what are the differences in attitudes between virtual teachers and traditional teachers on the socialization of brick and mortar students, was analyzed using an Independent Sample T-Test. An independent-samples T test comparing the means of the attitudes between virtual teachers and traditional teachers on the socialization of brick and mortar students, found a significant difference between the means of the two groups (t(63)=2.17, p<.05). The mean of the traditional teachers (M=18.95, sd=2.46) was significantly higher than the mean of the virtual school teachers (M=17.72, sd=1.77). Effect size (d=.57) was medium. Thus, the null hypothesis was rejected and the alternative hypothesis was supported, showing that there are differences in attitudes of traditional and cyber school teachers about socialization of brick and mortar students.

The majority of traditional teachers (40%) agree that brick and mortar students need more peer socialization, while the majority of virtual teachers (44%) disagree. Both groups of teachers selected agree or strongly agree for 100% of responses when considering if students can achieve meaningful social interactions in-person in a brick and mortar school. Similarly, 100% of virtual teachers and 97.5% of traditional teachers indicated that they agree or strongly agree that there are effective ways for students to socialize in the brick and mortar environment.

Table 11

*Percent of Responses of Attitudes towards Brick and Mortar Students*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Question | Educational Setting | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| I think brick and mortar students need more peer socialization.  | TraditionalVirtual | 5%4% | 27.5%44% | 22.5%28% | 40%20% | 5%4% |
| I am concerned about the lack of socialization for brick and mortar students. | TraditionalVirtual | 17.5%12% | 47.5%56% | 12.5%28% | 7.5%4% | 15%0% |
| I think there are effective ways for students to socialize in the brick and mortar environment.  | TraditionalVirtual | 0%0% | 0%0% | 2.5%0% | 57.5%60% | 40%40% |
| I think students can achieve meaningful social interactions in-person in a brick and mortar school. | TraditionalVirtual | 0%0% | 0%0% | 0%0% | 47.5%64% | 52.5%36% |
| I think that brick and mortar schools provide a social and interactive learning environment. | TraditionalVirtual | 0%0% | 0%4% | 7.5%8% | 47.5%76% | 45%12% |

Sub-Problem 11

Sub-problem 11, what are the differences in beliefs between virtual teachers and traditional teachers on the socialization of cyber school students, was analyzed using an Independent Sample T-Test. An independent-samples T test comparing the means of the beliefs between virtual teachers and traditional teachers on the socialization of cyber school students, found no significant difference between the means of the two groups (t(63)=-1.07, p>.05). The mean of the traditional teachers (M=19.10, sd=1.97) was not significantly different than the mean of the virtual school teachers (M=19.60, sd=1.58). Effect size (d=.28) is small. Thus, the null hypothesis is supported that there is no difference in beliefs of traditional and cyber school teachers about socialization of cyber school students.

Traditional teachers tended to agree (40%) that virtual school students are lacking in appropriate social skills, while virtual school teachers tended to disagree (52%). Both traditional teachers (40%) and virtual teachers (76%) agreed that they believe that social interaction helps virtual students learn, yet only 5% of traditional teachers believe that virtual classrooms promote social learning, while 68% of traditional teachers do.

Table 12

*Percent of Responses for Beliefs towards Cyber School Students*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Question | Educational Setting | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| I believe that there is a need to encourage socialization of students in the virtual learning environment. | TraditionalVirtual | 0%0% | 0%0% | 5%0% | 35%60% | 60%40% |
| I believe that virtual school students are lacking in appropriate social skills. | TraditionalVirtual | 0%0% | 5%52% | 25%16% | 40%20% | 30%12% |
| I believe that virtual classrooms promote social learning. | TraditionalVirtual | 5%0% | 57.5%8% | 32.5%20% | 5%68% | 04% |
| I believe that social interaction helps virtual school students learn. | TraditionalVirtual | 0%0% | 15%0% | 25%4% | 40%76% | 20%20% |
| I believe that cyber school students should be involved in extra-curricular activities outside of the classroom.  | TraditionalVirtual | 0%0% | 2.5%0% | 0%8% | 35%40% | 62.5%52% |

Sub-Problem 12

Sub-problem 12, what are the differences in beliefs between virtual teachers and traditional teachers on the socialization of brick and mortar students, was analyzed using an Independent Sample T-Test. An independent-samples T test comparing the means of the attitudes between virtual teachers and traditional teachers on the socialization of brick and mortar students, found a significant difference between the means of the two groups (t(63)=2.77, p<.05). The mean of the traditional teachers (M=20.08, sd=2.08) was significantly higher than the mean of the virtual school teachers (M=18.60, sd=2.01). Effect size (d=.72) was medium approaching large. Thus, the null hypothesis was rejected and the alternative hypothesis was supported, showing that there are differences in beliefs of traditional and cyber school teachers about socialization of brick and mortar students.

 The majority of both traditional teachers (95%) and virtual teachers (92%) indicated that they agree or strongly agree that social interaction helps brick and mortar students learn. Note that 90% of traditional teachers selected agree (60%) or strongly agree (30%) to indicate that they believe that brick and mortar classrooms promote social learning. More virtual teachers (72%) than traditional teachers (52.5%) agree that brick and mortar students should be involved in extracurricular activities outside of the classroom.

Table 13

*Percent of Responses for Beliefs towards Brick and Mortar Students*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Question | Educational Setting | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| I believe that there is a need to encourage socialization of students in the brick and mortar learning environment. | TraditionalVirtual | 2.5%8% | 2.5%12% | 17.5%12% | 42.5%60% | 35%8% |
| I believe that brick and mortar students are lacking in appropriate social skills. | TraditionalVirtual | 0%0% | 35%24% | 20%36% | 37.5%36% | 7.5%4% |
| I believe that brick and mortar classrooms promote social learning. | TraditionalVirtual | 0%0% | 0%12% | 10%12% | 60%68% | 30%8% |
| I believe that social interaction helps brick and mortar students learn. | TraditionalVirtual | 0%0% | 2.5%4% | 2.5%4% | 55%68% | 40%24% |
| I believe that brick and mortar students should be involved in extra-curricular activities outside of the classroom | TraditionalVirtual | 0%0% | 0%4% | 7.5%4% | 52.5%72% | 40%20% |

**Supplemental Analysis**

The differences in attitude by gender were analyzed through an Independent Sample T-Test. An independent-samples T test comparing the means of attitude by gender found no significant difference between the means of the two groups (t(63)=-.352, p>.05). The mean of the males (M=35.33, sd=1.53) was not significantly different than the mean of females (M=35.95, sd=3.01). Effect size (d=.26) was small. Although there was no significant difference, it was considered that there were only three male teachers, and therefore the lack of any possible differences may not be apparent with such a small N.

The differences in beliefs by gender were analyzed through an Independent Sample T-Test. An independent-samples T test comparing the means of belief by gender found no significant difference between the means of the two groups (t(63)=-.596, p>.05). The mean of the males (M=37.67, sd=2.08) was not significantly different than the mean of females (M=38.85, sd=3.41). Effect size (d=.42) was small. Although there was no significant difference, it was considered that there were only three male teachers, and therefore the lack of any possible differences may not be apparent with such a small N.

Attitude by age was analyzed using Pearson’s Correlation Coefficient. A Pearson correlation was calculated examining the relationship between participants’ age and attitude. A weak correlation that was not significant was found (*r* (63) = -.091, p>.05). Age is not related to attitude.

Belief by age was analyzed using Pearson’s Correlation Coefficient. A Pearson correlation was calculated examining the relationship between participants’ age and belief. A weak correlation that was not significant was found (*r* (63) = .011, p>.05). Age is not related to belief.

Attitude by years teaching in brick and mortar was analyzed using Pearson’s Correlation Coefficient. A Pearson correlation was calculated examining the relationship between participants’ attitude and number of years teaching in brick and mortar. A weak correlation that was not significant was found (*r* (63) = -.149, p>.05). Years teaching in brick and mortar is not related to attitude.

Attitude by years teaching in virtual was analyzed using Pearson’s Correlation Coefficient. A Pearson correlation was calculated examining the relationship between participants’ attitude and number of years teaching in virtual. A weak correlation that was not significant was found (*r* (63) = -.055, p>.05). Years teaching in virtual is not related to attitude.

Belief by years teaching in brick and mortar was analyzed using Pearson’s Correlation Coefficient. A Pearson correlation was calculated examining the relationship between participants’ belief and number of years teaching in brick and mortar. A weak correlation that was not significant was found (*r* (63) = -.093, p>.05). Years teaching in brick and mortar is not related to belief.

Belief by years teaching in virtual was analyzed using Pearson’s Correlation Coefficient. A Pearson correlation was calculated examining the relationship between participants’ belief and number of years teaching in virtual. A weak correlation that was not significant was found (*r* (63) = -.151, p>.05). Years teaching in virtual is not related to belief.

The relationship between attitude and belief was analyzed using Pearson’s Correlation Coefficient. A Pearson correlation coefficient was calculated for the relationship between total attitude and total beliefs. A strong positive correlation was found (r (63) = .607, p<.001), indicating a significant linear relationship between the two variables. Participants with stronger beliefs tend to have stronger attitudes.

The differences in attitudes by whether or not a participant has been a student in an online course were analyzed through an Independent Sample T-Test. An independent-samples T test comparing the means of attitude by online course found no significant difference between the means of the two groups (t(63)=-.883, p>.05). The mean of those who have taken an online course (M=38.72, sd=3.41) was not significantly different than the mean of those who have not taken an online course (M=39.80, sd=2.59). Although there was no significant difference, it was considered that there were only five participants who had not been a student in an online course, and therefore the lack of any possible differences may not be apparent with such a small N.

The differences in beliefs by whether or not a participant has been a student in an online course were analyzed through an Independent Sample T-Test. An independent-samples T test comparing the means of beliefs by online course found no significant difference between the means of the two groups (t(63)=-.-.691, p>.05). The mean of those who have taken an online course (M=39.80, sd=2.56) was not significantly different than the mean of those who have not taken an online course (M=38.72, sd=3.42). Although there was no significant difference, it was considered that there were only five participants who had not been a student in an online course, and therefore the lack of any possible differences may not be apparent with such a small N.

**CHAPTER 5**

**Discussion**

**Summary**

The present study was conducted to determine the attitudes and beliefs of two types of teachers, traditional teachers (N=40) and virtual school teachers (N=25), on the socialization of cyber school and brick and mortar students. It was hypothesized that there are differences in both attitudes and beliefs of traditional and cyber school teachers about socialization of cyber school and brick and mortar students. The hypothesis was partially supported because there was difference between the attitudes of brick and mortar teachers and cyber school teachers on the socialization of both cyber school students and brick and mortar students, as well as a difference between the beliefs of brick and mortar teachers and cyber school teachers on the socialization of brick and mortar students. However, there were no significant differences in the beliefs of brick and mortar teachers and virtual teachers on the socialization of cyber school students. Data collection took place using a researcher-created online survey over a period of four weeks. Statistical analysis was conducted using SPSS Version 24.

**Discussion**

There were differences in attitudes of traditional and cyber school teachers about socialization of cyber school students. Virtual school teachers find that there are effective ways for students to socialize in the virtual environment and think that cyber schools provide a social and interactive learning environment, while comparatively smaller numbers of traditional teachers feel the same way. Additionally, traditional teachers were more concerned than virtual teachers about the lack of socialization of cyber school students. This difference may be caused by a lack of awareness and understanding of brick and mortar teachers about the type of interactions and socialization opportunities that are occurring in the cyber school environment. Furthermore, virtual school teachers may be demonstrating a bias towards their own work environment which could potentially lead to inflated attitudes about the socialization that takes place in their learning environment.

These results are similar to earlier work that concluded collaboration and interaction in the online environment may not be as strong as a factor of student success as it is in the face-to-face environment (Szeto & Cheng, 2016; Zhao, Sullivan, & Mellenius, 2014). Both the present study and the previous research point to barriers in fostering appropriate opportunities for student interaction in the virtual learning environment. Additionally, brick and mortar teachers may not be aware of the types of learning opportunities available to virtual school students, which may have impacted why they do not believe that cyber schools provide a social and interactive learning environment.

 Furthermore, there are differences in attitudes of traditional and cyber school teachers about socialization of brick and mortar students. Despite the fact that both types of teachers feel that there are effective ways for students to socialize in brick and mortar schools, more traditional teachers than virtual school teachers feel that brick and mortar students need more peer socialization. These results are similar to earlier research which found that home-schooled students demonstrated higher social skills than brick and mortar students (Koehler et al., 2002), as well as other research that shows that many of the interactions in the brick and mortar classroom are not demonstrations of positive social behaviors (Brint, Contreras, and Matthews, 2001). It is plausible that brick and mortar teachers feel that their students need more peer socialization because many of the observed behaviors of these students may be negative. Additionally, brick and mortar teachers may feel more strongly than virtual school teachers about the need for socialization of brick and mortar students because they are more exposed to and aware of that population.

Conversely, there are no differences in beliefs of brick and mortar teachers and cyber school teachers about the socialization of cyber school students. The majority of both traditional and virtual teachers believe that there is a need to encourage socialization of students in the virtual learning environment and that social interaction helps virtual school students learn. This research is similar to earlier work that suggests that virtual interactions may not be as powerful of a learning tool as in-person collaboration (Agudo-Peregrina et al., 2014; Joksimovića et al., 2015; Lee, Young Yoon, & Hyun Lee, 2013). Additionally, both types of teachers agree that cyber school students should be involved in extra-curricular activities outside of the classroom. This is similar to earlier research related to homeschooled children where homeschooled children were shown to be significantly lonelier than private school children (McKinley, 2007). These results demonstrate that both brick and mortar and virtual school teachers believe that social interaction can help virtual school students learn and should be encouraged, therefore suggesting that virtual school students would benefit from meaningful interactions among peers. These results may stem from both types of teachers observations and experiences in seeing how social opportunities have helped students or have yielded positive results in the classroom.

Furthermore, there are differences in the beliefs of brick and mortar teachers and cyber school teachers about brick and mortar students. While the majority of both types of teachers indicated that they believe that social interaction helps brick and mortar students learn, more traditional than virtual teachers believe that brick and mortar classrooms promote social learning. Additionally, traditional teachers more strongly believe that there is a need to encourage socialization of students in the brick and mortar learning environment. This supports earlier research that social learning and constructivism are a major trend in educational practice today and that present day educators are increasingly compelled to utilize interactive practices in the traditional classroom (Gunduz & Hursen, 2015; Krahenbuhl, 2016).

Moreover, the results from this study indicate three main findings, which are that social interaction is an important element of both learning environments, there is a need to promote the socialization of cyber school students, and brick and mortar teachers are more concerned than virtual school teachers about the socialization of students. In determining that social interaction is an important element of both learning environments, it can be seen that both types of teachers feel that socialization is important for any type of student. A possible reason for these results are that teachers are likely educated on Social Learning Theory and the works of Vygotsky and Bandura during their college-level teacher certification, and are therefore trained on the importance of utilizing social learning practices in the classroom.

There is a need to promote the socialization of cyber school students. Results of this study show that there is a greater level of concern for the socialization of cyber school students given the barriers to socialization in their learning environment. Despite the fact that past research is largely inconclusive as to the effectiveness of meaningful peer learning interactions in the virtual environment, the present study would indicate that teachers do not believe that online interactions are as powerful as in-person interactions (Bowers & Kumar, 2015; Deaton, 2015, Zhou et al,. 2016).

Brick and mortar school teachers are more concerned about student socialization than virtual school teachers. Teachers who are working in online learning environments may not be as concerned about student socialization because their experiences and observations working in the alternative learning environment may have changed their perceptions about what it means to be a student (or a teacher). Alternatively, teachers who choose to work in a non-traditional learning environment like a virtual school setting may already hold non-traditional values or perceptions about educational philosophy as a whole.

**Implications for Educators**

 The main purpose of this study was to address a gap in the literature by better understanding how teachers view the socialization of cyber school and brick and mortar school students. The first implication of this research study for educators to consider the role that socialization plays in their classroom and further analyze how social learning takes place during their class. Given that this research indicates that teachers feel that social interaction is an important part of the learning environment, teachers should use these results as an exercise in reflection of their classroom teaching and make adjustments to encourage social learning as needed. The second implication of this research study is for school leadership and administration to consider ways to foster positive peer collaboration and socialization in their respective learning environments. Given that the results of this research study indicated that there is a need to promote socialization of virtual school students, virtual school leaders and administrators should continually research, implement, and train staff on new synchronous and asynchronous opportunities for virtual student collaboration and communication. Additionally, school administrators should consider holding professional development trainings on ways to encourage social learning opportunities in both types of classrooms.

Best practices to promote social interaction can be incorporated into both types of school settings. In the brick and mortar classroom, students should be provided with daily opportunities to work as a collaborative group with peers. Student-centered station style learning is one technique that allows students to move throughout the classroom, completing assigned group activities at various stations. This encourages students to work as a team to accomplish a set of tasks, fostering communication and collaboration among the students. Additionally, Socratic circles provide students with an opportunity to engage in discussion as part of a community of conversation. During Socratic circles, students participate in dialogue with peers, both asking and responding to questions, to gain better understanding of a topic. This promotes socialization for students by providing an appropriate outlet for productive conversation.

In the virtual classroom, this activity can also be utilized during synchronous live session lessons. Students join on webcam and microphone and participate in the discussion much as they would in the physical classroom. In both settings, students should assign roles within the group to designate certain responsibilities of the group process, such as note taker or recorder, time keeper, and spokesperson or facilitator. Many other of the social methods used in the brick and mortar classroom can be modified to fit the virtual synchronous classroom as well.

Asynchronous virtual learning should also be designed to foster socialization among students. Teachers can create collaborative projects where students can complete assignments cooperatively using Google Docs, where students are able to complete portions of the work and see each other’s contributions in live time. This program also allows for a chat feature where students can communicate as they are working. Discussion board postings should be designed to encourage student interactions by using relevant student-focused questioning and requiring thoughtful responses by peers. Providing students with sample discussion responses and a clear rubric or checklist of expectations can help promote more meaningful student discussions. One suggestion to engage students in online discussions is to allow them to choose the topic, or specific prompt, that they’d like to respond to. This type of virtual discussion, while not live or proximal, can help to create a community element in the classroom and promote relationship-building communication opportunities.

**Limitations**

 Limitations exist within the present study. The researcher-created survey instrument may need to be further clarified for validity and reliability. Given that sampling was conducted in a limited demographic of Pennsylvania, it not be representative of the larger population and therefore results should not be generalized. The sample size of this study (N=65) was relatively small. Recruitment method was limited to social media postings on Facebook, and therefore may have excluded the opinions of individuals who do not use social media. Duration of study allowed for four weeks for data collection, which may have potentially limited the scope of the findings.

**Suggestions for Future Research**

The results of the present study provide many opportunities for future research. Further research is necessary in order to elaborate, clarify, and build upon the current findings. First, this study utilized a researcher-created survey tool for the first time, which can be further validated and deemed to be more reliable through additional pilot testing, usage, and modification. Second, this study allows for further opportunities to investigate why teachers feel a certain way about student socialization. A follow-up qualitative study investigating why teachers subscribe to certain attitudes and beliefs about socialization of students would be applicable and help support the literature. Third, given the limitations of this study, expanding the population sample to participants in a larger geographic region and with a larger sample size can help increase the generalizability of the current results.

**Conclusion**

In conclusion, this study was aimed at better understanding teacher attitudes and beliefs about the socialization of brick and mortar and cyber school students. The results of this study yielded three major outcomes: teachers believe that social interaction is an important element of both learning environments, teachers believe that there is a need to promote the socialization of cyber school students, and brick and mortar teachers are more concerned with student socialization than cyber school teachers. In relationship to the theoretical framework of Vygotsky’s Social Learning Theory, the results of the present study show support for the idea that peer social interaction is closely tied with learning, given the importance of this element as indicated by teachers. Additionally, given the uncertainties about the effectiveness of social learning in the virtual classroom, this study confirms that teachers of both type indicate the need to promote social learning and interaction in the virtual classroom.

**Appendix A: Survey Instrument**

Do you agree to the Informed Consent? Yes (form proceeds to survey) / No (form proceeds to thank you message)

Gender : Male/Female

Ethnicity: American Indian or Alaska Native/Asian/Black or African American/Hispanic or Latino/Native Hawaiian or Other Pacific Islander/White/Other
If Other, Please Describe: \_\_\_\_\_\_

Age: \_\_\_

Highest Level of Education Completed: Bachelor’s Degree / Master’s Degree / Doctoral Degree

What educational setting do you currently work in? Brick in Mortar / Virtual

Years of Teaching in Brick and Mortar: \_\_\_

Years of Teaching in Virtual School: \_\_\_

Have you ever been a student in an online course? Yes / No

Likert Scale 1-5
Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree

I believe that there is a need to encourage socialization of students in the brick and mortar learning environment.

I believe that brick and mortar students are lacking in appropriate social skills.

I think brick and mortar students need more peer socialization.

I believe that brick and mortar classrooms promote social learning.

I am concerned about the lack of socialization for brick and mortar students.

I believe that social interaction helps brick and mortar students learn.

I think there are effective ways for students to socialize in the brick and mortar environment.

I think students can achieve meaningful social interactions in-person.

I think that brick and mortar schools provide a social and interactive learning environment.

I believe that brick and mortar students should be involved in extra-curricular activities outside of the classroom.

I believe that there is a need to encourage socialization of students in the cyber school learning environment.

I believe that cyber school students are lacking in appropriate social skills.

I think cyber school students need more peer socialization.

I believe that cyber school classrooms promote social learning.

I am concerned about the lack of socialization for cyber school students.

I believe that social interaction helps cyber school students learn.

I think there are effective ways for students to socialize in the online environment.

I think students can achieve meaningful social interactions virtually.

I think that cyber schools provide a social and interactive learning environment.

I believe that cyber school students should be involved in extra-curricular activities outside of the classroom.

**Appendix B: Recruitment Post**

Subject Line: Research Participants Wanted

Dear Teachers:

 My name is Kelley McConnell and I am a Ph.D. student at Marywood University. I am conducting a research study. Its purpose is to identify and compare the differences in attitudes and beliefs about socialization between virtual and traditional teachers of cyber school students in Pennsylvania.

You are invited to participate in the study if you qualify. To qualify, you must hold valid Pennsylvania teaching certificate, teach in Pennsylvania, and have one or more years of teaching experience.

Benefits may include better understanding of teacher attitudes and beliefs towards cyber school socialization. This research will help to quantify attitudes and beliefs of brick and mortar teachers, compared with cyber schooled teachers, on socialization of cyber school students.

For your participation, you may be entered into a raffle for a chance to win a $50 Visa Gift Card.

Survey Link: [Socialization of Cyber School Students Survey](https://goo.gl/forms/eUtGzmnXIV5r9TV52)

This study has been approved by Marywood University’s Exempt Review Committee.

Sincerely,

Kelley McConnell, M.S.

570-510-5544

kjmcconnell@m.marywood.edu

**Appendix C: Informed Consent Form**

Informed Consent Form

Attitudes and Beliefs of Student Socialization

**Introduction**

You are invited to be in a research study about teacher attitude and beliefs about socialization of cyber school students. You were chosen as a possible participant because you are employed as a teacher in Pennsylvania. Please read this form. Ask any questions you may have before agreeing to take part in this study. This study is being conducted by Kelley McConnell, a Ph.D. candidate at Marywood University.

**Purpose - What the Study is About**

The purpose of this study is to identify and compare the differences in attitudes and beliefs about socialization between virtual and traditional teachers of cyber school students in Pennsylvania. This research will help to quantify attitudes and beliefs of brick and mortar teachers, compared with cyber schooled teachers, on socialization of cyber school students.

**Procedures - What You Will Be Asked to Do**

If you agree to be in this study, you will be asked to complete a 30 question online survey using Survey Monkey. This survey will take approximately 10 minutes of your time.

**Risks and Benefits**

The risks in this study are no greater than the risks experienced in daily life or activities. The benefit in this study is a contribution to the field of study in socialization of cyber schooled students.

**Payment/Rewards**

You can receive entry into a raffle for a $50 Visa Gift Card for taking part in this study.

**Confidentiality**

The records of this study will be kept private. Information used in any written or presented report will not make it possible to identify you. Only the principal investigator will have access to the research records. Records will be kept in a locked file. Records will be kept for one year. Then they will be destroyed through deletion of computer records. No computer transmission can be perfectly secure. However, reasonable efforts will be made to protect the confidentiality of your transmission.

**Taking Part is Voluntary**

Your participation is voluntary. Your decision to participate or not participate will not affect your current or future relations with the investigator. It will not affect your relations with your employer or Marywood University. You may withdraw at any time without penalty or loss of benefits to which you are entitled. You may withdraw from participation up until you submit the survey. If at any time during the survey process you wish to withdraw, simply exit the survey without saving your responses.

**Contacts and Questions**

The investigator conducting this study is Kelley McConnell, a Ph.D. Candidate at Marywood University.

You may ask questions now or later. If you have questions, you may contact the researcher at 570-510-5544 or kjmcconnell@m.marywood.edu.

You may also contact the research advisor, Alan Levine, at 570-348-6290 or levine@marywood.edu.

If you have questions related to the rights of research participants or research-related injuries (where applicable), please contact Ms. Courene M. Loftus, MPA, CIP, Marywood University’s Director of Human Participants Protection and Research Compliance, at (570) 961-4782 or cloftus@marywood.edu.

You may print a copy of this form to keep for your records.

**Statement of Consent**

I have read the above information. I have asked questions and have received answers. I consent to participate in this study.

By proceeding with this survey, I acknowledge that I have read and understood this form. I consent to participate in this study.

I agree to the above Informed Consent and meet all of the following eligibility requirements:

· hold valid Pennsylvania teaching certificate

· teach in Pennsylvania

· have one or more years of teaching experience

Yes

No

 **Appendix D: Teachers’ Attitudes, Beliefs, and Self-Efficacy about Multicultural Education**

Belief individual rights:

I believe that there is a need to protect the dignity of each culture.

I believe that individuals should be free to choose their religion.

I believe that each culture should be evaluated according to their own values and norms.

 I believe that each culture should be supported in order to improve himself.

General rights for man :

I believe that the recognition of different cultures helps to see the different options.

I believe that the value of the diversity of beliefs and way of life is an inseparable part of being human.

I understand cultural diversity, but I believe that as we are human we need to focus on the similarities.

I believe, there should be a climate that supports multiculturalism in schools.

I believe that in learning activities students with different cultural backgrounds should be taken into account.

Adverse Judgment Related to Cultural diversity:

I find strange, peculiar behavior values and attitudes toward different cultures.

I think being in contact with students belonging to different cultures cause discomfort.

I prefer to teach in a classroom of students with similar cultural backgrounds.

I avoid sharing my cultural identity with my students in the classroom.

I disagree on giving importance to cultural diversity.

İ want to teach the students who are in the same culture like me.

Teachers do not need to have information about multicultural education.

Adoption of Cultural diversity:

I pay attention to learn cultural dynamics of the group that I am in.

I care about students' descriptions of their own cultural values easily.

I think different gender, faith, ethnicity that are the value of judgments is the richness of that language in class.

 I enjoy teaching in multicultural class.

I care about the students cultural features in classroom activities.

Caring Cultural diversity:

In the debates of classroom I would prevent the emergence of cultural diversity

 I think that there should be tolerance towards different sexual preferences.

I questioned my own cultural history.

I don't think that students are superior or poor from each other in cultural aspects

Designing activity about cultural diversity:

Based on my knowledge and experiences I can choose different learning styles methods.

Based on my knowledge and experiences I can apply different learning styles methods.

I can understand the problems caused by the cultural experiences, values and the way of life.

 I can solve the problems caused by the cultural experiences, values and the way of life.

I can help with students from different cultures to adapt in a new cultural environment (grade-school).

Managing of cultural diversity:

I can design the material, taking into account cultural diversity.

I can communicate with students from different cultures effectively.

I can show sensitivity to different cultures.

I can conduct a study dealing with cultural diversity in my school or in my class.

 I can meet educational needs of students with different cultural values.

Understanding diversity:

I am aware of the impact of culture on the attitude, beliefs and behaviors .
I can understand the impact of culture on students' attitude, beliefs and behavior
I can designing teaching activities, taking into account the cultural characteristics of students

**References**

Agudo-Peregrina, Angel & Iglesias-Pradas, Santiago & Conde-González, Miguel & Hernández-García, Ángel. (2014). Can we predict success from log data in VLEs? Classification of interactions for learning analytics and their relation with performance in VLE-supported F2F and online learning. *Journal of Computers in Human Behavior.* 31.

Bandura A. (1977). Social learning theory. General Learning Press. Retrieved from http://www.asecib.ase.ro/mps/Bandura\_SocialLearningTheory.pdf

Barbour, M., Huerta, L. & Miron, G. (2018). Virtual Schools in the US: Case Studies of Policy, Performance and Research Evidence. In E. Langran & J. Borup (Eds.). *Association for the Advancement of Computing in Education (AACE).* Retrieved September 3, 2018 from https://www.learntechlib.org/primary/p/182964/.

Bowers, J., & Kumar, P. (2015). Students Perceptions of Teaching and Social Presence. *International Journal of Web-Based Learning and Teaching Technologies*, 10(1), 27-44. doi:10.4018/ijwltt.2015010103

Bozkurt, Gulay. (2017). Social Constructivism: Does it Succeed in Reconciling Individual Cognition with Social Teaching and Learning Practices in Mathematics*? Journal of Education and Practice*, 8 (3).

Buzwell, Simone & Farrugia, Matthew & Williams, James. (2016). Students' voice regarding important characteristics of online and face-to-face higher education. Sensoria: A Journal of Mind, Brain & Culture. 12. 38. 10.7790/sa.v12i1.430.

Chai, J., & Fan, K. (2016). Mobile Inverted Constructivism: Education of Interaction Technology in Social Media. *EURASIA Journal of Mathematics, Science & Technology Education*, 12(7).

Deaton, S. (2015). Social Learning Theory in the Age of Social Media: Implications for Educational Practitioners. *I-managers Journal of Educational Technology*, 12(1), 1-6.

Gilles, Robyn. (2013). Cooperative Learning: Developments in Research. *International Journal of Educational Psychology*. 3(2), 125-140.

Goggins, Sean & Laffey, James & Galyen, Krista. (2009). Social Ability in Online Groups: Representing the Quality of Interactions in Social Computing Environments. 4. 667-674.

Gunduz, N., & Hursen, C. (2015). Constructivism in Teaching and Learning; Content Analysis Evaluation. *Procedia - Social and Behavioral Sciences*, 191, 526-533.

Gresham, F. M., & Elliot, S. N. (1990). Social Skills Rating System manual. Circle Pines, MN: American Guidance Service.

Hawkins, A., Graham, C. R., Sudweeks, R. R., & Barbour, M. K. (2013). Academic performance, course completion rates, and student perception of the quality and frequency of interaction in a virtual high school. *Distance Education, 34*(1), 64-83.

Huda, Miftachul & Maseleno, Andino & Atmotiyoso, Pardimin & Siregar, Maragustam & Ahmad, Roslee & Jasmi, Kamarul Azmi & Hisyam, Nasrul & Karjo, Mohd Ismail & Basiron, Bushrah. (2018). Big Data Emerging Technology: Insights into Innovative Environment for Online Learning Resources. International Journal of Emerging Technologies in Learning (iJET).

Ilgaz, Hale & Gulbahar, Yasemin. (2015). A Snapshot of Online Learners: e-Readiness, e-Satisfaction and Expectations. International Review of Research in Open and Distributed Learning. International Review of Research in Open and Distributed Learning. 16. 171-178.

Jack, J., Sludden, J., & Schott, A. (2013). An Analysis of Pennsylvania Cyber Charter Schools. Issue Brief. Research for Action.

Jaggars, Shanna Smith (2014). Choosing Between Online and Face-to-Face Courses: Community College Student Voices, American Journal of Distance Education, 28:1, 27-38.

Joksimovića, Srećko Dragan Gaševićab, Thomas M. Loughinc, Vitomir Kovanovićb, & Marek Hatalad. Learning at distance: Effects of interaction traces on academic achievement. *Journal of Computers & Education*. 87(9), 204-217.

Kauffman, Heather. (2015). A review of predictive factors of student success in and satisfaction with online learning. Research in Learning Technology. 23.

Kirkwood, Adrian & Linda Price (2014). Technology-enhanced learning and teaching in higher education: what is ‘enhanced’ and how do we know? A critical literature review, Learning, Media and Technology, 39:1, 6-36.

Krahenbuhl, K. S. (2016). Student-centered Education and Constructivism: Challenges, Concerns, and Clarity for Teachers. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas,* 89(3), 97-105.

Kreijns, Karel & Van Acker, Frederik & Vermeulen, Marjan & Buuren, Hans. (2014). Community of Inquiry: Social Presence Revisited. E-Learning and Digital Media. 11. 5.

Koehler, Lindsey, Trent J. Langness, Sarah S. Pietig, Nicole L. Stoffel, Jamie L. Wyttenbach (2010) “Socialization Skills in Home Schooled Children Versus Conventionally Schooled Children”.University of Wisconsin-La Crosse: Journal of Undergraduate Research. Retrieved from <https://www.uwlax.edu/urc/jur-online/PDF/2002/Koehler_Langness_Pietig_Stoffel_and_Wyttenbach.pdf>

Lebeda, Samantha (2005). Home Schooling: Depriving Children of Social Development. *Journal of Contemporary Legal Issues*. 99 (16).

Lee, J., Yoon, S. Y., & Lee, C. H. (2013). Exploring Online Learning at Primary Schools: Students' Perspectives on Cyber Home Learning System through Video Conferencing. *Turkish Online Journal of Educational Technology*, 12(1), 68-76.cy

Mayberry, M., Knowles, J. G., Ray, B., & Marlow, S. (1995). Home schooling: Parents as educators.

Thousand Oaks, CA: Corwin.

McKinley, Marcia, Jesika N. Asaro, Jamie Bergin, Nicole D’Auria, and Katherine E. Gagnon. (2007). Social Skills and Satisfaction with Social Relationships in Home-Schooled, Private-Schooled, and Public-Schooled Children.

Medlin, Richard (1994). Predictors of Achievement in Home-Educated Children: Aptitude, Self-Concept, and Pedagogical Practices. Home School Researcher. 10 (3), 1-7

Medlin, Richard (2006). Homeschooled Children’s Social Skills. Home School Researcher. 17 (1), 1-8

Moradi, M.; Liu, L.; Luchies, C.; Patterson, M.M.; Darban, B. Enhancing Teaching-Learning Effectiveness by Creating Online Interactive Instructional Modules for Fundamental Concepts of Physics and Mathematics. Educ. Sci. 2018, 8, 109.

Murray, B. (1996, December). Home schools: How do they affect children? APA Monitor, 7

 Retrieved January 28, 1997 from the World Wide Web: www.apa.org/monitor /dec96/home.html

National Education Policy Center. Virtual Schools Report 2016: Directory and Performance Review. University of Colorado Boulder. (4). Retrieved from https://nepc.colorado.edu/sites/default/files/publications/RB-Miron%20Virtual%20Schools.pdf

Nguyen, Tuan (2015). The Effectiveness of Online Learning: Beyond No Significant Difference and Future Horizons. Journal of Online Learning and Teaching Vol. 11, No. 2.

Oyarzun, Susan E. (2016). "Effects of Learner-to-Learner Interactions on Social Presence, Achievement and Satisfaction" . Doctor of Philosophy (PhD), dissertation, STEM and Professional Studies, Old Dominion University.

Pazhouh, Rosa, Lake Robin, & Miller, Larry. (2015). The Policy Framework for Online Charter Schools. Center on Reinventing Public Education.

Pennsylvania Charter School Law. Basic Education Circular 24 P.S. §17-1741-A. 1 September 2006.

Pennsylvania Equal Access Bill (2006). Senate Bill 361. Pennsylvania School Code, Section 511. General Assembly of the Commonwealth of Pennsylvania. 10 November 2005.

Picciano, Anthony (2002). Beyond Student Perceptions: Issues of Interaction, Presence, and Performance in an Online Course. Journal of Asynchronous Learning Networks. 6(1).

Raspopovic, M., Cvetanovic, S., Medan, I., & Ljubojevic, D. (2017). The Effects of Integrating Social Learning Environment with Online Learning. *The International Review of Research in Open and Distributed Learning*, 18(1).

Ray, Brian (2010). Academic Achievement and Demographic Traits of Homeschool Students: A Nationwide Study, Academic Leadership: The Online Journal: 8(1).

Reavis, R., & Zakrinski, A. (2005). Are home-schooled children socially at-risk or socially protected?

The Brown University Child and Adolescent Behavior Letter, 21(9), 1, 4–5.

Rudner, Lawrence (1999). Scholastic Achievement and Demographic Characteristics of Home School Students in 1998. Education Policy Analysis Archives, 7(8).

Slavin, R. (2013). Effective programmes in reading and mathematics: Evidence from the Best Evidence Encyclopedia. *Journal of School Effectiveness and School Improvement*, 24, 383-391.

Slavin Robert E. (2015) Cooperative learning in elementary schools, *Journal of Education,* 3-13, 43:1, 5-14.

Szeto, E., & Cheng, A. Y. (2014). Towards a framework of interactions in a blended synchronous learning environment: What effects are there on students social presence experience? *Interactive Learning Environments Journal*, 24(3), 487-503.

Tu, Chih-Hsiung (2000). On-line learning migration: from social learning theory to social presence theory in CMC environment. Journal of Network and Computer Applications. 23.

Van Pelt, D. (2003). Home education in Canada: A report on the pan-Canadian study on home education 2003. Medicine Hat, Alberta: Canadian Centre for Home Education.

Vygotsky, L. (1978). Interaction between learning and development. *Readings on the development of children,* 23(3), 34-41.

Weidlich, Joshua & J. Bastiaens, Theo. (2017). Explaining social presence and the quality of online learning with the SIPS model. Computers in Human Behavior. 72. 479-487.

Whiteside, Aimee (2015). Introducing the Social Presence Model to Explore Online and Blended Learning Experiences. Online Learning. 19(2).

Wilder, S. (2014) Effects of parental involvement on academic achievement: a meta-synthesis, Educational Review, 66:3, 377-397.

Yang, Chia-Chi, I-Chun Tsai, Bosung Kim, Moon-Heum Cho, James M. Laffey (2006). Exploring the relationships between students' academic motivation and social ability in online learning environments. Internet and Higher Education. 9 (1), 277–286.

Zhao, H. , Sullivan, K. P. and Mellenius, I. (2014). Collaboration in online peer review groups. *Journal of Educational Technology*, 45: 807-819.

Zhimin Zhou, Chenting Su, Nan Zhou and Ning Zhang (2016). Becoming Friends in Online Brand Communities: Evidence from China*, Journal of Computer-Mediated Communication*, 21, 1, (69-86).