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Teachers' Perceptions of Digital Citizenship Development in Middle School Students Using Social Media and Global Collaborative Projects

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Walden University
2016

Abstract

Teachers' Perceptions of Digital Citizenship Development in Middle School Students

Using Social Media and Global Collaborative Projects

by

Shane E. Snyder

MS, Penn State University, 2000

BS, Lock Haven University, 1996

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Educational Technology

Walden University

June 2016

Abstract

Middle school students misuse social media without understanding the negative influence on their global digital footprint and lives. Research does not provide insight into how students develop digital citizenship skills for positive digital footprints and appropriate social media use. The purpose of this qualitative case study was to explore students' growth as digital citizens while participating in one digital citizenship project using global collaboration and social media. The conceptual framework included Ribble's theory of digital citizenship and Siemens's theory of connectivism. Research questions asked how students' digital citizenship developed when they were engaged in social media and global collaborative projects. Participants included 7 middle school teachers and 1 project administrator. Structured interviews and Wiki data were analyzed using an iterative open coding technique to identify rich, thick themes and patterns. The findings showed global collaborative projects and social media served as catalysts to motivate students as they took action as digital citizens, overcame barriers to digital citizenship, used social media for learning and collaboration, and adopted less ethnocentric views of the world. Students compared other cultures to their own, considered the welfare of others online, and modified their online behavior in favor of positive global digital footprints. Students used social media responsibly, were academically motivated by an authentic audience, and shared their academic learning with others in their local and extended communities. Reform of middle school curricula to include global collaborative projects and instruction in digital citizenship may bring about positive social change as students learn to be responsible users of social media.

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Dedication

First and above all others I dedicate this study to God for giving me the guidance, strength, and peace to finish this academic endeavor. I also dedicate this study to my parents for their unending support. I further dedicate this study to those who continuously pursue knowledge as lifelong learners as well as to those who are driven to make a positive difference in the life of others. I also dedicate this study to everyone who is hesitant to take a risk. By taking risks we may transform this world into a more caring and responsible world across all societies. Know that anything worth doing is a challenge and requires sacrifices be made. In the words of Theodore Roosevelt: "Nothing in the world is worth having or worth doing unless it means effort, pain, difficulty… I have never in my life envied a human being who led an easy life. I have envied a great many people who led difficult lives and led them well." No matter how much time is required and how many barriers you encounter along your journey, remember that persistence is the key to success. Pursue your goals and do not bow out prematurely. I also dedicate this study to individuals who are inclined to set high standards for themselves. In the words of W. Somerset Maugham: "It's a funny thing about life; if you refuse to accept anything but the best, you very often get it." Pursue your dreams and take responsibility for others while doing so. Remember that each of us faces challenges in life. What we do in the face of adversity defines who we are and what we can do not only for ourselves but also for others. Finally, in the words of Jedi Master Yoda: "Do or do not. There is no try," and "May the Force be with you–always."

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Chapter 1: Introduction to the Study

In this study I explored teacher and administrator perceptions on the application of *digital citizenship* to global collaborative projects in education where student communications were facilitated via the use of social media technologies. Digital citizenship is defined as "the norms of appropriate, responsible behavior with regard to technology use" (Ribble, 2011, p. 10). Students' increased use of social media in and out of school has blurred the dividing line between students' personal and educational use of social media (Ribble & Miller, 2013, p. 140). Ribble and Miller (2013) stated that digital citizenship warrants increasing concern for school leaders (p. 139). The increased use of social media in school (Alvermann, Hutchins, & McDevitt, 2012) and out of school by K-12 students suggests that students need to know how to engage others properly as digital citizens (Davis, Katz, Santo, & James, 2010; De Abreu, 2010). Lenhart et al. (2011) reported that 80% of teens who are online are also users of social media sites (p. 2). Teachers are frequently unprepared to facilitate instruction on or serve as role models for digital citizenship (Pusey & Sadera, 2012; Sincar, 2011; Sincar, 2013).

The potential for technology misuse and abuse has been demonstrated in the literature (Ribble & Bailey, 2006). Several researchers demonstrated students' misuse and abuse of technology including the areas of online privacy (Hazari & Brown, 2013), online ethical concerns (Assumpcao & Sleiman, 2011), online reputation (Barczyk & Duncan, 2012), and online cyberbullying (Zhou et al., 2013). Students do not intrinsically know the potential dangers associated with the use of technology as a communications medium. This can cause students and others immediate as well as latent

harm that may manifest itself at some point later in life when least expected such as when

engaging in a job interview (Cross-Tab Commission, 2010; Hazari & Brown, 2013).

Once harm occurs in a digital setting, it may be difficult to reverse due to the persistence

of information known as a digital footprint in a highly networked society (Oxley, 2010, p.

2; Scherer, 2011, p. 21). Ribble (2012) called digital citizenship a "societal issue" (p.

149). Because the infusion of technology into society occurs at increasing rates digital

citizenship is a growing concern as students who do not take into account the tenants of

digital citizenship may find themselves in an endless cycle of harm-inflicting technology

misuse and abuse (International Society for Technology in Education [ISTE], 2012a, ¶ 1).

In response to digital citizenship awareness, Ribble and Miller (2013) summarized the

need for action in educational settings in this statement that "school leaders must become

aware and begin addressing these needs for their students if the major thrust of education

is to prepare children to become responsible adults" (p. 140).

It is not known how or why students are or are not inclined to take on the roles of

digital citizens when engaged in global collaborative projects in education in which social

media is used to facilitate communications. If students are to become productive global

citizens who communicate with each other in a highly networked world, then studies are

needed to determine how digital citizenship can be leveraged to foster responsible use of

technologies for global collaboration, information exchange, and learning. Digital

citizenship education is needed because students risk their personal security, online

reputations, and future employability as well as bring harm to themselves and others

because of their technology misuse. In this study I explored the perceptions held by

middle school teachers on their students' growth as digital citizens while participating in a digital citizenship project using global collaboration and social media.

Chapter 1 continues with background information about this qualitative case study research, a discussion of the problem statement and the purpose of the study, the research questions, introduces the theoretical framework that guides the research study, and explains the nature of the study. Definitions relevant to this study are elaborated, as are the assumptions, scope and delimitations, limitations, and the significance of the study.

Background

Digital citizenship focuses on the appropriate use of technology for positive academic (Ribble, 2012) and societal outcomes (ISTE, 2012b). As K-12 students are more technically savvy than ever before both in school and at home, digital citizenship is increasingly important in the area of online reputation for example (Cross-Tab Commission, 2010, p. 3). Incorporating digital citizenship into K-12 school curricula may not be an easy task as both teachers and students are unclear about digital citizenship (Pusey & Sadera, 2012; Sincar, 2011; Sincar, 2013). Transitioning students and teachers to a digital citizenship mindset may take much time and preparation. Such a transition is largely uncharted in academic research. Digital citizenship is a global phenomenon, but it is unclear how digital citizenship can be fostered through collaborative global educational projects and how social media can be used to enhance students' perceptions of digital citizenship. Identifying barriers associated with integrating digital citizenship in the middle school curriculum may prove challenging for teachers and administrators. It is largely unknown how a transition process toward a digital citizenship mindset can be

made. Ribble's nine elements of digital citizenship framework identified key themes to address, but a greater understanding of the "how's" and "why's" (Yin, 2014, p. 21) associated with integrating digital citizenship in K-12 curriculums is needed (Sincar, 2011, 2013).

The widespread use of social media in students' personal lives is of concern as improper use of social media may pose certain risks to students' online identities and privacy (Ribble, 2011). Students' personal use of technology outside of classroom settings has the potential to influence their future as in the case of their employability (Barczyk & Duncan, 2012; Hazari & Brown, 2013). Dalton, Smith, and Robinson (2011) posited that:

> Tweens and teens spend hours online and are often quite skilled at Internet inquiry when it is for their own personal and social purposes. Academic Internet inquiry, however, poses new challenges for students as they 'learn how to learn' on the Internet with content and resources that reflect different disciplinary perspectives and which contain academic language and media. (p. 5)

Educators have been prompted to incorporate social media into classroom settings in an effort to reach students on a common ground (Ribble, 2011, p. 12). Social media has revolutionized communications and can prove beneficial in various settings. Dabner (2012) asserted that

> …the increased use of social media in our everyday lives has not only changed the way we form and maintain relationships, it has changed both the ways we respond to events and the places we do so. Web 2.0 tools, including social

network sites, have the potential to benefit people at a personal, interpersonal and

societal level. (p. 76)

Dabner's perspective may be applauded by some, but most technology can be used for

both positively and negatively. It may take a focused effort to realize positive outcomes

through the use of social media in K-12 settings. Ribble's (2011) nine elements of digital

citizenship framework is a response to students' abuse and misuse of technology.

Furthermore, the infusion of technology into society is one that continues at increasing

rates (ISTE, 2012a, ¶ 1), and K-12 students' use of technology, especially social media, is

increasing (Davis et al., 2010; De Abreu, 2010). Although digital literacy includes

learning how to use technology at the interface and functional level, educators,

administrators, parents, and especially students may benefit from moving beyond

understanding technology at a foundational level. Rather, understanding how to

incorporate technology into meaningful educational and societal experiences is the focus

of digital citizenship.

> Simply being able to use technology is no longer enough. Today's students need
>
> to be able to use technology to analyze, learn and explore. Digital age skills are
>
> vital for preparing students to work, live, and contribute to the social and civic
>
> fabric of their communities. (ISTE, 2012a, ¶ 2)

To ensure students are prepared to use technology in appropriate and responsible ways,

especially where social media is concerned, Ribble and Bailey (2005) proposed a

"teaching solution" they called digital citizenship where "appropriate technology

behavior" is taught (p. 2). The affordances of networked communications via social

media can reap positive educational outcomes in global settings (Peppler & Solomou, 2011; Reimer & Reimer, 2012a) and in local settings (Cardoso & Coutinho, 2011; Liu, Liu, Chen, Lin, & Chen, 2011; Thein, Oldakowski, & Sloan, 2010; Zeiger & Farber, 2012). Felt, Vartabedian, Literat, and Mehta (2012) found that teenagers were capable of taking on certain digital citizenship roles using social media. However, students' use of social media tools in their personal lives outside of school may result in biases that prevent students from using them favorably in educational contexts (Poellhuber & Anderson, 2011, p. 117). How social media can be used in global collaborative educational contexts to enhance students' perceptions of digital citizenship when engaged in global collaborative projects in education is unknown. Several key aspects associated with integrating social media, global collaboration, digital citizenship are outlined below.

In the case of online security and online privacy, students may show an interest in online privacy settings but may overlook social media privacy settings completely (Davis & James, 2013, p. 17; Oolo & Siibak, 2013, p. 6). Assumpcao and Sleiman (2011) noted that students did not take others into consideration where online security and privacy were concerned. In contrast, Davis et al. (2010) found that most teens showed concern about their online roles and responsibilities as well as concern for others online (p. 135). Closely tied to online security and privacy are online ethical and moral behavior as students do not always practice positive online etiquette when communicating online and may share passwords, engage in perpetuating malicious emails, and fight back if offended by others online (Assumpcao & Sleiman, 2011, p. 312). Self-centered attitudes among some teens may drive such online behavior as students infrequently consider how their

actions might impact others (Davis et al., 2010). Such types of behavior could jeopardize students' own online security and privacy as well as that of their peers.

Social media is said to help students garner new perspectives and may enhance students' learning (Peppler & Solomou, 2011). However, students may find themselves in harm's way when collaborating online as traditional bullying and victimization span multiple contexts and mediums both online and offline and are known online as cyberbullying and cybervictimization (Burton, Florell, & Wyant, 2013, p. 110). Educational use of social media can be beneficial for students, but students' perceptions of digital citizenship may be impacted negatively if they encounter cyberbullies when using social media in educational settings (Ribble, 2011, p. 29) such as when engaged in global collaborative projects online.

Students and teachers may encounter barriers to taking on the roles associated with digital citizenship when collaborating globally online. Examples include "lack of control of the other participants," "miscommunication and language barriers," technological obstacles (Reimer & Reimer, 2012a, p. 2216), social media technology (Wu, Wu, Huang, Chang, & Yang, 2011), skill levels and ease of use (Tuten & Marks, 2012), teachers' attitudes toward social media (Guo & Stevens, 2011), and preservice teachers' lack of knowledge about social media (Pusey & Sadera, 2012; Sincar, 2011). Poellhuber and Anderson (2011) found that the institutional effect or overall organizational climate of a school environment can influence students' use of social media technologies (pp. 110-111). Felt et al. (2012) found that students demonstrated

"intermediate digital citizenship" when engaging in local collaborative projects in education, but a global perspective is missing (pp. 219-220).

It is not known how teachers can integrate digital citizenship, social media, and global collaboration in the middle school curriculum to help students take on the roles associated with digital citizenship. How students and teachers overcome barriers when promoting digital citizenship was not found in the literature. How the tenants of digital citizenship can be used to promote ethical and moral use of technology in networked and global communications was not found in the literature. The perceptions held by middle school teachers' and project administrators on and familiarity with digital citizenship as well as their challenges and successes associated with integrating digital citizenship into the curriculum when combined with global collaboration and social media are missing from the literature. Research is needed to provide answers to those questions so that students can learn about the use of technologies within a global arena. My study was needed to analyze strategies that promote the ethical and moral use of technology among middle school students as they become productive members of a technology-infused global society. Through such awareness and education in the area of digital citizenship, it is posited that students may use technology in a more responsible manner to promote positive social change.

Problem Statement

It is not known how or why middle school students take on the roles associated with digital citizenship when engaged in global collaborative projects infused with social media communications. It is also unknown how teachers might successfully incorporate

digital citizenship into middle school curricula, and how teachers can positively foster digital citizenship among middle school students collaborating globally using social media communications. Jensen (2008) suggested that K-12 school students' use of social technology has the potential to "…both define and stabilize young people's conceptions of their own place, identity, and participation in both local physical settings and more global electronic settings" (p. 94). Hollandsworth, Dowdy, and Donovan (2011) noted that "digital citizenship encompasses a wide range of behaviors with varying degrees of risk and possible negative consequences. Lack of digital citizenship awareness and education can, and has, led to problematic, even dangerous student conduct" (p. 37).

Ribble and Miller (2013) warned that social networks are increasingly misused to victimize others, and Jensen (2008) found that social media can ultimately affect students' "health, cognitive and emotional development, and moral direction" (p. 97). Despite those concerns, Richardson, Bathon, Flora, and Lewis (2012) found that National Educational Technology Standards for Administrators (NETS•A) Standard 4: Systemic Improvement and Standard 5: Digital Citizenship were researched less than all of the other three standards, and urged additional scholarly research in this area to improve educational leadership and the use of technology in schools for effective digital citizenship (p. 144).

Ribble's (2011) nine elements of digital citizenship serve as a starting point for addressing the issue of digital citizenship. Ribble (2012) called for immediate action where digital citizenship is concerned and urged educators to learn new technologies to determine how to integrate social media into lesson plans and school curriculums given

the prominent use of social media technology by students outside of the classroom. An understanding of middle school students' growth as digital citizens is missing in the literature. Although the tenants of digital citizenship such as digital security, digital privacy, digital ethics, digital morale, and digital reputation are found in the literature, a gap exists with respect to how those aspects of digital citizenship can be leveraged to enhance students' perceptions of digital citizenship when engaging in social media infused global collaborative projects.

How social media can be used to enhance digital citizenship among middle school students among an array of technical, social, and emotional variables including teachers' perceived barriers encountered by students is unclear. Research findings associated with the use of social media in higher education are plentiful. For example, Hazari and Brown (2013) found that online privacy was a concern with respect to employability and that employers are making hiring decisions based on college students' digital footprints online. Jin (2013) found that extraverted college students tended to share more personal details about themselves on Twitter than did introverted college students. Shafie et al. (2011) found that university students' knowledge about online privacy associated with social networking sites was lacking and students were found to "trade their [online] privacy for something beneficial" (p. 161). It is not known whether the same findings apply to middle school students engaged in digital citizenship activities or whether they apply to global collaborative projects facilitated by social media communications. Teachers' perceptions on the integration of digital citizenship into middle school curriculums where global collaboration and social media are used are absent from the

literature as is research on digital citizenship in general. This study explored the perceptions held by seven middle school teachers and one project administrator on integrating digital citizenship, global collaboration, and social media in the middle school curriculum.

Purpose of the Study

The purpose of this qualitative case study was to explore perceptions of middle school teachers on their students' growth as digital citizens while participating in a digital citizenship project using global collaboration and social media. Middle school teachers and one project administrator having experience in such learning environments were interviewed about middle school students' willingness to take on digital citizenship roles, barriers associated with students taking on digital citizenship roles, and how social media can help students take on digital citizenship roles when engaged in global collaborative learning projects.

Research Questions

The following research questions served as guiding questions for this qualitative case study.

Research Question 1: What are teachers' perceptions about middle school students' development as digital citizens when engaged in global collaborative projects?

Research Question 2: What are teachers' perceptions about strategies middle school students used to overcome barriers to taking on the roles associated with digital citizenship when engaged in global collaborative projects?

Research Question 3: What are teachers' perceptions about the use of social media and global collaborative projects to enhance middle school students' digital citizenship and academic achievement?

Research Question 4: What are teachers' perceptions regarding integrating digital citizenship, social media, and global collaboration in the middle school curriculum?

Conceptual Framework

The conceptual framework for this study included Ribble's (2011) nine elements of digital citizenship and Siemens's (2005a) theory of connectivism. Ribble's (2011) nine elements of digital citizenship include the digital forms of access, literacy, communication, etiquette, security or self-protection, rights and responsibilities, law, commerce, and health and wellness (p. 11). Ribble's framework provided a lens through which students' appropriate use, misuse, or abuse of technology was examined to further students' taking on the roles associated with digital citizenship in a manner that facilitates appropriate technology use. Ribble's nine elements of digital citizenship highlighted technology use associated with "learning and academic performance, school environment and student behavior, and student life outside the school environment" (p. 11). This emphasized additional linkages between academic and personal uses of technology, as well as the socio-emotional aspects of technology use. See the Ribble's Nine Elements of Digital Citizenship section in Chapter 2 for more details.

Ribble's nine elements of digital citizenship framework were used to interpret teachers' perceptions of their students' development as digital citizens when engaged in global collaborative projects in education (Research Question 1). The same framework

served as a guide to identify teachers' perceptions of barriers encountered by students and students' willingness to take on the roles associated with digital citizenship (Research Question 2). To assist with exploring teachers' perceptions about how social media and global collaborative projects can be used to positively enhance students' perceptions of digital citizenship and academic achievement, Ribble's framework was applied as an interpretive lens (Research Question 3). Teachers' perceptions on integrating digital citizenship, social media, and global collaboration in the curriculum were analyzed using Ribble's framework (Research Question 4).

Siemens's (2005a) connectivism is a learning theory that highlights the individual as part of a dynamic and interconnected digital network in which information as well as individuals' knowledge is forever changing. The dynamism associated with making connections facilitates emergent learning where individuals connect with other individuals, non-human appliances, and networks to support learning in an active, on-demand, and unstructured approach (Siemens, 2005a; Williams, Karousou, & Mackness, 2011). Connectivist theory extends learning to whatever type of node, human or non-human, learners use to scaffold their learning by using a network of information resources. Learning also takes place in the network and not only within individuals as learners.

Connectivism is applicable to highly networked societies in which global connectivity and communications are afforded by social media. Siemens's connectivist perspective was a useful lens to research global collaboration, digital citizenship, and social media. Connectivism was used to examine teachers' perceptions of how global

collaborative communication using social media may foster digital citizenship among their students (Research Questions 1 and 3). Students' willingness to take on the roles associated with networked collaborative learning when encountering barriers associated with using social media to facilitate networked learning was examined through a connectivist lens (Research Question 3). Siemens's connectivism was used to evaluate teachers' perceptions of combining digital citizenship, global collaboration, and social media into the curriculum from a networked learning perspective. A more detailed analysis and synthesis of Ribble's nine elements of digital citizenship and Siemens's connectivism are included in Chapter 2 in a review of the literature.

Nature of the Study

The qualitative case study research tradition was selected to explore the perceptions of teachers about interaction of middle school students engaged in digital citizenship, social media, and global collaboration. The qualitative case study tradition was used to facilitate a deeper understanding of "complex social phenomena" (Yin, 2009. p. 4) comprising digital citizenship, social media, and global collaboration by asking "how" and "why" questions (pp. 2-13). Qualitative case study research was used to build a holistic picture of current "real-life events" (p. 4) within a "real-world context" (p. 2); the experiences of teachers and administrators who participated in the Flat Connections Digiteen and Digitween Wiki Project. For example, students might collaborate globally using social media as they investigate the proper etiquette and protocol associated with digital citizenship. Students might use a Wiki to build a report by incorporating input from each student and by incorporating various types of media found online.

The case study research tradition is appropriate when the "researcher has little or no control over behavioral events" (Yin, 2014. p. 2) and the phenomenon being studied is situated within a contemporary timeframe (p. 2). The incorporation of "multiple sources of evidence, with data needing to converge in a triangulating fashion" is a strength of the case study research tradition (Yin, 2009. p. 18). Triangulation facilitated convergence and coherence across the "lines of inquiry" (Yin, 2014. p. 120) to permit the compilation of rich, "detailed observational evidence" of the phenomenon being studied, in this case, digital citizenship, global collaboration, and social media as situated in a contextualized educational setting (Yin, 2014, p. 19).

Qualitative case study research may be used when the number of variables of interest is greater than the number of data points available. In this case study the number of participants and data points was fewer than the number of variables associated with the research questions (Yin, 2014, p. 17). The data points specific to this study were teacher interviews, an administrator interview, and Wiki analysis. Finally, qualitative case study research offered a comparative advantage over experiments as it helped answer "how" and "why" questions; which may be difficult to achieve when engaging in experimental research designs (p. 21).

The key phenomenon investigated in this qualitative case study was digital citizenship. Teachers' perceptions of their students' willingness to take on roles associated with digital citizenship were explored. A critical examination of teachers' perceptions of barriers overcome by students engaged in global collaborative projects associated with digital citizenship was pursued. Teachers' perceptions of their students'

use of social media as a conduit for enhancing students' digital citizenship and academic achievement when engaged in global collaborative projects were studied. Teachers were probed for their perceptions of integrating digital citizenship, social media, and global collaboration in the middle school curriculum.

The Flat Connections Digiteen and Digitween Wiki Project was integral to this study and was explored as a data source because it was designed to promote global collaborative learning and global digital citizenship by connecting students and teachers using social media technology (Lindsay & Davis, 2013, pp. 4-12). The Flat Connections Digiteen and Digitween Wiki Project was examined through a composite lens of multiple data sources: teacher interviews, an administrator interview, and an analysis of Wiki projects. Interviews were conducted with seven middle school teachers and with one project administrator using purposive sampling. Because the teachers and administrator were located at many points across the world, interviews were conducted by phone or Skype. Additional data were gathered from the Flat Connections Digiteen and Digitween Wiki Project artifacts, such as project deliverables and social media historical data as preserved in the project Wikis. Data were analyzed using an iterative coding technique to identify rich, thick themes and patterns found in the interview and Wiki data.

Definitions

Cyberbullying: "the use of technology to intentionally harm or harass others" (Bauman, 2010, p. 803).

Digital citizenship: "the norms of appropriate, responsible behavior with regard to technology use" (Ribble, 2011, p. 10).

Global collaboration: "An effective global collaborative project is an educational project that flattens or joins classrooms and people from geographically dispersed places within a technology infrastructure built for a common curricular purpose. Interactions foster cultural understanding and global awareness in the process of learning" (Lindsay & Davis, 2013, p. 7).

Online reputation: "…is the publicly held social evaluation of a person based on his or her behavior, what he or she posts, and what others (such as individuals, groups, and Web services) share about the person on the Internet" (Cross-Tab Commission, 2010, p. 3).

Social media: "…Internet and mobile-based tools and devices that integrate technology, telecommunications, and social interaction enabling the construction, co-construction and dissemination of words, images (static and moving) and audio" (Dabner, 2012, p. 69).

Social networking sites: "…web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system" (Ellison, 2008, p. 211).

Assumptions

Several assumptions underpinned this qualitative case study:

1. Teachers answered truthfully and to the best of their ability and recollection.

2. Teachers and students used social media in educational settings beyond the scope of this study.

3. Teachers and students used social media in personal settings outside classrooms.

4. Teachers were aware of their students' digital citizenship skills and were able to answer interview questions associated with this study.

Assumptions are necessary for this qualitative case study because they underpinned those areas that are believed to be true or given as true but could not be explicitly demonstrated to be true. Without teachers and student having used social media in and outside the classroom as well as having engaged in global collaborative projects using social media, the concern about proper technology use and digital citizenship was unwarranted.

Scope and Delimitations

The scope of this research was limited to interviewing seven middle school teachers and one project administrator who participated in and completed an entire iteration of the Flat Connections Digiteen and Digitween Wiki Project. The project used social media technology as a means to "promote digital citizenship at their local schools and in their communities" (Lindsay, 2014, p. 2). Teachers with this background had experience with incorporating digital citizenship, global collaboration, and social media into their classrooms and curriculums. Ribble's (2012) nine elements of digital citizenship and Siemens's theory of connectivism (2005a) were applied to those areas of investigation. Teachers who have not participated or who did not complete participation in the Flat Connections Digiteen and Digitween Wiki Project were not invited to participate. Middle school students were not contacted or otherwise included in the study.

Because this study examined a global project, the transferability of the results

could be far reaching. First, the results of this study could be transferred to middle school

students, teachers, and administrators who are studying digital citizenship, or are

investigating integrating digital citizenship into their curriculums. Second, the results of

this study may be applicable to students, teachers, and administrators who are using

social media to enhance students' digital citizenship skills and academic achievement.

Third and finally, for students, teachers, and administrators who are interested in having

their students engage in global collaborative projects, especially where undergirded by

digital citizenship and social media, the results of this study may be transferred to those

stakeholders.

<div align="center">**Limitations**</div>

Case study research faces certain limitations (Yin, 2014, pp. 18-22) that may

apply to this study. First, the questions of rigor and the manageability are associated with

case study research. By following specific protocols for data gathering and analysis, I

ensured that the study was conducted and results were analyzed and interpreted in a

reasonable timeframe with an appropriate amount of rigor applied. Second, the

generalizability and transferability of single case study research and a relatively small

sample applied to this study. To address this concern, Yin (2014) noted that "case

studies, like experiments, are generalizable to theoretical propositions and not to

populations or universes" (p. 21) where analytic generalizations were utilized (p. 41) to

support transferability. Third, specific measures were taken to avoid introducing bias

into the study and research results as intimate knowledge of the area being researched

must be held by the researcher prior to engaging in the study. I addressed this issue by

reporting my findings throughout the data collection phase to test for objectivity (Yin,

2014, p. 76). Fourth, Yin suggested that given the lack of literature documenting the

procedures and processes to follow when engaging in case study research, researchers

may address this concern by taking precautions such as being careful, following

systematic procedures, and avoiding equivocal evidence to have a bearing on the study

outcome (pp. 19-20). I addressed this concern by journaling my processes used in the

study and reflecting on them as required as I progressed iteratively through data analysis

and interpretation. Fifth, the distinction between teaching cases and research-based cases

is that teaching cases are often altered for the sake of teaching a lesson (p. 20). I ensured

that I approached the research objectively and did not modify the case in any fashion.

Significance

This qualitative case study contributed new knowledge to the field of educational

technology by providing research findings on how to incorporate digital citizenship,

global collaboration, and social media into middle school curricula. Ribble's (2012) nine

elements of digital citizenship framework served as point of reference for the same, but

teachers' perceptions about the integration of digital citizenship, global collaborative

projects, and social media may help other teachers embark on similar educational

initiatives. Social media may be used in unintended and socially irresponsible ways by

middle school students and teachers, and this research incorporated findings on barriers

and technology misuse so that teachers, administrators, and other stakeholders are better

prepared to implement an effective use of social media in educational settings. Concerns

such as digital privacy and security, cyberbullying, and online ethics and moral were investigated to provide teachers a set of findings that can be used to guide their use of social media and global collaborative projects.

Teachers are frequently unprepared to educate students about digital citizenship (Pusey & Sadera, 2012; Sincar, 2011, 2013). An analysis of teachers' perceptions provided a deeper understanding of the potential benefits and pitfalls associated with digital citizenship, global collaboration, and social media. They may help all stakeholders recognize the need for digital citizenship education for students and teachers alike. Such an understanding may lead to the development of school policies for student education on digital citizenship and teacher professional development on digital citizenship. An analysis of teachers' perceptions facilitated a greater understanding of digital citizenship, global collaboration, and social media, and this may help teachers, administrators, school boards, and other stakeholders implement digital citizenship programs in their schools. Community outreach initiatives may also result from this research as technology misuse and abuse is not limited to student and teacher use in educational settings alone.

Technology is pervasive, and the infusion of technology into society is one that continues at increasing rates (ISTE, 2012a, ¶ 1). Ribble (2012) called digital citizenship a "societal issue" as the proper use of technology applies to everyone using technology (p. 149). With an increased understanding about how social media and global collaboration in education can be used to foster digital citizenship, the potential for positive social change exists. When educated about digital citizenship and the proper use

of technology, middle school students may have better chances of becoming productive members of society who use technology in socially responsible and innovative ways. When middle school students model positive and appropriate digital citizenship and become digital citizens in their schools and communities, positive social change may ensue from the responsible and moral use of technology as well as their collaborative efforts in both local and global communities of practice.

Summary

Often middle school students misuse and abuse technology and do not uphold the tenants of digital citizenship. With the increasing use of social media in educational settings, teachers' perceptions about using social media ethically and responsibly to promote learning and pro-social behavior were addressed. Teachers' perceptions about the risks students face when engaging others using social media technologies were analyzed. A gap in current research was identified with respect to teachers' perceptions about integrating digital citizenship, global collaborative projects, and social media in educational settings. Teachers' perceptions about how those facets of learning apply to educating students in a highly networked society, how they can be integrated into the curriculum, how digital citizenship and social media can be used to enhance students' learning, and the barriers associated with each were identified as gaps requiring further research.

The research questions were derived from the background, problem statement, and purpose of the study. Ribble's (2011) nine elements of digital citizenship and Siemens's (2005a) theory of connectivism were analyzed as the conceptual framework.

The nature of the study was a qualitative case study where seven teachers and one project administrator in the Flat Connections Digiteen and Digitween Wiki Project were interviewed one time to discover their perceptions on integrating digital citizenship into middle school curriculum, barriers faced by students taking on the roles associated with digital citizenship, and how social media can be used to foster positive academic achievement when engaged in global collaborative projects in education. Digital artifacts from the Flat Connections Digiteen and Digitween Wiki Project were analyzed. The assumptions, scope and delimitations, limitations, and significance of this research were discussed. The significance of this study for positive social change was included.

Chapter 2 commences with a review of the literature related to digital citizenship, global collaboration, and the use of social media technologies in educational settings. Current research on Ribble's (2011) nine elements of digital citizenship and Siemens's (2005a) theory of connectivism are also included. Chapter 2 undergirds the need for the study by establishing the gap in the literature associated with digital citizenship, global collaboration, and the use of social media technologies in educational settings. The literature review and gap in the literature established the viability of the research questions.

Chapter 2: Literature Review

The purpose of this qualitative case study was to explore perceptions of middle school teachers on their students' growth as digital citizens while participating in a digital citizenship project using global collaboration and social media. Siemens (2008) noted that technology affords new educational opportunities: "The last decade of technological innovation - mobile phones, social media, software agents - has created new opportunities for learners." Shepard (2012) stated that "Technology enables learners to access knowledge beyond the scope of instructors or textbooks" (p. 127). Students' use of technology, especially social media, is increasing (Davis et al., 2010; De Abreu, 2010), and educators have been prompted to incorporate social media into classroom settings to reach students on a common ground (Ribble, 2011, p. 12). Using social media in educational settings may reap positive rewards as Jensen (2008) posited that K-12 school students' use of social technology has the potential to "…both define and stabilize young people's conceptions of their own place, identity, and participation in both local physical settings and more global electronic settings" (p. 94). However, students' use of social media tools in their personal lives outside of school may result in biases that prevent students from using them favorably in educational contexts (Poellhuber & Anderson, 2011, p. 117). Dalton et al. (2011) suggested that students' use of the Internet in educational settings may require students to learn new uses of technology despite their personal uses of the Internet outside of academic settings (p. 5). Additionally, students' use of social media may cause them harm now and in the future (Barczyk & Duncan, 2012; Hazari & Brown, 2013), and the potential for technology misuse and abuse has

been demonstrated in the literature (Ribble & Bailey, 2006). Ribble and Bailey (2005) proposed a "teaching solution" they called *digital citizenship* where "appropriate technology behavior" is taught (p. 2). Ribble's (2011) nine elements of digital citizenship serve as a starting point for addressing the issue of digital citizenship and appropriate technology use. Hollandsworth et al. (2011) noted that "digital citizenship encompasses a wide range of behaviors with varying degrees of risk and possible negative consequences. Lack of digital citizenship awareness and education can, and has, led to problematic, even dangerous student conduct" (p. 37). The literature does not provide insight on how or why middle school students take on the roles associated with digital citizenship when engaged in global collaborative projects infused with social media communications. It is also unknown how teachers might successfully incorporate digital citizenship into the middle school curriculum, and how teachers can positively foster digital citizenship among middle school students collaborating globally via social media communications. How social media can be used to enhance digital citizenship among middle school students is unclear. Research findings associated with the use of social media in higher education are plentiful, but it is not known whether the same findings apply to middle school students engaged in digital citizenship activities or whether they apply to global collaborative projects facilitated by social media communications. Teachers' perceptions on the integration of digital citizenship into middle school curriculums where global collaboration and social media are used are absent from the literature.

Chapter 2 includes a discussion of Ribble's (2011) nine elements of digital citizenship and Siemens's (2005a) theory of connectivism as the conceptual framework. A survey of research associated with the conceptual framework is presented. The review of the literature concludes with a discussion of key digital citizenship themes: digital citizenship and global collaborative projects, barriers to digital citizenship, digital citizenship and social media, and teachers' perceptions of integrating digital citizenship, social media, and global collaboration in the middle school curriculum.

Literature Search Strategy

An array of scholarly journals was collected for this literature review and was delimited by selecting only those that were peer-reviewed and those that were dated within the most recent five years of this writing. In some cases it was necessary to use several older articles. This was due to the limited availability of scholarly research associated with the integration of digital citizenship, global collaboration, and social media into the middle school curriculum. The following research databases were used to identify scholarly journal articles relevant to this study: ERIC, Education Research Complete, Academic Search Complete, Education from SAGE, ED/IT Library, ProQuest Central, Dissertation Databases, Computers & Applied Sciences Complete, and Google Scholar. A variation of search terms were used in conjunction with each database and included: *digital citizen, digital citizenship, digital citizen*, digital literacy*, digital literacy and student, global collaboration, global collab*, global and collaboration and education, social media and educat*, social media and educat* and citizen*, social media and educat* and collab*, social media and educat* and glob*, Ribble, Siemens,*

cyberbully*, cyber bully*, connectivism, and *connectiv**. Some searches yielded too

many results and were thereafter limited by including additional keywords and terms. To

expand the search results where needed or when too few articles were returned variations

on words were accounted for by using the asterisk or "*" wildcard. Search results were

evaluated for the most appropriate fit to the research topic of digital citizenship, social

media, and global collaboration.

<div align="center">**Conceptual Framework**</div>

The conceptual framework used to undergird this study included Ribble's (2011)

nine elements of digital citizenship and Siemens's (2005a) theory of connectivism.

Ribble's elements provided a lens through which the tenants of digital citizenship were

explored and analyzed, whereas Siemens's theory of connectivism provided a framework

for exploring and analyzing the collaborative and social nature of digital citizenship and

social media. Although alternative theories such as constructivism and chaos theory were

considered, they did not inform the literature search where digital citizenship, social

media, and global collaboration were concerned.

Digital Citizenship

Ribble (2011) suggested that "The term citizen is most commonly defined as a

native or naturalized person who owes allegiance to a larger state or collective and who

shares the rights and responsibilities afforded all members of that collective" (p. 7). As

such, citizens are bound to certain social expectations, and for society to operate in a

positive manner, individual citizens must adhere to those expectations as well as abide by

the rules or laws. As society becomes more social and global due to the use of

technology, citizenship takes on new meaning. Lyons (2012) noted that digital

citizenship is a "subset of citizenship" (p. 40). Ribble (2011) described digital citizenship

as "The New Citizenship" (p. 13). Furthermore, digital citizenship is defined as "the

norms of behavior with regard to technology use" (Ribble & Bailey, n.d., p. 1) and "the

norms of behavior for technology use" (Ribble & Bailey, 2006, p. 26). Ribble (2011)

defined digital citizenship as "the norms of appropriate, responsible behavior with regard

to technology use" (p. 10) as well as "the appropriate and responsible use of technology

in the educational field" (Ribble, 2012, p. 149). Additionally, the International Society

for Technology in Education (ISTE) developed the ISTE Standards for Students (ISTE•S)

and the ISTE Standards for Teachers (ISTE•T) as frameworks for learning and teaching,

respectively, in an "increasingly connected and global digital society" (ISTE, 2012b, ¶ 1).

Both ISTE Standards include entries for digital citizenship. The ISTE Standards for

Students include the following under the title *Digital Citizenship*

- Students understand human, cultural, and societal issues related to

  technology and practice legal and ethical behavior

- Advocate and practice safe, legal, and responsible use of information

  and technology

- Exhibit a positive attitude toward using technology that supports

  collaboration, learning, and productivity

- Demonstrate personal responsibility for lifelong learning

- Exhibit leadership for digital citizenship. (ISTE, 2007, p. 2)

The ISTE Standards for Teachers include the following under the title *Promote and Model Digital Citizenship and Responsibility*

- Teachers understand local and global societal issues and responsibilities in an evolving digital culture and exhibit legal and ethical behavior in their professional practices

- Advocate, model, and teach safe, legal, and ethical use of digital information and technology, including respect for copyright, intellectual property, and the appropriate documentation of sources

- Address the diverse needs of all learners by using learner-centered strategies providing equitable access to appropriate digital tools and resources

- Promote and model digital etiquette and responsible social interactions related to the use of technology and information

- Develop and model cultural understanding and global awareness by engaging with colleagues and students of other cultures using digital age communication and collaboration tools. (ISTE, 2008, p. 2)

Collier (2009) tagged the following definition for digital literacy, digital citizenship, and new media as "Critical thinking and ethical choices about the content and impact on oneself, others, and one's community of what one sees, says, and produces with digital media, devices, and technologies" (¶ 2). From an educational context, Crichton, Pegler, and Duncan (2012) stated that digital citizenship was "…a responsible way of sharing applications (apps) and using school based wireless networks appropriately…" in their

study on using mobile technology in schools (p. 24). Although the study by Crichton et al. defined digital citizenship within a specific context in education, the overarching theme of *appropriate and responsible use of technology* has emerged with respect to digital citizenship.

Although digital citizenship is often associated with students' appropriate and responsible use of technology in educational settings, Ribble (2009) clarified that digital citizenship is a starting point to assist all community members in learning about the responsible use of technology in all settings, and that parental involvement is important for students (p. 17). Because of the unique issues born of technology, everyone must learn about digital citizenship so that each member of society can become aware of the dangers and pitfalls as well as the positive outcomes associated with taking on the role of digital citizen in a global community. Although citizenship may be rooted in similar foundational contexts in both offline and online environments, digital citizenship yields a number of special case issues that must be considered to elicit appropriate and responsible actions in online settings. In the context of this research study the term digital citizenship is defined as the ethical, moral, and responsible use of technology to ensure the safety of oneself and others when collaborating in an increasingly digital, networked, and global society.

Why Digital Citizenship Matters

Technology is frequently used because it improves upon prior processes and generally makes life easier. However, technology impacts societies significantly, for better or worse. In the case of communications, technology affords new types of digital

communications that can elicit social change by "re-defining the concept of community" (Sincar, 2011, p. 219). Sincar (2011) also noted that "The impact of technology is one of the most critical issues in education" (p. 218). Sincar (2011) also argued that teachers need to transform into digital citizens to accommodate new technologies and the cultures created by their use (p. 219). Pusey and Sadera (2012) commented that "despite their young demographic and access to technology, the preservice teachers surveyed do not possess adequate C3 knowledge nor the ability to teach their future students to keep themselves and their data safe from harm" (p. 87). The C3 moniker translates to cyberethics, cybersafety, and cybersecurity, and is directly related to digital citizenship (p. 82).

For students, the tenants of digital citizenship are far reaching as the social media technologies with which they are intimately familiar imply a number of consequences that can have serious implications for their personal, educational, and future business lives. Ribble and Miller (2013) offered that "students are using tools created for adults, which requires them to become more mature in their interpersonal skills of how to balance their OL interactions with those in RL" where OL equates to online and RL equates to real life (p. 137). Chou, Block, and Jesness (2012) suggested that "digital citizenship should be emphasized to remind students of appropriate online behaviors" (p. 23). Without proper knowledge about how to use social media in an appropriate, responsible, and ethical manner, students may engage in online activities in a manner that may cause them and others harm. Such outcomes may haunt them for years to come, or for the rest of their lives in a worst case scenario. Digital citizenship matters because the

decisions students make and the actions students take when using social media have the potential to elicit both positive and negative social change. Living in a digital world equates to living in an increasingly connected world. This means that as digital citizens we must act as responsible individuals based on our digital interactions with others by following proper online rules of etiquette and behavior. Digital citizenship extends traditional citizenship into online communities that are frequently far reaching and that are often seen by many unintended visitors. The actions taken in online communities can cause harm to individuals and to others. Pusey and Sadera (2012) commented that "computer owners must know more than how the computer and the various programs function; they need to know how to keep themselves and their data safe from harm" (p. 87). Additionally, they indicated that educators must take into account the changing landscape of students' personal lives as "evidence of who our students are must remain an important factor in informing how we use the array of technological tools at our disposal to design rich and engaging learning experiences for all students" (Kennedy et al., 2008, p. 120). The need for a framework to study these phenomena resulted in the term digital citizenship.

Digital citizenship is not merely a label for a finite set of rules of behavior associated with technology use. Rather, digital citizenship is an emerging and developing topic that not only affects students, teachers, and parents, but affects everyone. Ribble (2012) noted that digital citizenship is in fact a "societal issue" (p. 149). As the technology associated with digital citizenship has a presence on a global scale, themes such as global awareness, multi-cultural and culture awareness, personal responsibility

and global responsibility, safety, legality, ethical behavior, differences in belief systems, and differences in social norms, attitudes, and behaviors must be evaluated continuously and take on new meaning in an online environment that can potentially be seen by anyone worldwide. Furthermore, the infusion of technology into society is one that continues at increasing rates (ISTE, 2012a, ¶ 1). Without a protocol or "common language" for appropriate and responsible online behavior and technology use, it is not difficult to imagine what negative outcomes and harm might develop in our online communities (Ribble, 2009, pp. 14, 17). Furthermore, the ISTE standards (2012a) noted the following regarding digital citizenship and students

> Simply being able to use technology is no longer enough. Today's students need to be able to use technology to analyze, learn and explore. Digital age skills are vital for preparing students to work, live and contribute to the social and civic fabric of their communities. (¶ 2)

Students must be introduced and sensitized to the underpinnings of digital citizenship if they are to become productive members of today's digitally interactive society. Ribble (2011) suggested that "It is the responsibility of educators and the school community to help define appropriate technology use," and educators can initiate the learning process in the classroom (p. 12). However, all members of society must take an active role in advancing the framework known as digital citizenship for an improved and socially appropriate and responsible digital society. Educators can initiate the learning process in the classroom, but all members of society must take an active role in advancing the

framework known as digital citizenship for an improved and socially appropriate and responsible digital society.

Appropriate and Responsible Use of Technology

Digital citizenship matters because of students' misuse and abuse of technology (Ribble, 2006, p. 1; Ribble & Bailey, n.d., p. 1; Ribble & Bailey, 2004, p. 22; Ribble & Bailey, 2005, p. 2; Ribble & Bailey, 2006, p. 26; Ribble, Bailey, & Ross, 2004, p. 7). Ribble and Bailey (2004) suggested that the phenomenon is akin to an outbreak (p. 22). Ribble and Bailey (2006) cited that students' misuse and abuse of technology is a major problem in schools (p. 26). Ribble and Bailey (2005) posited that students are out of control in their use of technology (2005, p. 2). Ribble and Bailey (2004) pointed to news coverage about how students are misusing and abusing technologies and each other (p. 22). To combat students' misuse and abuse of technology schools frequently use Acceptable Use Policies (AUPs), but those types of policies do not succeed in teaching students how to be effective digital citizens (Ribble, 2006, p. 1; Ribble & Bailey, 2005, p. 2; Ribble & Bailey, 2006, p. 26; Ribble, Bailey, & Ross, 2004, p. 11). Bell (2002) noted that AUPs are not complete solutions for promoting ethical computer use, and many stakeholders including faculty, students, and parents may not even know of the policy (p. 3). Hollandsworth et al. (2011) claimed that "acceptable use policies (AUPs) are not enough" as technologies bring about additional needs to educate students about the proper use of technologies (p. 46).

Additional reasons that AUPs are not sufficient for educating students about digital citizenship include the case where AUPs simply describe how to use technology in

a general sense. Unfortunately, AUPs do not address the seemingly limitless social, moral, and ethical concerns associated with technology use. How students treat each other using technology is a concern given the widespread use of technology by students and the special difficulties that arise with its use when used by students who are not educated about citizenship skills as they apply to technology use. The literature reveals that students use technology while in school to engage in hacking, and accessing forbidden sites online (Ribble & Bailey, 2004, p. 22), using email and Websites to intimidate or threaten others, downloading music illegally, plagiarizing online content, disrupting class time due to using cellular phones and game playing (Ribble & Bailey, 2004, p. 22; Ribble, Bailey, & Ross, 2004, p. 7).

Other factors indicating that AUPs are insufficient tools for educating students about digital citizenship include the need to address online privacy and trust of social networking sites (Shafie, Mansor, Osman, Nayan, & Maesin, 2011). Davis and James (2013) found that the teachers' coverage of online privacy issues was quite limited. Assumpcao and Sleiman (2011) found that password sharing, fighting back online, posting personal information about others without permission, plagiarism, and the use of malicious emails was present in their study of student use of blogs and email tools. Davis et al. (2010) found in their study that students downloaded music illegally, cheated others online, and some students were indifferent about how their actions might impact others online. Farmer (2011) added that some individuals may be "seeking validation, competing for popularity, venting, showing off, embarrassing oneself, damaging reputations, getting even, threatening, harassing. They also may be victims of online

cons and abuse" when engaging others online (p. 100). Farmer also included

"impact[ing] and build[ing] reputations every time they go online, especially when doing

social networking," and called for education rather than protection (p. 100).

It is not difficult to imagine how this applies to students at all age levels. As a

result, it is clear that some students are not ready to engage others online in a socially

responsible, ethical, moral, and respectful manner. Simply put, they are not prepared to

take on the roles of digital citizens, and traditional AUPs frequently do not address the

themes just discussed. Rather, effort must be dedicated toward the education of students

in digital citizenship. Without reasonable training, the hazards students might encounter

when collaborating with others online may grow exponentially due to a lack of

understanding, respect, moral and ethical principles, and appreciation of similarities and

differences between belief systems and cultures. Given students live in a global society

as a result of the availability of social media, they must learn to work with others in a

socially responsible manner if they are to become responsible digital citizens. Society

requires it, and the educational system must provide it via the implementation of digital

citizenship curriculums. Ribble and Bailey (2005) suggested that appropriate and

responsible use of technology cannot be legislated; rather, they proposed a "teaching

solution" and called it digital citizenship (p. 2).

Digital Citizenship Definition

For the purpose of this research, digital citizenship is defined as the ethical, moral,

and responsible use of technology to ensure the safety of oneself and others when

collaborating in an increasingly digital, networked, and global society. Although it is

possible to further delimit the definition to educational settings, findings in the literature

make clear that students' use of technology outside the classroom can impact students'

perception and use of technology in the classroom (Guo & Stevens, 2011). Narrowing

the definition in this manner would be too constraining as students' prior use of

technologies must be considered when students learn about digital citizenship. The

appropriate and responsible use of technology is essential as simply knowing how to use

a technology without regard to the impact its use will have could quickly cause harm to

individuals with whom they interact digitally. The definition highlights the need to

consider individuals' own behaviors as well as the behavior of others as collaboration

involves two or more individuals. Students must consider the impact their actions will

have for themselves in both the immediate and distant futures as well as how digitally

recorded actions may affect others in the short term and long term. The increasingly

digital and networked society elements highlight the nature of current technologies, such

as social media, as they are designed with collaboration in mind. This aspect of digital

citizenship is the crux of the issue as students must learn to use technology in a socially

acceptable manner as digital citizenship is a way of life (Ribble, 2011, p. 2). It is

insufficient that students simply learn how to use digital technologies for technology's

sake. Students must learn to use digital technologies in an appropriate and responsible

manner if they are to become productive members of a digital and networked society.

Teaching digital citizenship to students is essential as students will ultimately become

adults who also participate in a digital and networked society where collaboration is

common and individuals frequently interface via social media and other digital

technologies. Education is preparatory and future oriented. Students must learn about digital citizenship now to prepare for their role as digital citizens who interact with others in an increasingly digital society.

Ribble's Nine Elements of Digital Citizenship

To help students learn about the appropriate and responsible use of technology as well as become model digital citizens residing in an increasingly connected and digital society, Ribble (2009, p. 15; 2011, pp. 11, 15-44; 2012, p. 150), and Ribble and Bailey (n.d., p. 1; 2005, pp. 2-10; 2006, p. 26) formulated a nine element framework that can be used by students, teachers, parents, educators, business men and women, and all individuals in society. Ribble's (2009, p. 15; 2011, p. 11; 2012, p. 150) current nine elements of digital citizenship include (p. 11). Ribble (2011, p. 11) further categorized the nine elements of digital citizenship into three overarching groups that include (a) student learning and academic performance, (b) school environment and student behavior, and (c) student life outside the school environment. The categorization is represented below. Note that the list of nine elements follows no specific order aside from them being grouped into their respective categories.

- Student Learning and Academic Performance;
    - o digital access;
    - o digital literacy;
    - o digital communication;
- School Environment and Student Behavior;
    - o digital etiquette;

- o   digital security or self-protection;

- o   digital rights and responsibilities;

- Student Life Outside the School Environment;

  - o   digital law;

  - o   digital commerce;

  - o   digital health and wellness.

The three overarching categories can be used to help determine where to begin digital citizenship education as "The nine elements of digital citizenship are not simple, stand-alone issues. They relate to each other in a dizzying variety of ways" (Ribble, 2011, p. 43). Also, Ribble noted that there is no prescription for implementing digital citizenship in schools as the nine elements of digital citizenship can be prioritized to meet each individual school's needs. Finally, situated at the center of Ribble's nine elements of digital citizenship model is the *core goals* imperative that stresses "Improving learning outcomes and preparing students to become 21st-century citizens" (Ribble, 2011, p. 44). This research focused on Student Learning and Academic Performance, and School Environment and Student Behavior. Ribble's nine elements of digital citizenship are further described below and are preceded by their relative overarching classification categories.

- Student Learning and Academic Performance.

  - o   *Digital Access* is defined as the "full electronic participation in society. Can all users participate in a digital society at acceptable levels if they choose?" (Ribble, 2009, p. 3; Ribble, 2011, p. 11; Ribble, 2012, p. 150). Special

considerations need to be made for equitable access such as for students with special needs, students who may not have access at home, students whose economic backgrounds put them at odds with having access, and school districts whose funds are not sufficient for providing equitable access to all students. Teachers, administrators, parents, community members, and industry partners may be called upon to creatively solve the digital access dilemma;

o   *Digital Communication* is defined as the "electronic exchange of information. Do users understand the various digital communication methods and when each is appropriate?" (Ribble, 2009, p. 3; Ribble, 2011, p. 11; Ribble, 2012, p. 150). Digital communication is facilitated using personal computers including laptop and desktop computers, tablet computers, cell phones, wrist watches, and other devices using instant and text messaging, email, social media, and other online digital communications tools. As such, communicating digitally is a way of life for many, and students fit into this communication category. However, not everyone understands what is communicated using digital technologies is recorded and persists after it is deleted from the device or account from which it originated. Such "digital footprints" remain on institution's servers and likely backup copies of their server contents (Ribble, 2011, p. 33). Also, the type of communications issued such as tone, word choice, and professionalism are captured in digital format to be seen by potentially many other users. Students must also consider the setting in which

they are communicating with other digitally. If they send a digital message to someone in-school using their school's digital technologies, they must consider how those communications might reflect back on them and the school. Likewise, personal digital communications outside of school might impact how they are treated by others in-school. Ethical use of digital technologies for digital communications is important for all students as the consequences of poorly crafted digital messages and digital behavior can become fixed in cyberspace. Furthermore, because of portable technologies such as tablet computers and cell phones, students may disrupt their classes when communicating digitally with others;

o *Digital Literacy* is defined as the "process of teaching and learning about technology and the use of technology. Have users taken the time to learn about digital technologies and do they share that knowledge with others?" (Ribble, 2009, p. 3; Ribble, 2011, p. 11; Ribble, 2012, p. 150). Sometimes teachers and students assume too much with respect to their students' knowledge of technologies and students' proficiency with various technologies. However, students need instruction about how to use digital technologies. Studies indicate that a considerable number of students use technology outside of school, but personal and unguided proficiency does not necessarily equate to educational proficiency with one or more technologies in the classroom. Teachers need professional development opportunities to learn the basics about digital technologies as they often come to the classroom

without proper understanding about the digital technologies on which they are asked to provide instruction. To model correct use of digital technologies, teachers need guidance and training the same as students. Additionally, digital tools such as social media tools must be evaluated for appropriate and secure use within the classroom. Where online course offerings are concerned, educators must be prepared to select the best digital technology for use in online classrooms in accord for the task being addressed.

- School Environment and Student Behavior.

  o *Digital Etiquette* is defined as the "electronic standards of conduct or procedure. Do users consider others when using digital technologies" (Ribble, 2011, p. 11; Ribble, 2012, p. 150) or "The standards of conduct expected by other digital technology users" (Ribble, 2009, p. 15). With the rapid rise in number of digital technologies, students may not know how to communicate with others in a socially acceptable where care and respect is shown. Students should also consider cultural and societal differences when communicating with others when using digital technologies. Considering others is important and Ribble (2011) suggested that parents may not be able to model digital etiquette norms as they, too, are unable to keep up with the rapid advances in digital communication methods and tools (p. 29). Therefore, it is essential that teachers address and model the principles of digital etiquette in classroom settings. Students should learn to avoid cyberbullying, flaming, using foul language, acting in a disrespectful manner, and using technology to harm

others in general. If students are not provided instruction on digital etiquette

principles, they may use digital technology in ways that are not socially

acceptable if they simply have television and movie role models as a point of

reference (Ribble, 2011, p. 29);

o *Digital Rights and Responsibilities* are defined as the "those requirements and

freedoms extended to everyone in a digital world. Are users ready to protect

the rights of others and to defend their own digital rights?" (Ribble, 2011, p.

11; Ribble, 2012, p. 150) or "The privileges and freedoms extended to all

digital technology users and the behavioral expectations that come with them"

(Ribble, 2009, p. 15). Students must understand their rights and

responsibilities in a digital environment and how their actions can impact

others in the same environment. When a student creates an online artifact for

others to inspect, the creator has the right to their creation in terms of

ownership. Other students may refer to the artifact, but proper references and

citations must be used. Franklin (2011) noted the increased reports of student

plagiarism and in the media, and Rajasingham (2008) indicated that students

are increasingly plagiarizing in electronic settings; which may explain why

some teachers are hesitant to adopt the use of social media social media in

higher education (Rambe, 2012, p. 134). McKenzie (2000) warned that

technology facilitates plagiarism as students can easily "cut and paste the

thinking of others" at unprecedented levels, and Rajasingham (2008) also

discussed the cut and paste tactics employed by students when using the

Internet. McKenzie (1998) likened "The New Plagiarism" using technology to a virus that could become pandemic if not controlled (¶ 11). Jones (2011) in his study of 48 college students and found that 67% of students surveyed would intentionally plagiarize the works of others and that 50% of students engaged in or knew someone who engaged in Internet plagiarism (pp. 143-144). Szabo and Underwood (2004) found that 50% of higher education students surveyed in their study found it acceptable to use online material in ways that were academically dishonest (p. 180). Students clearly need training in this area given research findings if they are to become respectable digital citizens.

o *Digital Security (Self-Protection)* is defined as the "electronic precautions to guarantee safety. Do users take the time to protect their information while taking precautions to protect others' data as well?" (Ribble, 2011, p. 11; Ribble, 2012, p. 150) or "The precautions that all technology users must take to guarantee their personal safety and the security of their networks" (Ribble, 2009, p. 15). Digital security concepts are numerous and varied. They must therefore be included in a digital citizenship framework to help students learn how to protect themselves and others. Ribble (2011) cited three areas of security including personal, school, and community security. Associated with those areas are hardware and network security. Examples of specific security concerns include online identity, phishing, online stalking, hackers, viruses, terrorist threats, and the use of email, social media, and other digital

communications tools. Students must learn how to protect themselves by using appropriate digital technology measures such as virus, malware, spyware, and adware scanners, using firewalls, protecting wireless connections, managing their online profiles and the personal information contained therein, and maintaining backups of their important files and entire systems (pp. 41-44). Students must learn that participating in a digital society comes with many risks, and that they must learn how to negotiate those risks if they want to ensure their online safety and the safety of others.

- Student Life Outside the School Environment
  - *Digital Commerce* is defined as the "electronic buying and selling of goods. Do users have the knowledge and protection to buy and sell in a digital world?" (Ribble, 2009, p. 3; Ribble, 2011, p. 11; Ribble, 2012, p. 150). Students make online purchases for a variety of reasons, but they must make careful decisions about online purchases because their privacy and security may be compromised. Likewise, because purchasing goods and services online is quite easy, students may fall into a habitual click-to-purchase mindset without recognizing the debt they are accumulating;
  - *Digital Law* is defined as the "electronic responsibility for actions and deeds. Are users aware of laws (rules, policies) that govern the use of digital technologies?" (Ribble, 2011, p. 11; Ribble, 2012, p. 150) or "The legal rights and restrictions governing technology use" (Ribble, 2009, p. 15). Students must learn about digital law as their actions in cyberspace can affect their

digital and non-digital citizenship status should they engage in illegal

activities. Some students may be unaware that they are breaking laws

associated with certain online activities or digital activities. Examples of

potentially illegal use of digital technologies include peer-to-peer file sharing,

illegally acquiring or distributing software, computer hacking, identity theft,

and sexting (Ribble, 2011, p. 33). Should students find themselves guilty of

having engaged in illegal digital activities, they may be fined, labeled a sex

offender, or placed into prison. Thus, students must learn that they will be

held accountable for the actions they take in a digital world;

o *Digital Health and Wellness* is defined as the "physical and psychological

well-being in a digital technology world. Do users consider the risks (both

physical and psychological) when using digital technologies?" (Ribble, 2011,

p. 11; Ribble, 2012, p. 150) or "The elements of physical and psychological

well-being related to digital technology use" (Ribble, 2009, p. 15). Students

must understand that using technology, especially for extended periods of

time, can cause negative physical and psychological effects. Ribble (2011)

offered the following concerns about students' health and wellness (a)

ergonomics; (b) repetitive motion injuries; (c) Internet addiction; (d) video

game addiction; (e) withdrawing from society (p. 38). Without knowledge

about the potentially harmful effects of digital technology use, students might

find themselves in harm's way simply by taking on the role of digital citizen.

Students must take into consideration the manner in which they use digital

technologies as well as the amount of time spent using digital technologies to ensure that the negative consequences associated with digital technology use do not overcome them.

Given Ribble uses the term *users* in the above guiding questions, the framework can be applied to anyone. Thus, students, parents, educators, industry participants, and all others can benefit from the framework assuming they use technology as digital citizens participating in a digital society.

Digital Security

Although Ribble's nine element framework is tightly interwoven, this research study focused on digital literacy, digital communication, digital etiquette, and digital security. The current literature revealed a number of findings associated with those topics. Digital security is an important facet of digital citizenship as students may jeopardize their safety online and the safety of others if they do not manage their information and communication effectively. Some social media sites provide user profiles in which students may place highly personal information. Without knowledge about how publishing digital profiles online may impact them and others, students may later regret actions engaged in and information placed online as deleting digital histories permanently can be difficult if not impossible. Students must effectively negotiate the security settings of social media sites once they decide what to place online about themselves and others. Assumpcao and Sleiman (2011) found that students did not take security precautions for themselves or others, nor did they practice good online etiquette when communicating online. Davis and James (2013) found that 95% of their

participants used withholding strategies where incomplete information was provided to others whereas 90% of their participants engaged in proactive strategies such as managing online privacy settings or providing deceptive or false information (p. 16). However, Davis and James also found that for some platforms online 20% of students' privacy strategies were missing and 11.9% of students overlooked the available privacy settings entirely (p. 17). Shafie et al. (2011) suggested that the participants in their study are generally *concerned about* online *privacy*, but may *dismiss or trade their online privacy if doing so is to their benefit* (p. 161). As the research demonstrates, students need to be educated about digital security to protect themselves and others. A security tradeoff may at first seem unimportant but may have significant negative consequences later.

Digital Literacy

Students must learn about digital literacy using multiple perspectives as "it is recognised [sic] that core technology based skills do not necessarily translate into sophisticated skills with other technologies or general information literacy" (Kennedy et al., 2008, p. 117). Although students might use a digital tool outside of school for entertainment and leisure activities, they must learn how to use the same tool in educational settings for learning. Doing so may help students transition their use of social media tools to business settings later in life as digital citizenship is a skill that will apply for life given society is increasingly digital and networked. To scaffold this need, Poellhuber and Anderson (2011) suggested that younger students might be biased in their personal use of social media tools in a way that prevents them from considering the tools

as useful in formal educational contexts (p. 117). Without investigating options for using various electronic tools and making evaluations about when to use a specific tool, students may find themselves at a disadvantage as digital citizens.

Digital literacy is a concern for educators as well. Pusey and Sadera (2012) found that preservice teachers were lacking in competency about teaching students how to use social media technologies. If teachers do not have the ability to provide instruction on and model digital citizenship roles due to a lack of knowledge about the technology involved, society cannot expect students to assume the role of model digital citizens. The manner in which teachers express themselves regarding technologies associated with digital citizenship is also important. Guo and Stevens (2011) found that positive teacher attitudes towards social media technologies can have a positive impact on students' use of social media, and some cases of prior use of technologies had a negative impact on students' use of social media. It is important that teachers receive training on digital citizenship and associated technologies such as social media so that they can create a positive atmosphere for students learning about digital citizenship.

Digital Communication and Digital Etiquette

Considering digital communication implies proper digital etiquette as far as digital citizenship is concerned, I combined those elements as they are so closely related. Although the context of communicating with others in a digital context may afford unique opportunities and challenges, Bati and Atici (2010) found that 82.4% of their participants believe that communicating online is as real as communicating with others offline, and 84.8% integrate their use of Web 2.0 tools as part of their lifestyle (p. 3687).

This suggests that students are highly engrossed in their digital communications with others and possibly do not differentiate between face to face and digital communications. If students view digitally communicating with others as normal behavior, they must consider the manner in which they are communicating. Do they take into consideration whether the tools pose potential threats to themselves or others? Students may also approach digital communications without appropriate understanding of digital etiquette and protocol. Do students use poor grammar or texting-style communications when engaging others in school and professional activities? Do students know when to shift digital communication styles from less formal to more formal depending on the context? Do students show respect for others when communicating using digital tools? Davis et al. (2010) found that some teens were quite self-centered focusing on their own well-being online without concern for how their actions might impact others.

Rationale Relating Research Questions and Ribble's Framework

The first research question (RQ1) asks: What are teachers' perceptions about middle school students' development as digital citizens when engaged in global collaborative projects? Students may not understand the technologies available for global collaboration (digital literacy), may not understand how to communicate in an appropriate and responsible manner using technology (digital communication and digital etiquette), and may not know how to protect their identities and the identities of those with whom they are collaborating online (digital security). By using Ribble's elements of digital literacy, digital communications and etiquette, and digital security, RQ1 explored

how students' perceptions of digital citizenship are enhanced as students engage in global collaborative projects in education.

The second research question (RQ2) asks: What are teachers' perceptions about strategies middle school students used to overcome barriers to taking on the roles associated with digital citizenship when engaged in global collaborative projects? Students may encounter a number of barriers when taking on the roles of digital citizens. Technology may serve as a barrier (digital literacy), communicating in an appropriate and responsible manner when using technology may serve as a barrier (digital communication and digital etiquette), and protecting their identities and the identities of those with whom they are collaborating online may serve as a barrier (digital security). By using Ribble's elements of digital literacy, digital communications and etiquette, and digital security, RQ2 explored how students' perceptions of digital citizenship and their willingness to take on new roles associated with digital citizenry when engaged in global collaborative projects in education.

The third research question (RQ3) asks: What are teachers' perceptions about the use of social media and global collaborative projects to enhance middle school students' digital citizenship and academic achievement? Students use social media outside of school, but that use does not always port to appropriate and responsible educational use of technology in classroom settings. Social media allows students to engage others in global collaborative projects in education. By investigating how social media can be used for global collaboration (digital literacy), how social media can be used in an appropriate and responsible manner (digital communication and digital etiquette), and

how social media can be used to protect students' identities and the identities of those

with whom they are collaborating online (digital security), the study added clarity to the

use of social media in digital citizenship educational settings. By using Ribble's

elements of digital literacy, digital communications and etiquette, and digital security,

RQ3 explored how social media can be used to enhance/scaffold students' perceptions of

digital citizenship in global collaborative projects in education.

The fourth research question (RQ4) asks: What are teachers' perceptions

regarding the integration of digital citizenship, global collaboration, and social media into

the middle school curriculum? Teachers' perspectives on integrating digital citizenship,

social media, and global collaboration in the middle school curriculum are unknown.

Ribble's elements of digital literacy, digital security, digital communication, and digital

etiquette served as the primary lens through which teachers' perceptions about integrating

digital citizenship, social media, and global collaboration in the middle school curriculum

were examined. The remaining elements of digital access, digital commerce, digital law,

digital rights and responsibilities, and digital health and wellness furthered the

investigation to determine the role they play when integrating digital citizenship, social

media, and global collaboration in the middle school curriculum. By using Ribble's nine

elements of digital citizenship, RQ4 explored teachers' perspectives on the integration of

digital citizenship, global collaboration, and social media into the curriculum.

Ribble's Nine Elements of Digital Citizenship in Prior Research

Scholarly research in the form of published journal articles based on Ribble's nine

elements of digital citizenship consists of Sincar's 2011 and 2013 articles at the time of

this writing. In a qualitative study involving 17 prospective teachers' digital citizenship behavior norms, Sincar (2011) found that the participants exhibited behavior norms associated with digital communication and digital literacy whereas the participants were deficient in their behavior norms associated with the remaining nine elements including "digital access, digital etiquette, digital commerce, digital rights and responsibilities, digital law, digital health and wellness, and digital security" (p. 25). In a mixed methods study involving 185 prospective teachers, Sincar (2013) found that inappropriate behavior was exhibited by prospective teachers and more frequently by male prospective teachers when using social media and digital devices than women. Compulsion, absent-mindedness, and indifference were cited as root causes of the inappropriate behavior. Sincar suggested that the research findings indicated that prospective teachers do not yet possess a command of digital etiquette norms; which places them in a precarious position if they are to teach students the tenants of digital citizenship and serve as role models for the same (p. 10). As indicated by Sincar's two articles based on Ribble's nine elements of digital citizenship, prospective teachers are not prepared to model appropriate and responsible digital citizenship behavior. This finding necessitates digital citizenship training for prospective teachers. Professional development opportunities may also be warranted for seasoned teachers as their age may put them at a greater distance from current digital technologies than prospective teachers.

Dissertations that used Ribble's digital citizenship framework are sparse, but include the works of Lyons (2012), Suppo (2013), and Boyle (2010) at the time of this writing. Lyons (2012) conducted a quantitative ex post facto study that investigated how

student gender and grade level influenced students' roles as digital citizens. Lyons surveyed 829 students across grades 5, 7, 9 and 11. Ribble's digital citizenship elements of digital communication, digital etiquette, digital law, and digital rights and responsibilities were used to frame the study with respect to students' risky online behavior. Lyons found that males exhibited a greater number of personal safety risks and greater digital citizenship abuse than females (p. 76). Females were provided more online parental guidance than males. Parental involvement decreased as students moved upward in grade level, personal safety issues and digital citizenship abuse increased as students moved upward in grade level. As students moved from one grade to the next the number of incidents of cyberbullying increased. The research indicated that students' risky online behavior increases as students progress through grade levels, and that parental involvement decreases as students progress through grade levels. This research finding suggests that Ribble's digital citizenship model can be useful when studying students' online behavior as it addresses themes associated with risky online student behavior and can guide studies on the same.

Boyle (2010) conducted a quantitative quasi experimental study involving ninth grade students to determine whether students' exposure to a digital citizenship curriculum would influence their normative behavior associated with technology use. The study yielded 150 usable results and leveraged Ribble's nine element digital citizenship framework as well as Ribble and Bailey's (n.d.) Digital Driver's License survey instrument to assess the impact of a digital citizenship curriculum on students' normative behavior associated with technology use. Boyle found that implementing a digital

citizenship curriculum had a statistically significant positive impact on students

normative behavior for the following elements of digital citizenship: digital etiquette,

digital communication, digital literacy, digital commerce, digital law, digital rights and

responsibilities, and digital health and wellness. The two digital citizenship elements that

were not found to have a statistically significant impact on students' normative behavior

of technology use included digital access and digital security. It is possible that some

schools might already focus on digital security and perhaps students growing up digital

have a better appreciation for digital security. This finding is not fully consistent with

existing literature as digital security is a considerable concern for students' online safety.

Parents may also contribute to students' digital security awareness as digital natives are

now parents and are better prepared to positively influence their children where online

safety and security are concerned. Digital access may be explained by students having

more opportunities for access given the ubiquitous types of technology they have

available to them such as Internet connected laptops, tablets, console and portable gaming

systems, televisions, and so on. Digital access may not be a concern in the school system

in which Boyle's study was implemented. The findings of the study are significant as

they demonstrate that exposure to digital citizenship curricula can have significantly

positive effects on students' normative use of technology. Ribble's digital citizenship

framework was effectively used to frame the study as well as indicate a need for student

exposure to digital citizenship themes.

　　　Suppo (2013) conducted a quantitative study that yielded 123 usable surveys to

study perceptions on digital citizenship as held by Pennsylvania public school

superintendents, curriculum coordinators, and technology coordinators. Suppo's study

was based on Ribble's digital citizenship framework and an adapted digital citizenship

survey also developed by Ribble. The research findings indicated that digital rights and

responsibilities, digital literacy, digital security, digital law, digital access, digital

etiquette, and digital communication were of key concern starting with most important

and ending in least important. Digital commerce and digital health and wellness were

deemed least important and were not addressed as significantly as were the other

elements of digital citizenship. Suppo found that digital citizenship concepts are not

taught as frequently in elementary schools as they are in middle and high schools. While

83% of participants indicated that digital citizenship was taught in their districts, 33% of

the respondents indicated that digital citizenship was taught using organized effort. The

study participants indicated that 17% of their school districts included digital citizenship

in their curricula minimally or to no extent (p. 86). School geographic setting, participant

age, gender, and employment position were not statistically significant in influencing

participants' perceptions on digital citizenship. Suppo found that the participants viewed

traditional behavioral problems as warranting more attention than those arising from poor

digital citizenship skills whereas all participants supported the need to address digital

citizenship within Pennsylvania public schools (p. 90). Suppo's study highlights the

concern for digital citizenship and the need to teach students about digital citizenship

with the public school system.

Based on the collective findings of the above literature that uses Ribble's digital

citizenship framework, the findings demonstrate that Ribble's digital citizenship

framework provides a structural element to aid all stakeholders' understanding of digital

citizenship and around which digital citizenship can be designed. School administrators,

teachers, parents, and additional stakeholders can use Ribble's digital citizenship

framework and other digital citizenship tools to implement digital citizenship curricula as

well as investigate what all stakeholders know about digital citizenship.

Siemens's Connectivism

Siemens's (2005a) theory of connectivism is "a learning theory for the digital

age" where emphasis is placed on networking with and establishing connections to

human and non-human information resources. Drexler (2010) noted that the "principles

of connectivism equate to fundamentals of learning in a networked world" (p. 374).

Whereas other learning theories such as behaviorism, cognitivism, and constructivism

apply to traditional educational settings, connectivism is specifically oriented toward

technology and the unique information processing skills that students must possess in

increasingly digital and connected societies (Siemens, 2005a). Williams et al. (2011)

suggested that society is entering into an *interactive age* that overshadows the

information age, and that learners are no longer receivers of knowledge but use social

networking tools to interact and collaborate (p. 44). Williams et al. cited two styles of

learning: "prescriptive learning (which is fixed and predictable) and emergent learning

(which is unpredictable and arises out of the interaction between the learners and their

context)" (p. 45). Williams et al. defined emergent learning as:

> learning which arises out of the interaction between a number of people and
>
> resources, in which the learners organize and determine both the process and to

some extent the learning destination, both of which are unpredictable. The

interaction is in many senses self-organized, but it nevertheless requires some

constraint and structure. It may include virtual or physical networks, or both. (p.

41)

Emergent learning, as defined by Williams et al. aligns well with connectivist principles

as it highlights human and nonhuman information resources and accounts for the

unpredictability that is associated with maintaining a diverse set of networked

connections as is the case with networked learning. Despite the connectivist focus on

networking and technology, Siemens noted that the individual takes precedence when

learning in a networked technical environment:

The starting point of connectivism is the individual. Personal knowledge is

comprised of a network, which feeds into organizations and institutions, which in

turn feed back into the network, and then continue to provide learning to [the]

individual. This cycle of knowledge development (personal to network to

organization) allows learners to remain current in their field through the

connections they have formed. (Siemens, 2005a)

Connectivism stipulates that information as well as our knowledge foundation is

in constant flux, and information procurement and learning are continuous.

Connectivism also presumes that collaboration with others is frequently using informal

means, but informal communications are key to learning and information processing in

the digital age. Furthermore, efficiency in sorting through vast arrays of information to

locate what is needed is a tenant of connectivism.

Siemens likened the individual to a network that connects to other networks to exchange information in a two-way manner for the sake of learning. Connectivism stipulates that know-where is becoming as important as know-how and know-what as the capacity to access information needed is becoming more important than what is already known. Siemens used the analogy of the pipe where "the pipe is more important than the content within the pipe." The pipe can be likened to a connection to an information resource. Knowing which pipe to select may be more significant than what is passed through the pipe or connection in terms of information. Accessing information in a timely and accurate manner becomes more important than the information sought. Furthermore, as learning is based on collaborative interactions with others, learning becomes reliant on group, social, and shared experiences. Connectivism applies less frequently to formal learning environments such as classrooms, and more frequently to informal, personal, and industrial settings. Whereas traditional learning takes a linear format, learning becomes non-linear and seemingly randomized as students must *plug into* networked information resources in an as-needed or on-demand fashion per connectivist principles. For these reasons connectivism is applicable as a lifelong learning theory appropriate for the digital age and is applicable to investigating students' perceptions of digital citizenship where students use social media to engage in global collaborative learning.

Key Principles of Siemens's Connectivism

Siemens identified eight principles of connectivism:

- Learning and knowledge rests in diversity of opinions.

- Learning is a process of connecting specialized nodes or information sources.

- Learning may reside in non-human appliances.

- Capacity to know more is more critical than what is currently known

- Nurturing and maintaining connections is needed to facilitate continual learning.

- Ability to see connections between fields, ideas, and concepts is a core skill.

- Currency (accurate, up-to-date knowledge) is the intent of all connectivist learning activities.

- Decision-making is itself a learning process. Choosing what to learn and the meaning of incoming information is seen through the lens of a shifting reality. While there is a right answer now, it may be wrong tomorrow due to alterations in the information climate affecting the decision. (2005a)

Connectivism is oriented toward digital communication and using digital technologies to facilitate collaborative learning. Establishing endless connections with others and non-human information resources is facilitated by technology that supports networking and networked learning. In the context of this study social media allows members of a digital society to connect and network with each other. Social media therefore facilitates connectivity and learning under connectivism.

How students use social media is contingent on students taking on the roles of digital citizens. As social media connects digital citizens to each other easily and rapidly in a boundless or networked fashion, citizens may leverage the lived experiences of others as surrogates for living the experiences themselves (Stephenson, 1998). Living

vicariously through the experiences of others may be facilitated by connectivism and social media. However, members of society should engage in such practices within the norms of society in a socially acceptable and responsible manner. Educating students in the principles of digital citizenship can help society achieve this goal, and connectivism can be used to guide the way.

The principles of connectivism that guided this study include using technology to make unique connections with others, valuing a diversity of opinions, learning resides in non-human appliances, accessing and extracting meaningful and relevant information, thinking and emotions, motivation, diversity of learning options, artifact creation and sharing, and tool use. Those principles of connectivism served as a composite lens through which students' willingness to engage in digital citizenship practices and take on the roles of digital citizens were investigated. The same lens guided an exploration on how social media influences global collaboration and learning in digital settings.

Rationale Related to Specific Research Questions and Siemens's Connectivism

The first research question asked what teachers' perceptions are about middle school students' development as digital citizens when engaged in global collaborative projects. Students' perceptions of digital citizenry may be enhanced by applying the principles of connectivism to digital citizenship. That is, students may benefit from understanding the value of multiple opinions and perspectives on a topic, that learning in a networked society means valuing the connections and types of connections to other information resources, and that valuing the relevance and quality of information is key to interacting with others in a globally collaborative format. Social media can facilitate

collaborative learning, but using social media in a socially appropriate and responsible manner is reliant on students knowing how to establish and maintain connections in a networked society. This fundamental principle can help students become model digital citizens if they understand the principles of connectivism to help set the stage for digital citizenship. A gap is found in the literature where teachers would address students' perceptions of digital citizenship, global collaboration, and social media using a connectivist framework.

The second research question asked what teachers' perceptions are about the barriers students had to overcome to take on the roles associated with digital citizenship for middle school students engaged in global collaborative projects. When involving technology in educational settings, educators potentially face learning hurdles as well as students. However, connectivism helped steer the study with respect to its technology oriented roots. Where some students might need help with learning a new technology outright, others may not feel comfortable using a new technology in educational contexts. Considering social media, this technology may serve as a barrier outright or in the case of using it in educational contexts. Connectivism is useful in this context as it can be used to offset technical skills deficiencies by supporting learning in a just-in-time or on-demand fashion due to the premise of making ad-hoc connections to garner understanding about a topic in real time. The same applies to teachers, and per connectivist principles teachers become consumers and sharers of knowledge such that they become more equal to students in the learning process. This supports teachers learning new technologies, such as social media, along side of students. Connectivism

also helped inform the study where digital citizenship is concerned as various barriers associated with changes in learning techniques may affect students' willingness and ability to take on the roles associated with digital citizenship. By utilizing the principles of connectivism, perceived barriers to students' taking on the role of digital citizen, collaborating globally, and using social media can be identified and managed.

The third research question asked what teachers' perceptions are about the use of social media and global collaborative projects to enhance middle school students' digital citizenship and academic achievement. Connectivism was used to identify how students can leverage networked learning in a globally collaborative environment. The principles of connectivism can be used to guide students with the task of using social media in global collaborative projects. The principles of connectivism can be used to introduce students to networked learning as well as help identify their strengths and weaknesses as global learners. Students' ability to use social media in a manner that is conducive to learning is a critical aspect of students' success as global learners and digital citizens. Social media is a technology familiar to most students, and by framing its use within a connectivist prescription, students may more willingly and actively take on the roles associated with digital citizens. My study examined the use of social media as a scaffold for enhancing students' perceptions of digital citizenship. The principles of connectivism were used to examine social media from a connection generating and information sharing perspective. Furthermore, the power of connections can be leveraged as a lifelong learning tool and can be used to augment students' individual personal learning networks.

By integrating connectivist principles in a way that empowers students, learners may take on a more active role as digital citizens.

The fourth research question asked what teachers' perceptions are regarding the integration of digital citizenship, global collaboration, and social media into the middle school curriculum. Siemens's connectivism provided a lens through which global collaboration and social media were investigated. The principles of connectivity, networking, and utilizing human and non-human information resources and artifacts guided the investigation on the matter of bridging the gap between individualized learning and collaborative learning. The same bridge was used to provide illumination about how teachers perceive connectivism and digital citizenship as theories that support each other to facilitate global collaborative learning using social media.

Siemens's Connectivism in Prior Research

Research was found that incorporated Siemens's connectivism in educational contexts as a learning theory, regarding how connectivism is applicable to learning when using technology, and how connectivism is used in learning when using social media specifically. Few studies tested connectivism as a learning theory, but research demonstrated interest in using connectivism as a learning theory. A research framework associated with connectivism was found in the literature. Specific facets of connectivism have been found in educational contexts, and connectivism has relevance in professional development opportunities as well as in social media.

Connectivism as a learning theory. Few research studies designed to test connectivism as a learning theory are found in the literature, and Kop and Hill (2008)

suggested that connectivism is "ripe for further studies" (p. 4). Boitshwarelo (2011)

described connectivism as "a relatively new instructional framework" and called for

additional research on connectivism for use in instructional environments (p. 161). In

comparing well researched theories of learning and social change to connectivism Bell

(2011) noted that

> …connectivism experienced a huge growth in the blogosphere, the peak
>
> coinciding with the very successful MOOC CCK08. Taking 2008 as an example,
>
> Siemens and Downes made a huge contribution by way of argument, exposition,[2]
>
> and interaction via CCK08, but the contribution to knowledge that emerges from
>
> rich studies of practice has been lacking to date. (p. 105)

Directly testing connectivism as a learning theory, Akella (2012) conducted a qualitative

thematic analysis on data gathered from an open ended questionnaire that was

administered to 20 students in higher education. Akella noted that connectivism has a

tremendous potential for the digital age (p. 67), but lacks empirical evidence about the

matter (pp. 63-64, 67). The purpose of the study was to determine whether and to what

extent connectivism is a suitable learning theory for the digital age (p. 63). Akella used a

Wiki to test connectivism as a networked learning theory and the results indicated that

learning "occurred through online social networks" (p. 72). Akella supported

connectivism as a networked learning theory but called for additional research on the

matter.

Whereas Akella's study solicited student feedback within higher education, my

study solicited one project administrator and seven middle school teachers' feedback

about their students learning in a globally collaborative and networked environment. I leveraged Siemens's theory of connectivism and Ribble's nine elements of digital citizenship to formulate a more complete understanding of student engagement and learning in a globally collaborative and technologically supported learning environment.

   Furthering connectivism and the utility of connectivism. A study was found that proposed a research framework for connectivism. That is, Boitshwarelo (2011) conducted a case study involving ten teachers of unspecified rank and affiliation who participated in a connectivist online learning environment dubbed the *Biology Teachers Online (BTO)* (p. 173). The study included having participants iteratively seek answers within their schools and school communities to questions provided. Boitshwarelo found that participation in the BTO was low and cited organizational culture, policy issues, and lack of information and computing technology (ICT) resources in schools as factors that did not support iterative and collaborative learning under connectivist principles (pp. 174-175). Boitshwarelo's research framework for connectivism utilized "online communities of practice, design-based research, and activity theory" as the foundation (p. 161). Boitshwarelo conceptualized the theories and their relationship to connectivism in an interconnected framework called the *framework of synergies* (p. 171). Each component interacts with each other component and is situated within the connectivist ring that envelopes the elements of communities of practice, design-based research, and activity theory. The framework stresses a dynamic and flexible design that supports "continuous, cyclical, and iterative" research processes that can begin at any point in the inner triad of learning theories (p. 172).

A study was found that revealed that connectivist principles were found in an online social networking site and that application of connectivism may be a useful tool in expanding the knowledge of online collaborative environments. Conole, Galley, and Culver (2011) conducted a case study on the social networking site Cloudworks to determine patterns of user behavior across four network learning frameworks including "communities of inquiry," "communities of practice," "activity theory," and "actor-network theory" (p. 2). Exact ages of the participants were not specified, but global participation was noted. Conole et al. noted that Cloudworks promotes complete visibility of all content for all users in a global multidisciplinary manner where all stakeholders can interact with each other without boundaries (p. 128). The research revealed Cloudworks being used for "events," "debates," "open reviews," "resource aggregation," "courses," "reading circles," "learning design," and "expert elicitation and consultation" (pp. 129-130). Although not implemented in Conole et al.'s study, they posit that applying the principles of connectivism to Cloudworks may help describe and measure the unique interactions that are emerging in newer online collaborative environments (p. 134).

Although the two studies above address a research framework and a case study on the interactions of individuals within a social media site, the studies do not address how connectivism can be applied to middle school students. Likewise, administrator and teachers' responses to connectivist principles are absent in those studies, especially where applied to digital citizenship. My study incorporated those themes in conjunction with

administrators and teachers in who teach in middle schools. Likewise, my study

incorporated the elements of digital citizenship in addition to connectivist principles.

Connectivism and K-12 and higher education. Few studies on connectivism

relate to K-12 or higher education students. Aside from the first study that involved

participants in higher education mentioned above, Trnova and Trna (2012) conducted a

design-based research study involving 48 high school students. Trnova and Trna

identified several connectivist factors, connectivist teaching/learning methods, and

connectivist principles that suggested that connectivism is useful for teaching students in

science and technology curriculums in an international ICT-infused collaborative format.

Connectivist teaching and learning methods were cited as important and included

communication, exchange of experiences between teachers, educational methods, subject

knowledge and skills from global contacts, collaboration competencies, team

collaboration among teachers as well as students in a global setting (p. 494). Hogg and

Lomicky (2012) conducted a mixed methods factor analysis study involving 465 higher

education students. The four connectivist properties for optimizing learning included

diversity, autonomy, interactivity, and openness, and were used to frame the study to

determine whether connectivism was present in the lived experiences of students who had

taken online courses prior to participating in the study (p. 102). Although the elements of

autonomy, interactivity, and openness were found in the results of the study, Hogg and

Lomicky called for further research in the area of applying connectivism to online

learning (p. 111).

The above studies address some connectivist learning principles situated in high school and higher education settings. Likewise, feedback was solicited from students and teachers. However, the studies do not relate connectivism to digital citizenship. My study addressed this gap by studying digital citizenship through a connectivist lens and by incorporating feedback from teachers on their perceptions of their students' development as digital citizens through global collaboration and social media.

Connectivism and professional development. A number of studies on connectivism apply to professional development scenarios. Fonseca (2011) reported on a case study of an EduCamp professional development workshop where teachers learned social software from each other in an unstructured manner. Although the workshop was not specifically designed with connectivist principles in mind, Fonseca analyzed the workshop and outcomes through a connectivist lens and found that this style of professional development was suitable as an alternative form of professional development. Fonseca dubbed the workshop as an *unconference* (p. 63) and found that the unconference exhibited the following connectivist principles: diversity of opinions, specialized information resources, decision making, uncertainty, ambiguity, chaos, continuous, complex co-creation, and connected specialization (p. 71). The use of technology and unstructured learning to support personal learning environments and personal learning networks was deemed a success in this case study.

Cowan, Neil, and Winter (2013) conducted a mixed method study wherein 46 university faculty were surveyed and 15 university faculty were interviewed about their use of connectivist principles in their online instruction. Cowan et al. framed their study

using connectivism and the eight associated principles. It was concluded the connectivist principles were present in teachers' professional development activities as those activities were individualistic and person-centered. Teachers cited self-fulfillment and professional development costs as two themes that emerged from the study in terms of having connectivist overtones. Cowan et al. noted that their study revealed that successful online teachers must be connected, innovative, and dedicated to life-long learning (p. 17). Those findings are directly supportive connectivist principles.

Mackey and Evans (2011) applied connectivist principles to a prior case study conducted by Mackey involving 15 teachers pursuing an online graduate diploma in ICT. The original study focused on teacher professional development, the connections made between the participants, and networked learning. Mackey and Evans found that participants upheld connectivist principles as they formed weak ties by creating *superficial connections* with others to complete the professional development training (p. 11). Participants took on the role of *brokers* as they bridged various networks in their "online learning community and their own community of practice" to make relevant to their professional lives what they learned in the professional development training (p. 12). Participants exhibited autonomous behavior and managed many connections per connectivist principles.

Whereas the above studies used connectivism as a lens through which learning was analyzed, the studies focused on adults and professional development. The studies did not consider the elements of digital citizenship nor did they include middle school administrators or teachers. Middle school teachers and administrators were selected for

this study as research on digital citizenship was predominantly focused on high school students, college students, and adults in the literature. Knowledge about how middle school teachers incorporate digital citizenship, social media, and global collaboration was identified as a gap in the literature. My study addressed the gap in the literature where middle school teacher and administrator feedback is used to analyze digital citizenship, global collaboration, and social media through a connectivist lens.

Connectivism and MOOCs. A number of studies on connectivism apply to alternative classroom formats such as massive open online courses (MOOCs). Milligan, Littlejohn, and Margaryan (2013) conducted a qualitative study by interviewing 29 working professionals in the field of education or graduate students who engaged in collaboration using a connectivist massive open online course (cMOOC). The intent of the researchers was to identify patterns of engagement and variables that influenced participants' engagement in the cMOOC. Three types of engagement were discovered: "active participation, passive participation, and lurking" (p. 1). Engagement was mediated by "confidence, prior experience, and motivation" (p. 1). The research findings showed that the active participants both created and consumed content, and some crossed network boundaries by sharing classroom findings with their work or personal network connections outside the classroom as well as by bringing into the classroom outside resources. Overall factors that mediated participant engagement in the cMOOC include confidence, prior experience, and motivation. Significant learner autonomy may not be suited to everyone's learning preferences, and some may not be prepared to engage technology in a connectivist fashion due to a lack of literacy in these areas. Milligan et

al. posited that learners may not know how to effectively learn in a cMOOC. As such, learners may need a network mentor as espoused by one of their participants (p. 157).

Kop, Fournier, and Mak (2011) conducted a mixed methods study on networked learning in global MOOCs. The study incorporated four different surveys across 62, 31, 74, and 55 undefined participants. It was found that prior experience with MOOCs governed whether participants were participators (more experienced) or consumers (less experienced) (p. 88). Facilitators in networked learning must take on the roles of aggregator, curator, amplifier, modeler, and coach or mentor (p. 89). Kop et al. suggested that learners under a connectivist learning model must be encouraged to establish personal learning networks and become peer facilitators, mentors, coaches, and designers of new digital literacies (p. 89).

Kop (2011) reported on a mixed-methods study involving a MOOC and participants from various locations around the world. Kop raised three challenges to connectivist learning, namely learner autonomy, presence, and critical literacies, and questioned whether aggregating, relating, creating, and sharing were activities that had an impact on connectivist learning (p. 24). Kop found that the participants engaged in aggregating, relating, and sharing resources, but few created digital artifacts (p. 35). Kop found that learner autonomy, presence, and critical literacies were important facets of learning in connectivist environments. Learners must have confidence in online tool use, and must be willing to flex their collaborative and creative muscle as well as keep open mindsets (p. 34). Furthermore, social presence for all participants must be maintained to foster confidence and learner engagement. Kop also noted that learners need time to

adjust to connectivist learning and presents the creation of artifacts as an area for future study in terms of whether it is a necessary requirement of connectivist learning (p. 35).

The above studies examined alternative learning environments through a connectivist perspective. The participants were of adult age where specified, and were situated worldwide. Although insight about connectivism as a learning theory was provided, the insight was not applied to middle school students, or administrators and teachers. The research findings did not include insight about how the results could be applied to digital citizenship, global collaboration, and social media combined. My study addressed this gap in the research by combining those elements into a single coherent investigation.

Literature Review

The review of the literature focused on the following key themes selected for this study: digital citizenship and global collaborative projects, barriers to digital citizenship, digital citizenship and social media, and teachers' perceptions of integrating digital citizenship, social media, and global collaboration in the middle school curriculum. A gap was found in the literature on the combination of these themes associated with digital citizenship as no other study was found that combined these themes within a single research effort.

Digital Citizenship and Global Collaborative Projects

The first research asked "What are teachers' perceptions about middle school students' development as digital citizens when engaged in global collaborative projects?"

The literature review is organized by the following themes for RQ1: digital literacy, digital security, digital reputation, and cyberbullying.

Oxley (2010) cited three reasons why digital citizenship is important for young people: "their perceived anonymity….their accumulated digital portfolio or digital footprint….and the legal implications of thoughtless or malicious actions" (p. 2). Although those reasons are applicable to students of all ages within their own school system, global digital citizenship and collaboration create the need for a broader appreciation for digital citizenship when students are interacting cross-culturally. Dabner (2012) stated that

> the increased use of social media in our everyday lives has not only changed the
> way we form and maintain relationships, it has changed both the ways we respond
> to events and the places we do so. Web 2.0 tools, including social network sites,
> have the potential to benefit people at a personal, interpersonal and societal level.
> (p. 76)

Yet, social networking sites present a number of worrisome attributes that may not only affect students' class and community standing during their formative years, but also may impact them in the future (Cross-Tab Commission, 2010, p. 3; Hazari & Brown, 2013, p. 32). This is one reason lessons on digital citizenship are especially important for students who are growing up using social media technologies both in and out of the classroom. Furthermore, students' use of social media can affect their privacy, safety, and overall wellbeing as their use of social media has both local and global implications associated

with its use. A deeper investigation of digital literacy, digital security, digital reputation, and cyberbullying is considered next.

Digital Literacy

Digital literacy is one element of Ribble's digital citizen framework that deals with learning about and using technology (Ribble, 2009, p. 3; Ribble, 2011, p. 11; Ribble, 2012, p. 150). Highlighting the criticality of digital literacy for today's students, Ribble and Miller (2013) contended that "the current gap in technology knowledge and lack of leadership preparation related to digital literacy for school environments can cause serious problems, as school leaders, parents, and broader social communities are currently realizing" (p. 135). Simply knowing how to use technology outright is not enough as Burgess, Price, and Caverly (2012) posited that "one of the most important aspects of being digitally literate does not rely completely on the ability to use technology, rather on how a person is able to discern and critically analyze content in digital form" (p. 15). According to the Information Literacy Competency Standards for Higher Education (2000):

> Information literacy is related to information technology skills, but has broader implications for the individual, the educational system, and for society. Information technology skills enable an individual to use computers, software applications, databases, and other technologies to achieve a wide variety of academic, work-related, and personal goals. Information literate individuals necessarily develop some technology skills...Information literacy, while showing significant overlap with information technology skills, is a distinct and broader

area of competence. Increasingly, information technology skills are interwoven

with, and support, information literacy. (p. 3)

Learning how to use technology in a socially collaborative and productive manner is one

important aim of digital literacy given its impact that spans various areas of students'

lives now and to come.

Student digital literacy: Educational and personal technology use. Although

students might use digital tools outside of school for entertainment and leisure activities,

knowing how to use the same tools in educational settings for learning should not be

assumed by teachers (Guo & Stevens, 2011). In a single case study involving 15 students

in grades 10 through 12 who took part in a *networked student model* learning

environment to promote personal learning and networked learning (pp. 370, 374), Drexler

(2010) found that students' "comfort with technology, motivation, and self direction"

were important aspects of the networked learning environment such that transitioning

students from passive to active learners may need support from teachers as learning to

use familiar technology in new educational ways may not be easy for students (p. 382).

Digital literacy education may help students transition their personal use of social media

tools to educational settings, and may help students use social media in business settings

as social media is used in many industry sectors (Barczyk & Duncan, 2012). Poellhuber

and Anderson (2011) suggested that younger students might be biased in their personal

use of social media tools in a way that prevents them from considering the tools as useful

in formal educational contexts (p. 117).

In contrast, using a comparative case study design, Callaghan and Bower (2012) observed and surveyed 48 high school students spanning two classes on their use of social networking sites (p. 1). It was found that "students appeared to be able to effortlessly transfer their skills of using social media personally into an educational context," and that the differences in academic outcomes between the two classes did not appear to be related to the technology used (p. 15). Callaghan and Bower suggested that the manner in which social media technologies are incorporated into educational settings along with the classroom climate seems to have a greater influence on student achievement than prior technology use (p. 16). Jun and Pow (2011) conducted a single case study involving 42 students aged 14 to 15 in a Hong Kong secondary school on fostering digital literacy using a Web-based collaborative inquiry learning (WICL) project (p. 57). The study revealed that students' online communication skills remained unaffected by students' participating in the WICL, and suggested this was possibly due to students' familiarity with tools such as MSN, email, Facebook, and weblogs when used to communicate with friends (p. 64).

The literature revealed opposing perspectives on students transferring personal use of technology to educational use of technology. That students' online communication skills were unaffected by their participation in the WICL does not indicate whether students' educational use of technology yielded positive or negative results. Jun and Pow did not specify whether students were communicating online to support education and learning or whether students communicated online in the same manner they would if communicating in a personal setting outside of school. How the

research findings relate to the portability of personal uses of technology to educational use for middle school students remains unclear.

Student digital literacy: Expanding students' understanding. The literature revealed four examples of initiatives designed to improve K-12 students' digital literacy. Jun and Pow (2011) found positive student digital literacy outcomes associated with their Hong Kong 42 middle school students who participated in a Web-based collaborative inquiry learning (WICL) project (p. 57). The WICL activities were primarily housed in a blog (p. 59) and proved beneficial to students' digital literacy skills as students' abilities to search for information, judge information, and analyze and synthesize information improved (p. 63). Students' ability to create multimedia artifacts as well as students' awareness, attitude, and ability to use technology in educational settings improved (p. 64). Jun and Pow also noted that students' were more enthusiastic about using technology in an inquiry learning format given their freedom to use whatever type of technology they preferred (p. 65). Additional digital literacy concepts were strengthened such as digital etiquette, copyright, considering others (pp. 64-65) as were "collaborative ability, interpersonal skills, ability to adapt, judgment, and the courage to carry out interviews and surveys with strangers" (p. 67). How Jun and Pow's study involved a sample of students from a single class from within a single school in Hong Kong. How their findings relate to global collaborative learning engagements that use various types of social media remains unclear.

Drexler (2010) conducted a case study involving 15 students in grades 10 through 12 (pp. 370, 374) who were administered an open ended survey designed to gather

students' perceptions of their networked and personal learning experience (p. 375).

Drexler noted that few students were familiar with using online tools in learning settings, and no students had experience participating in a networked learning environment (p. 376). Digital literacy skills were addressed, and ten students responded positively, three students responded negatively, and two students responded in a neutral fashion in response to using technology in an educational setting (p. 380). By using Moodle, blogs, RSS, social bookmarking, podcasts, video conferencing, digital notebooks, and content synthesis tools (p. 377), tools Drexler reported that students' overall digital literacy skills improved and students reported having greater confidence in using technology in educational settings despite students' concerns about time management (p. 381). Drexler offered hope where networked learning is concerned such that "social networking and sharing of personal learning environments between students holds further promise as more students participate in networked learning and post their results in an open forum" (p. 383). Based on Drexler's findings, it appears that the design of the learning experience, such as when technology is used to facilitate networked learning, can help students grow their digital literacy skills. However, Drexler's one case study design does not provide insight about how the study might apply to middle school students or in cases where global collaborative learning is the setting.

The implementation of new hardware and software can increase students' digital literacy (Chou et al., 2012). They conducted an exploratory case study on the implementation of iPads in four 9th grade classrooms involving four teachers and 31 students (p. 17). The implementation of the iPad as mobile learning devices had a

positive impact on student learning as iPads increased students' information literacy skills such as searching for information, and students' awareness of digital citizenship (p. 20). Students became more aware of data privacy issues, assisted each other with error resolution, and teachers noted decreased levels of plagiarism (p. 20). Challenges were identified as finding appropriate apps for educational use, student distractions in terms of "irrelevant apps and Websites," and time needed for preparation (p. 21). Although hardware and software technology may be beneficial to students learning about digital literacy, whether the study conducted by Chou et al. applies to globally collaborative settings remains unclear. Additionally, the study does not include specific social media or collaborative learning tools that were deemed beneficial to students' growth in terms of digital literacy.

Ertl and Helling (2011) took a different approach to understanding students' digital literacy competencies. The researchers conducted a mixed methods study involving 90 Bavarian middle school students whose average age was 18 years on the influence of gender on students' command of digital literacy skills (p. 479, 481). Ertl and Helling found that boys were more interested in digital literacy associated with hardware and programming than were girls (p. 486). Regarding standard software and the Internet, girls were more interested in those areas of digital literacy than boys (p. 486). Boys tended to use technology for entertainment purposes whereas girls tended to use technology for "creative, social, or learning goal[s]" (p. 486). Ertl and Helling posited that girls may perceive themselves as being less digitally literate compared to boys when considering students' prior experience and stereotypes (p. 492). The concept of "gender

re-scripting" was suggested as a means to promote gender equality when considering digital literacy so that all students can learn in a personalized context that does not subsume gender influence and stereotyping (p. 496). Gender re-scripting would assist others with learning about topics that would be preferred by the gender opposite of the learner's gender. Based on Ertl and Helling's study, gender plays a role in students' perceptions of and skills associated with digital literacy. However, whether gender influences students' perceptions of and skills associated with digital literacy in a global collaborative setting in which social media is used to facilitate networked collaboration and learning remains unclear.

Based on a review of the literature students can benefit from various uses of technologies and educational processes to support and enhance students' digital literacy. The studies included in this section did not address global collaborative learning (Chou et al., 2012; Drexler, 2010; Ertl & Helling, 2011; Jun & Pow, 2011), did not apply to middle school students (Drexler, 2010), and in some cases the research was not based on the use of social media to support global collaborative learning (Chou et al., 2012). Gender was found to influence students' command of digital literacy concepts, but was not framed within a global collaborative perspective (Ertl & Helling, 2011). Some students may innately port their existing use of technology to educational settings (Callaghan & Bower, 2012) whereas other students may have difficulty doing so (Drexler, 2010; Guo & Stevens, 2011; Poellhuber & Anderson, 2011). Clarity on how social media can be leveraged in global collaborative learning engagements to support and enhance middle school students' digital literacy and digital citizenship is missing in the literature. What

is clear is that middle school students' have benefited from studies designed to promote digital literacy for middle school and high school students. Jun and Pow (2011) contended that "It is apparent that children need to develop a new kind of literacy to enable them to function effectively in the digital era" (p. 58). How this applies to middle school students is the focus of my study.

Without investigating options for using various electronic tools and making evaluations about when to use a specific tool, students may find themselves at a disadvantage as digital citizens. When considering using social media on a global scale for educational collaboration, students may need additional guidance on how to use such tools for learning in both local and global settings. Research was not found on the application of middle school student digital literacy and using social media in a globally collaborative education setting. Ribble's digital citizenship framework could be used to address what types of guidance students need when collaborating with other students using social media in a global educational setting as Ribble (2012) noted that "more than any time in history, students need to become global citizens, and the use of technology provides a conduit for those connections" (Ribble, 2012, p. 151).

Digital literacy and university students. The need for digital literacy is also found in the literature associated with higher education settings. Alvarez (2013) conducted a qualitative study involving a questionnaire that was administered to 16 teachers and 128 university students majoring in dance studies on the use of open educational resources (OERs) (p. 4). Prior to the implementation of the project Alvarez found that no Web 2.0 tools were used in the Dance Department at the University of

Surrey (p. 5). The implementation of OERs transformed old paper-based educational experiences to experiences that were rooted in digital technologies that helped students become producers of digital artifacts that served as a bridge between educational and professional interests (pp. 13-14). Alvarez highlighted the need to address digital literacy with instruction on the use of technology for both teachers and students as using new technology in educational settings can affect students' and teachers' attitudes and behavior as they take on new roles associated with using technology in educational settings (pp. 7-8).

Shen, Cheung, and Lee (2013) conducted a quantitative study where 132 Hong Kong university students were surveyed on their use of Wikipedia for educational purposes (p. 508). It was found that "information usefulness did not exert a direct statistically significant effect on information adoption" (p. 512). Information completeness and format were statistically significant predictors of information usefulness whereas information accuracy and currency were not (p. 512). Accuracy of information was often overlooked by students and Shen et al. advocated for additional training in this area (p. 514). Additionally Shen et al. posited that "students may be unable to judge the accuracy of the information from Wikipedia and be more inclined to adopt information without cautious confirmation" (p. 513). Source credibility was found to be "the most important predictor influencing information usefulness," but in the case of Wikipedia, the use of the Website as a credible source could be artificially imposed because of students' familiarity and frequent visits to the site for academic purposes (p. 513-514). Shen et al. suggested that "digital literacy education will connect learning with

real life, encourage students to effectively find and critically evaluate information while using digital technologies, increase students' ability to create and communicate their ideas and help them to be wise consumers in the digital age" (p. 514). The findings of this research study indicated that education about digital literacy is needed for university students so that students are able to identify accurate sources of information online.

Kennedy et al. (2008) conducted a quantitative study involving 2120 first year University of Melbourne students on their use of technology, the degree to which they could be described as digital natives (p. 111), and the degree to which, as digital natives, they preferred to use technology in educational settings based on their use of the same technology in their everyday lives (pp. 110-111). Kennedy et al. (2008) found that "while some students have embraced the technologies and tools of the 'Net Generation', [sic] this is by no means the universal student experience. When one moves beyond entrenched technologies and tools (e.g. computers, mobile phones, email), the patterns of access to, use of and preference for a range of other technologies show considerable variation" (p. 117). Kennedy et al. (2008) noted that "clearly we cannot assume that being a member of the 'Net Generation' is synonymous with knowing how to employ technology based tools strategically to optimize (sic) learning experiences in university settings" (pp. 117-118). Based on those findings, being a digital native does not mean that university students are able to transfer their common use of technology in their everyday lives to educational uses of the same technology.

In a qualitative case study involving five dyslexic students from a school that provides transitional educational pathways for entry into college settings in north-west

England, Barden (2012) found that Facebook had a positive impact on students' learning. Barden (2014) suggested that "much 'everyday' digital technology offers ample opportunity for students to circumvent many of the learning and literacy problems associated with dyslexia" (p. 4). Barden (2012) noted that Facebook was used by the students in their everyday lives (p. 123), and in educational settings students used Facebook "as a catalyst, the participants had rich discussions about their learning" (p. 129). Facebook promoted student identity awareness and a positive identity shift with respect to their dyslexic tendencies (p. 130). Barden suggested that at least one participant took on new roles as scientist-researcher; which had a positive impact on students' self-esteem and "students' perceptions on their ability to successfully participate in a learning community" (p. 130). Barden's study showed that social media can help dyslexic students take on new roles and overcome learning difficulties they had in the past. Whether the same holds true for dyslexic middle school students remains unclear. Teachers may also need guidance on using social media with students needing accommodations. New uses of technology may require new insights in digital literacy education for both students and teachers. How such insights can be applied to global collaborative learning projects undergirded by social media communications remains unanswered in the literature.

Margaryan, Littlejohn, and Vojt (2011) conducted an exploratory mixed methods study involving 160 juniors at two universities in the UK on students' use of technology in formal learning and informal socialization settings (p. 432). The participants were divided into two groups including social work students and engineering students and

thereafter characterized as digital natives or digital immigrants (p. 432). Students who were digital natives and engineering students used technology more frequently for formal and informal learning than did students who were digital immigrants and social work students (p. 435). Milligan et al. (2013) found that students were unfamiliar with using technology to support learning and were used to "conventional approaches to teaching" (p. 436) where "students passively consume information" (p. 438). The authors noted that "our findings suggest a deficit of learning literacies and a dependency on guidance from lecturers amongst students," and clarified that "students do not appear to have a frame of reference of leading edge approaches to technology-enhanced learning to benchmark their current learning experiences against" (p. 438). The research by Milligan et al. indicated that the university students in their study were not familiar with using technology in educational settings. This suggests that students in K-12 settings are not being afforded opportunities to transfer their personal use of technology to educational settings. It is unclear how this applies to middle school students who may be collaborating on a global scale using social media.

Bhatt (2012) conducted an ethnographic case study using a semi-structured interview involving one university student in higher education in the UK on personal digital literacy practices and how the student related to educational uses (pp. 292-293). The sole participant in the study engaged in social networking in her personal or home life, in college, and at work (p. 295). Bhatt found that the participant did not need to cross a "border" with respect to using her digital literacy skills across varied domains as the participant's digital literacy skills converged in educational settings confidently (p.

296). Bhatt noted that this may not be the same outcome for all students as their digital

literacy skills may not transfer from personal to educational settings with the same ease

as did the participant's skills in this particular study (p. 296). Bhatt advised practitioners

to recognize this fact and to encourage students to bring into educational settings their

personal digital literacies and experiences as they can be used as resources to support

learning (p. 298). Bhatt's findings do not echo the overarching results in the literature as

most studies revealed that students had difficulty using familiar technology for

educational purposes. Bhatt's findings suggest that some students may have the ability to

put to use in educational settings their personal use of technology, but the characteristics

that facilitate this happening are missing from his study and from the literature in general.

How this phenomenon applies to middle school students and the frequency with which

students may be able to use technology for educational and everyday life purposes in a

seamless manner remains unclear.

Digital literacy: Teacher professional development needed. Digital literacy is

a concern for educators as in addition to students, and eight applicable studies were found

that address preservice teachers, teachers, and digital literacy. In a survey of 318

preservice teachers on their knowledge about and ability to teach cyber ethics, cyber

safety, and cyber security, Pusey and Sadera (2012) found that preservice teachers were

lacking in competency about teaching students how to use social media technologies.

Pusey and Sadera found that although being digital natives the participants were unable

to teach anything more than 4% of the 75 topics surveyed (p. 87). Participants indicated

they were uninformed about the threats students encounter outside of the school, and

were unable to identify risks in "digital environments that can indicate threats to themselves, their students, and the environments where they work and learn" (p. 87). If preservice teachers do not have the ability to provide instruction on and model digital citizenship roles due to a lack of knowledge about the technology involved, schools face a challenge in helping students to assume the role of model digital citizens.

The manner in which teachers express themselves regarding technologies associated with digital citizenship is also important. Guo and Stevens (2011) found that positive teacher attitudes towards social media technologies can have a positive impact on students' use of social media, and some cases of prior use of technologies had a negative impact on students' use of social media. Guo and Stevens suggested that teachers receive training on digital citizenship and associated technologies such as social media, so that they can create a positive atmosphere for students learning about digital citizenship. In a case study involving 185 prospective teachers Sincar (2013) found that inappropriate behavior was exhibited by prospective teachers and more frequently by male prospective teachers when using social media and digital devices than women. Likewise, compulsion, absent-mindedness, and indifference were cited as root causes of the inappropriate behavior. Sincar suggested that the research findings indicated that prospective teachers do not yet possess a command of digital etiquette norms, which places them in a precarious position if they are to teach students the tenants of digital citizenship and serve as role models for the same (p. 10). Furthermore, as teachers have been tasked with modeling appropriate digital citizenship behavior, more work needs to

be done to ensure teachers are prepared to positively influence student behavior (p. 3, 10).

Chik (2011) conducted a mixed methods study involving 34 Hong Kong English teachers on their perceptions, attitudes, and experiences associated with using digital gaming and social networking sites within a multi-literacies framework for pedagogical use in educational settings (pp. 154-156). Teachers' experiences with social networking sites and digital gaming were lacking, and teachers did not recognize the potential value of social networking sites and digital gaming in educational settings (p. 157). Chik cited "a lack of computer literacy" along with "curricular restrictions" as the most common reasons cited by the participants for not using technologies of this nature in their classrooms. Participants' lack of experience with gaming equated to a lack of ability to judge whether games could be used for pedagogical purposes (p. 163). Due to teachers rejecting using social media sites and gaming because of their "strong moral stance" on those technologies perceived as dangerous, they failed to see any potential educational benefit of those technologies (p. 163). Chik concluded that educators' "lived experience alone was not adequate for translating personal experience to classroom application" (p. 164). Chik called for additional professional development "to include and legitimize youth digital practices is perhaps where our future lies if we are to achieve positive participatory language learning both in and out of language classrooms" (p. 164). Teachers' overarching perceptions of digital literacy associated with social media sites and gaming for learning remained essentially unexplored due to teachers' moral stance on the technologies (p. 163). Chik's study demonstrated that a shift in mindset is needed for

some teachers who might otherwise completely ignore new educational uses for technology.

Rosaen and Terpstra (2012) conducted a qualitative study involving 97 preservice teachers seeking elementary teacher certification (p. 39). The study included a pilot of The New Literacies Project where preservice teachers collaborated with each other about learning about new literacies and integrating new literacies into their pedagogy (p. 40). Rosaen and Terpstra's (2012) indicated that "although most candidates could talk about what K-6 students would need to know and be able to do, less than half developed lesson plans that integrated new literacies with the new technology" (p. 41). Some lesson plans focused solely on technology in a basic sense (p. 41). Rosaen and Terpstra (2012) found that their participants' "comments show a growing awareness that there are multiple ways to integrate literacies and technology, a digital literacy" (p. 43). This finding seems to support the premise of student centered learning where students could tailor the use of technologies to support their individual educational interests (Bhattacharya, 2011). The researchers' findings indicate a continuing need for digital literacy professional development opportunities so that educators can assist students with their own digital literacy needs.

Digital literacy: Teacher positive outcomes. The literature revealed some positive social change where digital literacy and education is concerned. In a qualitative study involving 17 prospective teachers' digital citizenship behavior norms, Sincar (2011) found that the participants exhibited behavior norms associated with digital communication and digital literacy whereas the participants were deficient in their

behavior norms associated with the remaining nine elements including "digital access, digital etiquette, digital commerce, digital rights and responsibilities, digital law, digital health and wellness, and digital security" (p. 25). This finding indicated that some preservice teachers may be prepared to educate students on digital literacy and communication. However, most preservice teachers in Sincar's study were are not apprised of many of Ribble's digital citizenship framework elements in their preparations for becoming teachers. Sincar found that prospective teachers did not have good manners or sensibility in the use of digital technologies where digital etiquette is concerned (p. 225).

Nelson, Courier, and Joseph (2011) surveyed 82 faculty, department chairs, and associate deans about their perceptions of their students' digital literacy needs across the colleges of arts and letters; natural and health sciences; business; and social sciences, mathematics, and education (p. 98). Although some variations on perceived digital literacy needs across the colleges were observed, several needs were commonly ranked more highly than others by all colleges. The most important digital literacy needs were perceived as information research and retrieval, information validation, social responsibility, information communication, legal aspects of digital information, data transmission, using applications, and learning resources (p. 101). Concepts such as plagiarism and intellectual property laws were also highlighted by faculty as digital literacy concepts that should be investigated more deeply, and that "digital literacy education needs to occur across the curriculum and must be broader than the current one-credit-hour course focused on computer literacy" (p. 103). Given the findings of Nelson

et al. several deficiencies associated with students' digital literacy competence were identified and improvements were made in some areas.

Several authors included insight about the need for digital literacy at a societal level. Rosaen and Terpstra (2012) urged "in the rationale for the project posted on the wiki, we argued both for acknowledging technology as a literacy and for the need to think of the meaning of literacy as changing continually in relation to societal changes" and to "promote social interaction and learning from others' projects" (pp. 44-46). This perspective relates to Ribble's (2008) thoughts on digital citizenship applying not only to students and teachers but to society overall as educators respond to the shifting dynamics of technology use outside of the classroom (p. 5). In the Information Literacy Competency Standards for Higher Education (2000) it is noted that information literacy has a potential impact on society (p. 3), and Dabner (2012) acknowledged the potential positive impact of social networking sites and other Web 2.0 tools on society (p. 76). As such, the need for digital literacy education is defined in the literature as us the need for teachers, students, and other stakeholders to take seriously the topic of digital literacy. Although some positive research findings are present as in the case of Sincar (2011), this currently appears to be the exception where digital literacy is concerned. The overarching theme, as indicated by Sincar's two research studies based on Ribble's nine elements of digital citizenship, is that prospective teachers are not prepared to model appropriate and responsible digital citizenship behavior, especially where digital literacy is concerned. Chik (2011), Guo and Stevens (2011), and Sincar (2011), suggested that digital citizenship training for prospective teachers is necessary in some cases. In some

cases teachers may need to adopt a new perspective or mindset to be able to facilitate instruction and role modeling for students. For example, Jun and Pow (2011) found that teachers were perceived by students as "over-involved" in their WICL implementation and suggested that teachers' roles will need to change to support online collaborative inquiry learning among students (p. 67). Drexler also noted concerns for teachers as "adopting a networked learning approach would require consider teacher professional development and a philosophy different from that of most current educators" (p. 382). Neary (2009) argued that for university students there is a need "to reinvent the relationship between teacher and student, so that the student is not simply consuming knowledge that is transmitted to them but becomes actively engaged in the production of knowledge with academic content and value" (p. 8). Nelson et al. (2011) posited that "a focus on the appropriate application of skills (digital competence), i.e. situational embedding, as opposed to just a mastery of skills is crucial" (p. 104). Associating technical and digital literacy skills to real life situations may be required and may prove difficult for some teachers. Knowing simply how to use technology has been cited as a less than appropriate end goal (Burgess et al., 2012). Nelson et al. (2011) posited that

> the present study was motivated by concerns about the current computer literacy course which focused on software applications, and the need to ensure that our graduates develop the capabilities and skills necessary to operate effectively in the digital society. Prior research shows that today's students live and breathe technology, but are far from being digitally literate. (p. 104)

Drexler (2010) noted that "the teacher is necessary to help the students navigate the breadth of content, apply the tools properly, and offer support in the form of digital literacy skills and subject matter expertise" (p. 369). Such claims may be a concern as it is demonstrated in the literature that teachers are unfamiliar with digital literacy and are unable to demonstrate competence in this area of digital citizenship. Professional development opportunities may be warranted for prospective and seasoned teachers alike.

It remains to be seen in the literature whether middle school teachers have the same or similar digital literacy competency concerns as do preservice teachers and faculty in higher education. The literature does not provide details on middle school teachers' understanding of digital citizenship as applied to global collaboration using social media in a global educational setting, whether middle school teachers have a command of digital literacy, and how middle school teachers' deficiencies in digital literacy if present may affect their ability to provide instruction on digital citizenship. This study investigated this gap in the literature to derive middle school teachers' perceptions on global collaboration, digital citizenship, and social networking and teachers' perceived needs to effectively learn about and teach students about digital literacy and digital citizenship.

Digital literacy: Barriers. Several studies revealed barriers to students' and teachers' digital literacy competencies. Alvarez (2013) cited a "lack of awareness of adequate copyright practices, and of online help" as concerns and potential barriers related to digital literacy (p. 10). Alvarez (2013) cited several barriers to using Web 2.0 and social media in educational contexts among students:

lack of knowledge and familiarity with some software and tools, getting used to

the new VLE, feeling 'safer' to continue working with print and paper-based

resources and assignments, irrelevance of technology use to their dance learning,

fear (in collaborative tasks) of modifying contributions from others, difficulties

accessing equipment, getting connected and accessing some external sites which

needed a new account creating or signing in…students also reported lack of time,

extra effort and work, as well as low involvement of the other peers as reasons for

not engaging with the learning opportunities offered by this project. (p. 7)

Stereotypes may also serve as barriers when educators and other stakeholders assume too

much as Burgess et al. (2012) posited that students "should not be assumed to have

digital literacy skills simply because they have been termed a 'digitally literate

generation'" (p. 13). Burgess et al. also hinted at knowing how to use technology is not

simply enough in terms of digital literacy as they posited that "One of the most important

aspects of being digitally literate does not rely completely on the ability to use

technology, rather on how a person is able to discern and critically analyze content in

digital form" (p. 15). Barriers associated with Jun and Pow's (2011) WICL project

included insufficient digital literacy knowledge, insufficient collaborative learning skills,

and insufficient inquiry skills (p. 69). Milligan et al. (2013) identified barriers to using

technology in educational settings were noted as a lack of "digital skills, reluctance to

change, and systematic problems such as lack of time and infrastructure issues" (p. 437).

Rosaen and Terpstra (2012) observed in one of their participants that "like Marcy,

Marilyn emphasized her new realization about how changes in society affect the

changing nature of literacy" (p. 42). Without such realizations, expanding mindsets, and shifts in perspectives, individuals' static outlooks and unwavering attachments to prior experiences may serve as barriers. Without a societal perspective that is global in nature, individuals may not realize the greater affect they can have on society in sum by way of digital literacy.

Whether such barriers apply to middle school teachers and students remains unclear. The literature does not provide illumination on whether the same barriers apply to middle school teachers and students who are collaborating globally using social media with the goal of enhancing students' knowledge about and taking on the roles associated with digital citizenship. I explored those questions by interviewing teachers about their perceptions on integrating global collaboration, social media, and digital citizenship into the middle school curriculum.

Digital Security

Ribble's digital citizenship framework element *digital security* is perhaps the most popularized digital citizenship umbrella topic within the research literature. Social media is popular in students' lives both in and out of school, and has the potential to record and reveal personal data to others on a global scale (Hazari & Brown, 2013). In an educational context it is appropriate for students to present themselves in a manner that is professional and reflective of their school's behavioral norms at a minimum. Students may use social media in potentially negative or dangerous ways without being aware of the harmful outcomes that may materialize due to such use (Ribble, 2011). Ribble and Bailey (2006) pointed to news coverage about how students are misusing and

abusing technologies and each other (p. 1). Students' digital privacy may be eroded due to misuse of social media. Due to the permanence of students' digital footprints, such footprints may eventually cause them harm. Cyberbullying is another digital security concern found in the literature and has the potential to affect students in extreme ways.

Digital security: Privacy and teen-aged students. Digital security includes a variety of concerns associated with the use of online social media sites, and Chou et al. (2012) contended that "advocating good digital citizenship is essential to ensure content privacy and ethical behaviors" (p. 14). Digital privacy is but one aspect that garners frequent attention in the literature. Hazari and Brown (2013) warned that

> Privacy on social networking sites is different from privacy when browsing the web because social networking sites have identity as well as demographic information that can be associated with users when they are logged in and browse for products and services displayed on social networking sites. (p. 32)

Such data can be recorded by other parties and used for unexpected purposes leading to privacy invasion and identity theft (pp. 32-33). Social networking sites showcase "individual's attitudes and opinions over a range of personal and professional topics" (p. 32). Such personal accumulation of data online lends to the formation of online identities and personalities that can be used for or against individuals. The aggregation of such data creates an ever-growing digital footprint. Although the use of social networking sites can help students connect to others as well as collaborate, the literature points to negative consequences of online use of social networking sites.

Christofides, Muise, and Desmarais (2012) surveyed 256 students in grades 7 through 12 aged 12-18 on their perceptions on disclosure, privacy, and bad experiences on Facebook (pp. 719-720). Based on the participants' feedback, 26.7% (p. 721) of participants "had a bad experience on Facebook" (p. 725) that spanned the categories: "bullying/meanness…(52%)", "unwanted contact…(23%)," "exposure/unintentional disclosure…(17%)," and "misunderstandings…(7%)" (pp. 722-724). Christofides et al. found that "…having a bad experience predicts precautionary behaviors against future bad experiences. Specifically, participants who had a negative experience on *Facebook* were more likely to know about and use the privacy settings" (p. 726). The researchers also noted that bad experiences on Facebook may also arise from misunderstandings that arise due to a lack of context on Facebook, and that users who lie about their age may bypass age-related safety measures implemented by Facebook (p. 727). Although informative, the results from this study do not necessarily relate to educational uses of Facebook and were not borne of globally collaborative educational efforts.

Concern is found in the literature about the type of information students are placing online about themselves, whether teens are aware of privacy concerns associated with online social networking sites, and the type of strategies students are using to manage their online privacy. Oolo and Siibak (2013) interviewed 15 students ages 13 through 16 on their privacy strategies employed on online social networks (p. 4). An interest in privacy was shown by participants, but not all participants used privacy settings provided by social media sites (p. 6). The two overarching privacy strategies used by participants included self-censorship whereas others used "hidden messages" or

social stenography, such as song lyrics, to convey meaning to others (pp. 7, 9).

Christofides, et al. found that "…participants who had a negative experience on Facebook were more likely to know about and use the privacy settings" (p. 726).

In contrast, Davis and James (2013) conducted a study of online privacy where 42 students aged 10 through 14 years were interviewed (p. 9), and found that for some platforms online 20% of students' privacy strategies were missing and 11.9% of students overlooked the available privacy settings entirely (p. 17). Supporting that finding, Assumpcao and Sleiman (2011) reported research findings on a longitudinal case study on Internet safety and practices using an Ethics and Digital Citizenship course. The study began in 2008, and included grades 6, 7, and 10, but was later revised to include grades 6-12. Assumpcao and Sleiman found that students did not take security precautions for themselves or others, nor did they practice good online etiquette when communicating online. With respect to security strategies utilized by teens, Davis and James (2013) found that 95% of their participants used withholding strategies where incomplete information was provided to others whereas 90% of their participants engaged in proactive strategies such as managing online privacy settings or providing deceptive or false information (p. 16). Regarding participants' perceived audience, Oolo and Siibak (2013) found that students administered self-censorship depending on the perceived audience (p. 6), and the authors found that students were quite uncertain "about the size of their Facebook audience" (p. 5).

Contrasting findings are found in the literature about students' perceptions of online privacy and social networking sites. Students in middle and high school were

uncertain about digital privacy settings when using online social networking sites (Davis & James, 2013), were uncertain about their audience (Oolo & Siibak, 2013), and assumed different roles depending on their perceived audience in some cases (Davis & James, 2013). Some of those concerns may arise due to the misuse of technology such as not using the privacy settings offered by social networking sites. Students may inadvertently open themselves to attack by others without proper knowledge about how to use technology to increase their safety online. Learning by experience in such cases may come at the cost of invasion of privacy or worse.

Ribble's (2011) nine elements of digital citizenship guide students on their online collaboration with others by helping students avoid misusing technology. Ribble believes that instruction on these nine elements may help students make appropriate decisions about digital privacy before a bad experience materializes. Research was not found assessing online privacy safety for students engaging in global collaborative learning endeavors, nor does the literature provide insight into middle school students' perceptions of online privacy, social media, and global collaboration combined.

Findings in the literature do not indicate if and how online privacy concerns affect middle school students' willingness to collaborate with others from outside their locale, especially if engaging in multi country learning endeavors when using social media technologies. The literature is also void of research studies associated with middle school students' perceptions of online privacy as a facet of digital citizenship and global collaborative projects. Teachers' perceptions on the same topics are likewise absent. My study addressed this gap by studying digital citizenship through a connectivist lens and

by incorporating feedback from teachers on their perceptions of their students'

development as digital citizens through global collaboration and social media.

Digital security: Privacy and college students. College students' use of social

media and their perceptions of online digital privacy have been researched. Hazari and

Brown (2013) surveyed 157 college students on their perceptions of privacy on social

networking sites (pp. 39-41). They found that age and gender did not significantly

influence privacy awareness scores and knowledge scores (p. 42). Employment status

did not significantly influence privacy awareness scores but employment status did

significantly influence privacy knowledge scores (p. 42). Hazari and Brown found a

relationship between employment status and privacy associated with the use of social

networking sites in workplace settings. Hazari and Brown suggested that workplace

training and policies such as acceptable use policies could result in more informed

employees where social media is concerned (p. 45). Hazari and Brown also noted that

"The results of this study show that individuals are concerned about their privacy, and

would like to control their digital reputation as it can directly impact long term business

relationships or employment prospects" (p. 46). The importance of understanding and

using social media properly in industrial settings cannot be taken lightly. Middle school

students may benefit from knowing how social media may be tied to future employment

arrangements in that it could be a part of their job in terms of maintaining proper security

for businesses that use of social media. This knowledge could help students take more

seriously their use of online security settings associated with social networking sites.

Private data and self-disclosure on social media sites was researched by Jin (2013) who surveyed 375 college students enrolled in a U.S. university on their Twitter usage and self-disclosure (p. 820). The results indicated that participants' private disclosure on Twitter was stratified across five components/layers: "(1) daily lives and entertainment; (2) social identity; (3) competence; (4) SES; and (5) health" (p. 826). As the numbers increased from one through five, the degree of self-disclosure weakened and information disclosed transformed from public image data that was revealed more frequently to private self-data that was revealed less frequently (p. 827). In the case of personality traits, extraversion was found to be negatively associated with "guarded self-disclosure, relational privacy preference, and virtual identity discrepancy" (p. 825); and extraversion was found to be "positively correlated with the multiple layers of self-disclosure" (p. 829). As such, extraverted users of Twitter more frequently shared information across the five disclosure layers than introverts.

Shafie et al. (2011) surveyed 164 university students ages 18 through 25 (p. 157) on privacy and trust associated with social networking sites and found that participants in their study were generally "concerned about privacy," but may dismiss or "trade their privacy for something beneficial" (p. 161). Students' knowledge about how to use digital security to protect themselves and others was lacking. A security tradeoff may at first seem unimportant but may have significant negative consequences later.

Barczyk and Duncan (2012) raised the issue of contamination of online reputation by others who are able to post to social media accounts belonging to friends (pp. 105-106). When individuals are not in full control of their online social media accounts due

to ignorance or ambivalence, the input from others can threaten the account holder's online reputation. This points to the need to educate citizens of all ages about the ethical use of social media, and that social media has the potential to impact the lives of individuals in novel ways. When applying this notion to students in grades K-12, their digital footprints may have been established at a young age. Given the permanence of digital information, students' actions online may be a concern much later in life. Educating students of all ages about digital citizenship may help them avoid online social embarrassment.

Online privacy associated with using social networking sites "affects every user who exchanges information over the Internet" (Hazari & Brown, 2013, p. 31). Students entering into college may not have had exposure to online privacy and how it should be managed when using social networking sites online. Ribble's nine elements of digital citizenship could be used to help students learn about online privacy. Personality traits could be identified and associated with Ribble's digital citizenship framework to help students learn about themselves in addition to learning how to be model digital citizens. Furthermore, if middle school students are made aware of these potential difficulties associated with self-disclosure and social media use, they may learn to pay more attention to the types of information they disclose online as they mature. The literature provides little evidence that middle school students are presented with such data in support of students becoming model digital citizens. Furthermore, the literature does not indicate whether middle school students are being presented long-term directions about online

privacy, social networking site use, and the potential consequences associated with those themes from a global collaborative educational perspective.

Digital security: Privacy and prospective teachers. Where available, details associated with prospective teachers' use of social networking sites, global collaboration, and digital citizenship are included. In a mixed methods study that included 185 prospective teachers (p. 1), Sincar (2011) found that prospective teachers did not model personal information security or device security where digital security was concerned. The participants noted they dismissed digital security concerns and shared passwords on social media sites. They also did not privatize personal information on social media sites as they felt there was no risk in keeping that content public (p. 231).

The research was situated in Turkey (Sincar, 2011), and the differences in culture could be an indicator of whether the participants were educated on the topic of digital security. These findings might be transferable to students in more developed nations and with greater knowledge about digital security to adopt a more comprehensive conceptualization of digital security and more approach to their implementation of online security. Sincar does not indicate how the cultural differences or how teachers' and students' perceptions of digital security might influence students from other cultures and countries when engaging in online collaboration using social networking sites. How this phenomenon might be managed to foster digital citizenship is not found in the literature.

Pusey and Sadera (2012) surveyed 318 preservice teachers on their knowledge about and ability to teach cyber ethics, cyber safety, and cyber security, or C3, and found that their participants were unable to teach anything more than 4% of the 75 topics

surveyed (p. 87). Additionally, the participants indicated they were uninformed about the threats students encounter outside of the school as well as were unable to identify risks "in digital environments that can indicate threats to themselves, their students, and the environments where they work and learn" (p. 87). As a result, Pusey and Sadera posited that "teacher preparation programs must address this knowledge deficit so that our future teacher population can model and teach this content to K–12 students and integrate C3 throughout the curriculum" (p. 87). Considering that cyber ethics, cyber safety, and cyber security are included within Ribble's (2011) digital citizenship framework, Pusey and Sadera's findings align with Ribble's call for digital citizenship training such that educating teachers about digital citizenship is a necessary first step if teachers are to model appropriate digital citizenship behavior for their students as well as teach digital citizenship concepts to their students.

Digital security: Privacy and general Internet users. Online privacy studies were found involving general Internet users. Cho, Rivera- Sánchez, and Lim (2009) surveyed 1261 Internet users in a multinational study on online privacy (p. 395). The average age was 32.6 years old, and the authors found that "…older, female internet users were more concerned about online privacy than their younger, male counterparts. Internet users with a higher educational background also tended to be more concerned about online privacy, although the relationship was only marginally significant" (p. 405). Cultures favoring individuality showed greater concern for online privacy (p. 407). Through a factor analysis, Cho et al. discovered three factors demonstrating behavior taken by participants to secure their online privacy: "avoidance," "opt-out," and

"proactive self-protection" (p. 407). Overall, the survey results showed that 70.1% of

participants were "somewhat or highly concerned about online privacy" (p. 410). Culture

was found to play a significant role in online privacy management with cultures valuing

individualism showing greater concerns for online privacy whereas cultures favoring low

individualism were less concerned with online privacy (p. 411). Furthermore, Cho et al.

found that perceptions of online privacy are "multidimensional," and a comprehensive

one-size-fits-all online privacy policy will not work for multinational organizations

despite the coming together of cultures that are afforded by highly networked and

globalized societies (pp. 411-412). Cho et al. called for online privacy policy

development across industry sectors that catered to cultural and national preferences (pp.

412-413). It is not known whether middle school students perceive online privacy as

multidimensional or whether they consider other cultures in addition to their own when

weighing actions against online privacy values.

Taddicken (2014) surveyed 2,739 German Internet users ages 13 through 83 years

old (p. 267) on their perceptions about privacy concerns and self-disclosure online (p.

248). Participants indicated they disclosed personal information online in terms of

"factual information" such as last name, birth date, and profession (75%); mailing

addresses were provided by 54.6% of participants; and email addresses were provided by

23% of participants (p. 259). Considering sensitive information such as photos,

participants reported they had disclosed this information online at a rate of 67.5% (pp.

259-260). Taddicken found that participants were high disclosers of nearly all types of

information tested or were quite restrictive wherein no specific disclosure process was

used such that an all or nothing mindset was revealed (p. 261). The data also indicated

that participants concerned about online privacy tended to use fewer social networking

sites but tended to reveal more personal information online (p. 264). Age did not

significantly impact self-disclosure or "online privacy concerns" (p. 265). Females were

more likely to express privacy concerns and had a higher "general willingness to self-

disclose" for "sensitive information with access to the public" than males (p. 268).

Most general Internet users were concerned about online privacy (Taddicken,

2014). Despite their concern they disclosed personal information about themselves.

Females tended to be more concerned about online privacy, and culture had an impact on

online self-disclosure and online privacy for the participants. Online privacy was

considered multidimensional and may be a complex phenomenon for the average Internet

user to understand. The literature did not indicate whether the findings apply to middle

school Internet users or those actively engaged in online collaborative learning.

Furthermore, the literature did not include data about how the findings might apply to

social networking sites or how digital citizenship might be used to help Internet users

with managing their online privacy. Many age groups succumb to online privacy

dilemmas where social networking sites are concerned (Hazari & Brown, 2013). This is

a societal problem in terms of digital literacy (Ribble & Miller, 2013, p. 135) that can be

addressed by educating students on the topics associated with digital citizenship, social

networking, and global collaboration. How middle school students might perceive the

multidimensional nature of online privacy was not well established in the literature, nor

was whether middle school students consider other cultures in addition to their own when

considering online privacy. Teachers' perceptions on these issues are recorded in only a few research studies.

Digital Reputation: Digital Communication, and Digital Etiquette and Morality

Ribble's (2011) digital citizenship elements of digital communication, and digital etiquette and morality are combined in this section as they are closely related given they are associated with interactions with others. When communicating with others in a collaborative setting such as those afforded by social networking sites, students may need to monitor their digital communication and their digital etiquette and morality if they aspire to become model digital citizens. Ribble indicates that failure to communicate online in a manner that is consistent with good digital citizenship practices may impact students' online security, leave undesirable digital footprints, and affect students' digital reputations online and offline both now an in time. Further, Ribble and Miller (2013) offered concern regarding students' digital approach to others such that "a concern related to technology misuse is the lack of empathy that students are showing towards each other...in addition, the lack of face-to-face interaction can serve to dehumanize the other person, adding to this lack of emotional connection" (p. 137). How teachers perceive this behavior affecting middle school students using social media to communicate in globally collaborative projects is unclear, but my study investigated teachers' perceptions about the presence of and mitigation of such behaviors.

Digital reputation: Teen-aged students. Communicating with others in a digital context may afford unique opportunities and challenges. Considering teens' digital communication and their digital ethical and moral behavior in the use of social

networking sites online, Assumpcao and Sleiman (2011) found that seventh graders were more inclined to use friend's passwords or share their online passwords with others than not (63%), were more inclined to have received and possibly forward malicious emails to others than not (68%), and were more inclined to fight back if offended by others online (52%) (p. 312). Considering 10th graders, their reported rate of publishing a photo of another without permission was 67%, used or shared passwords with others was 88%, fought with others online was 80%, entered forbidden sites was 69%, gossiped about others online or using a cell phone was 81%, broke copyright laws with respect to plagiarism was 78%, and broke copyright laws without paying for rights or licenses was 96%. Assumpcao and Sleiman's findings demonstrated students in grades 7 and 10 engaged in online behavior that is inconsistent with the norms associated with good digital citizenship. The activities noted in their study could threaten students' online reputation. Online privacy and security were violated and the ability to establish online collaborative connections with others could be jeopardized if students view such activities as acceptable and normal.

Considering online reputation and ethical and moral behavior, Flores and James (2012) conducted a mixed methods study where 61 students from three high schools and six colleges ages 15 through 20 were surveyed and interviewed about their use of moral and ethical principles in online activities including use of social networking sites (pp. 834, 838). The types of thinking reported in the study included consequence thinking, moral thinking, ethical thinking, and a lack of all three prior types of thinking resulting in amoral and unethical thinking (p. 840). In terms of response rates, the results of the study

indicated the following rates of thinking among study participants: consequence thinking

where 75% was self-oriented (p. 840); moral person-centered thinking (40%), moral

perspective-taking (13%), moral principled thinking (48%) (p. 841); ethical community-

centered thinking (92%), ethical roles and responsibilities thinking (36%), ethical

complex perspective-taking (15%) (p. 842); and amoral and unethical thinking (98%) (p.

845).

 Considering concerns for oneself, Davis et al. (2010) found that some teens were

quite self-centered focusing on their own well-being online without concern for how their

actions might impact others. Regarding the types of thinking revealed in Flores and

James's study, targets and triggers were indicated for each type of thinking. Relevant to

this investigation is that social networks were shown to trigger consequence thinking (p.

840), moral thinking (p. 842), roles and responsibilities thinking (p. 844), complex

perspective-taking (p. 845), and amoral and unethical thinking (p. 845). Also relevant to

this study is that social networks were targets of complex perspective-taking (pp. 844-

845), amoral and unethical thinking (p. 845), and in terms of community thinking, 15%

of "participants also considered the negative effects of certain types of conduct for the

population of young internet users" (p. 843). Given the proliferation of social networking

site use and online collaboration, perspectives that are too self-centered may hinder

students' ability to collaborate in global learning engagements and may cause students to

devalue or ignore the tenants of digital citizenship. Digital citizenship was not found in

the studies, but Ribble's nine elements of digital citizenship provide a framework to

educate students about taking others into consideration when collaborating globally using social media.

A second study involving teens, adults, and ethical and moral online behavior includes Davis et al.'s (2010) work, where the authors conducted a multi-country case study that compared teens' and adults' perceptions of online behavior including ethical thinking, community-level concerns, and the principles of right and wrong (p. 133). Primarily, 277 teens and adults shared with each other perceptions about the "risks and promises of digital media" including perspectives on illegal downloading, deception in online gameplay, and roles and responsibilities in online communities (pp. 131-133, 135). Some teens found it acceptable to illegally download music files online, where others found it acceptable to cheat others online, and some teens were most concerned about their own actions online without consequence to others. However, most teens expressed an interest in upholding online roles and responsibilities and concerns for others online. Adults were found to have greater compassion for the online community, where teens were more self-centered in their concerns associated with "consequence thinking" when online (p. 135). Davis et al. (2010), suggested that this outcome is associated with Kohlberg's stage theories of moral development that transform from concern for oneself to a concern for others and society as one matures (p. 135). The authors found that teens benefited from adults' experience and feedback through focus dialog interaction and cross generational discussions of the type may prove useful where Media Literacy Education (MLE) is concerned. This finding potentially contrasts with Oolo and Siibak's (2013) results where students found "direct authority figures as threats

to their privacy" (p. 10). That is, some students may not welcome instruction from parents, teachers, and other individuals who assume the role of educator where digital literacy and digital citizenship is concerned. Such engagements could be considered an invasion of privacy as suggested by Oolo and Siibak. What is unclear is how those types of students can be reached and how they can be educated to become model digital citizens.

Although concern for online communication and associated ethics and morality is found in the literature, Flores and James (2012) noted that "…relatively few participants consistently thought about the ethical implications of their online actions. Indeed, some of our more impressive ethical thinkers about some themes committed moral lapses in other areas. More than just suggesting a lack of consistency, this suggests that youth deploy their ethical thinking situationally" (p. 847). Flores and James posited that students may interpret online communications as "less 'real'" than offline communications, and should this be the case, students may apply ethical and moral principles to online communications less frequently, if at all, compared to offline communications (p. 847). In contrast to this finding, Bati and Atici (2010) surveyed 414 Turkish university students about online identity (p. 3683) and found that 82.4% of their participants believed that communicating online was as real as communicating with others offline, and 84.8% integrated their use of Web 2.0 tools as part of their lifestyle (p. 3687). As such, university students might interpret online communications differently from middle school students. Given Bati and Atici's findings, students may fail to delineate between online and offline communications and the ramifications of their

actions in each setting. Otherwise, similar amounts of ethical and moral care may be applied to both online and offline settings.

The results from the studies about online communication, ethics and morality, and ultimately online reputation indicated that students did not always act as digital citizens when communicating with others online. This suggests that teens need help developing their digital citizenship skills so that they can interact with others globally in a respectful and supportive manner for the benefit of many rather than the benefit of the individual. The literature does not indicate how such findings apply to middle school students, nor does the literature reveal how the findings apply to global collaboration among students using social networking sites. Furthermore, the literature does not indicate how digital citizenship education can be leveraged to support ethical and moral online behavior, manage digital reputations, nor does it reveal teachers' perceptions on the same.

Digital reputation: Prospective teachers. The research literature provided insight into prospective teachers' online behaviors that could affect their digital reputations. In a qualitative study involving 17 prospective teachers' digital citizenship behavior norms, Sincar (2011) found that the participants exhibited behavior norms associated with digital communication and digital literacy whereas the participants were deficient in their behavior norms associated with the remaining elements including "digital access, digital etiquette, digital commerce, digital rights and responsibilities, digital law, digital health and wellness, and digital security" (p. 25). Sincar (2013) found that when communicating digitally, prospective teachers found technology served as a barrier and comfort levels were decreased compared to speaking in face to face settings

(p. 223). Likewise, while the data supported the principles of sharing, socializing, and comfortableness, the data did not support that participants used language properly. In the latter case, participants noted they did not adhere to proper use of language using digital communications, especially when using text messaging (pp. 223-225). Furthermore, Sincar (2013) found that inappropriate behavior was exhibited by prospective teachers and more frequently by male prospective teachers when using social media and digital devices than women. Sincar (2011) suggested that the research findings indicated that prospective teachers do not yet possess a command of digital etiquette norms (p. 10) nor did prospective teachers model good manners or sensibility in the use of digital technologies where digital etiquette was concerned (Sincar, 2013, p. 225).

Sincar's research was based on Ribble's nine elements of digital citizenship. The results indicated that prospective teachers' digital citizenship norms are not consistent and are lacking across Ribble's digital citizenship framework. Despite their age and potential familiarity with digital citizenship concepts and norms, prospective teachers are not yet prepared to fully model digital citizenship behavior for their students. The participants in Sincar's study could be said to have a poor understanding of online reputation and the facets that comprise online reputation. This suggests that a greater emphasis be placed on digital citizenship in teacher training programs. Sincar's work does not indicate how experienced teachers model digital citizenship behavior and norms for their students nor does it indicate students' responses to their teachers' digital citizenship behavior or instruction on digital citizenship. Furthermore, Sincar's research

does not incorporate the use of global collaboration in educational settings using social networking sites.

Digital reputation: Industrial implications. Findings in the literature that are associated with the industrial sector emphasize the importance of digital reputation, digital communication, and digital morale and ethics. These studies underscore why it is necessary for students to become active monitors of their online behavior, communications with others, and online reputations. Students' digital footprints are being monitored, recorded, and sold for industrial applications such as marketing campaigns (Hazari and Brown, 2013, p. 32), and when making hiring decisions (Cross-Tab Commission, 2010, p. 3). More specifically, the Cross-Tab Commission conducted a multinational study where 2,451 participants consisting of "275 recruiters, human resources (HR) professionals, and hiring managers, and about 330 consumers" were surveyed about online reputations across several types of online social networking sites and other online tools (p. 3). The Cross-Tab Commission found that online reputation "plays an important role in personal and professional life and has become a significant factor in making hiring decisions" (p. 3). The Commission also noted that "Because the private actions of employees can now embarrass companies in ways that make headlines and spread around the online world in minutes, hiring processes have changed to include vetting all behavior, not just how someone performs on the job" (p. 9). The data showed that 75% of U.S. recruiters noted that reviewing online reputations of job candidates has become a requirement (p. 6), and 70% of U.S. recruiters had rejected job candidates based on findings associated with the candidates' online reputations (p. 3). The data

indicated that the review of online reputation data for hiring purposes "will significantly increase over the next five years" (p. 3). Although most participants monitored their online reputations, 30% to 35% of participants did not relate online reputation with job seeking and employment and did not manage their online reputations (p. 4).

Assumpcao and Sleiman's (2011) research on online etiquette and behavior supported students regulating their online activities to maintain their digital reputations. Assumpcao and Sleiman found that "In the High School, we notice issues that can be future problems for our students in the workplace, such as passing on gossip and inappropriate images, accessing forbidden information, sharing passwords and not respecting copyright, leading to software piracy" (p. 314). In support of students' management of online reputations, Madden, Cortesi, Gasser, Lenhard, and Duggan (2012) conducted a "phone survey of 802 parents and their 802 teens ages 12-17," and 120 students were interviewed (p. 5) about online privacy, identity, and information sharing (p. 7). Madden et al. found that parents were involved with their teens' use of online security and privacy settings (pp. 3, 14). Furthermore, parents were concerned about their teens' reputation management (49%) and their teens' impact on future opportunities (44%) (p. 8) including academic and employment opportunities (p. 11).

Additionally, Hazari and Brown noted that privacy consists of both technical and behavioral components (p. 34). To maintain their digital reputations, students need to manage technology effectively as well as manage their emotions and ethical and moral behavior. Studies have shown that students do think about the ramifications of their online communications and interactions before acting (Davis et al., 2010; Flores &

James, 2012); however, research also indicates that students are inconsistent in this respect (Assumpcao & Sleiman, 2011). Students may not be familiar with the constructs of online reputation, nor may they be familiar with the extent to which their personal information is aggregated in social networking sites. Students may not have an appreciation for the extent to which their digital footprints paint a clear picture of their identities through the use of pictures, videos, chats, and affiliation with certain online communities; all of which can lead to highly personal reflections of students' identities that may be reviewed and used by others. Without knowledge about how publishing digital reputation may impact them and others, students may come to regret their online actions and information placed online as deleting digital histories permanently can be difficult if not impossible. The literature does not provide details about students' familiarity with those constructs, nor does it demonstrate how digital citizenship education can be used to overcome students' deficiencies associated with understanding digital reputation management. The literature does not reveal teachers' perceptions on the same, or how digital reputation management is perceived by teachers and students who engage in global collaboration using social networking sites.

Cyberbullying

Cyberbullying is a particular concern and hazard students may encounter when interacting with others online and is described as "the use of technology to intentionally harm or harass others" (Bauman, 2010, p. 803). The literature revealed that cyberbullying is present in many parts of the world including the USA (Bauman, 2010; Burton et al., 2012; Henson, Reyns, & Fisher, 2011; Parris, Varjas, Meyers, & Cutts,

2012), Germany (Festl & Quandt, 2013), India (Meena, Mittal, & Solanki, 2012), Serbia (Popović-Ćitić, Djurić, & Cvetković , 2011), China (Lam, Cheng, & Liu, 2013; Leung & McBride-Chang, 2013; Zhou et al., 2013), England (Monks, Robinson, & Worlidge, 2012), Belgium (DeSmet et al., 2014), and Taiwan (Lee, Zi-Pei, Svanstrom, & Dalal, 2013). Cyberbullying is next categorized across cyber and traditional bullying, frequency of incidents, gender, motives, coping mechanisms, and college students' cyberbullying activities.

   Cyberbullying and traditional bullying. Research showed that cyberbullying is correlated to traditional bullying as Burton et al. (2012) found in a quantitative study of 851 middle school students in grades 6-8 on "the role of peer attachment and normative beliefs about aggression on traditional bullying and cyberbullying" (p. 103). They found that bullies and victims in one context are apt to be bullies and victims in other contexts, both online and offline (p. 110). Zhou et al. (2013) surveyed 1,438 high school students in central China in grades 10 through 12 on risk factors associated with cyberbullying (pp. 632-633) and found that "a significant positive correlation was found between traditional bullying and cyberbullying" (p. 638). Monks et al. (2012) surveyed 220 students "aged 7 to 11 years…from five primary schools in southeast England" on their perceptions and experiences with cyberbullying (pp. 480) and found that "…traditional bullies are nearly seven times more likely to be cyberbullies than those who are not traditional bullies. Of those who were cyberbullies, 63.6% (N=7) were also traditional bullies" (p. 484). DeSmet et al. (2014) surveyed 102 obese adolescents in Flanders, Belgium, on the influence of traditional bullying and cyberbullying on obese adolescents'

lifestyles (p. 1). Participants' average age was 15 years old (p. 1). They found that "There is a strong overlap in victimization among obese youth from traditional aggression and cyber aggression: 76.5% (13/17) of the cyber-victims among obese youth are also traditional victims. Traditional victims consequently are also 17 times more likely to be cybervictims" (p. 6).

  Cyberbullying and frequency of incidents. Research showed that cyberbullying is prevalent and measurable in terms of the frequency of incidents of cyberbullying and cybervictimization. Festl and Quandt (2013) conducted an explorative quantitative study surveying two schools' students (408 participants total) aged 12 through 19. The authors used a network perspective to provide illumination on factors that influence cyberbullying and found that 22% of participants experienced cyberbullying (p. 113). Popović-Ćitić et al. (2011) surveyed 387 students from five middle schools in Belgrade, Serbia, 11 to 15 years of age from grades five through eight on the prevalence of cyberbullying in Serbian middle schools (p. 416; p. 419). The authors found that cyberbullying was present in their sample and cyberbullies engaged in harassment (11.6%), denigration (10.1%), and outing (8.5%) (p. 418). Monks et al. (2012) found that their participants engaged in cyberbullying activities at a rate of 5% and participants noted being cybervictims at a rate of 20.5% (p. 482). Zhou et al. (2013) found that 34.4% of their participants engaged in cyberbullying, 56.88% indicated they were victims of cyberbullying, and 26.84% indicated they took on both roles (p. 634). Henson et al. (2011) surveyed 1,310 college students on their behaviors associated with online security use in social networks and online interpersonal victimization (p. 257). The study results

indicated that 42% of participants "of social network users experienced some kind of interpersonal victimization while online" (p. 263).

Several studies considered cyberbullying and cybervictimization from special case perspectives. Lam et al. (2013) conducted a population-based cross-sectional exploratory study and administered a survey to 1278 students aged 13 through 18 in two provinces in China on the correlation between violent online games exposure and cyberbullying and cybervictimization (pp. 159-160). They found that "Students who had been involved in cyberbullying as well as being victimized were two times as likely to have been exposed to violent online games, and nearly four times as likely for those involved in bullying others" (p. 159). Leung and McBride-Chang (2013) conducted a correlational study involving 626 5th and 6th grade students aged 9 through 15 in Hong Kong, China, who were administered a questionnaire on the psychosocial effects of online friendship, cyberbullying, and online game playing (p. 159, 166). The authors found that 11.2% of participants were heavily victimized online whereas 12.82% of participants cyberbullied frequently (pp. 171-172). DeSmet et al. (2014) found that "Obese youth were 2.5 times more likely to be the victim of cyber-bullying than non-obese youth" (p. 10). Bauman (2010) conducted a quantitative exploratory study in which he surveyed 221 students in grades 5-8 in an Arizona community on their perceptions of cyberbullying and found that cyberbullying tendencies increased with increasing age and increasing grade level (p. 820).

The above research findings indicate that cyberbullying and cybervictimization are prevalent in several countries, across varied age groups, and may have implications

for special cases such as online gaming and for students who are obese. The literature

does not indicate how this data relates to online collaborative learning, and whether

cyberbullying and cybervictimization are being addressed by school systems that teach

digital citizenship, and whether social networking sites are included in digital citizenship

instruction where cyberbullying and cybervictimization are concerned. Furthermore,

student and teacher perceptions on cyberbullying and cybervictimization are not found in

the literature with respect to online global collaboration using social networking sites for

educational purposes.

Cyberbullying and gender. Cyberbullying and cybervictimization are met with

mixed results in the literature in terms of gender. Popović-Ćitić et al. (2011) found that

"boys are more likely to be involved in cyberbullying than girls" (p. 418) and boys were

twice as likely to be victimized compared to girls (pp. 418-419). In a similar research

finding, Zhou et al. (2013) found that boys were cyberbullies and cybervictims more

frequently than girls (pp. 634-635). In contrast, Monks et al. (2012) found that "Girls

reported significantly more types of cyberbullying (as an aggressor) than boys" (p. 483).

Festl and Quandt (2013) found that boys were typically perpetrators, and girls where

typically victims (p. 113). Henson et al. (2011) found that "The gender of the social

network user, specifically being female, increases one's changes of experiencing online

interpersonal victimization by nearly two times" (p. 263). Cultural differences,

educational differences, or differences in parental oversight may explain the variance in

the above findings. However, the literature does not indicate how gender affects students

engaging in global collaboration online using social networking sites. The literature does

not demonstrate how student and teacher perceptions of online global collaboration using social networking sites affects students' learning or ability to take on the roles associated with model digital citizens.

Cyberbullying and motives. The motives that elicit or facilitate cyberbullying and consequently cybervictimization among students may be beneficial to note as teachers, parents, school administrators, community members, and other stakeholders can be alert for behavior that might suggest cyberbullying activity or behavior. Several studies provided additional detail on students' motivations that elicited or facilitated cyberbullying behavior. For example, Zhou et al. (2013) noted that their participants were motivated to cyberbully because "'I dislike someone' (29.14%); 'for fun' (23.95%); 'out of boredom' (19.16%); 'to vent' (15.77%); 'to get revenge' (7.58%);'to conform/fit in' (5.59%), 'to attract his/her attention' (3.19%); 'it looks cool' (1.60%); and 'to get some other benefit' (1.60%)" (p. 639). Henson et al. (2011) found the following "predictors of victimization[:]" "gender," "the number of online social networks," "the number of daily updates to one's online social networks," "allowing strangers to have access to online social networking profiles," and "use of an online profile tracker" (p. 263).

Several studies included findings about other factors that facilitated cyberbullying behavior. That is, Bauman (2010) argued that cell phones may facilitate cyberbullying behavior especially since the technology makes it easy to personalize aggressive behavior due to pictures and videos that can be created using cell phones (p. 825). Zhou et al. suggested that "the frequency of Internet access" (p. 641), Internet use in unmonitored

private spaces (p. 641), and "accessing the internet at a commercial location" (p. 641), all of which can be done using cell phones, may facilitate cyberbullying behavior. Popović-Ćitić et al. (2011) cited frequency of Internet use and cell phones as facilitating cyberbullying among students (p. 419). In their study on cyberbullying among students, Monks et al. (2012) also cited the need to educate young students about mobile phone use (p. 488).

How the motives and facilitating factors might apply to global collaboration and social networking sites is not clear. The literature does not provide understanding about how cyberbullying motives and facilitating factors may affect student engagement and learning in online global collaborative settings. How students' and teachers' perspectives on cyberbullying may affect students' willingness and ability take on the roles associated with digital citizenship is missing from the literature.

Cyberbullying and coping mechanisms. The literature showed that in response to being cyberbullied students have adopted several techniques to cope with cyberbullying. First, several studies revealed that students fought or bullied back at the following rates: 32% (Bauman, 2010, p. 817), 6.7% (Monks et al., 2012, p. 486), and 11.86% (Zhou et al., 2013, p. 639). Second, the data among four studies indicated that some students ignored or did nothing about cyberbullying (Parris et al., 2012, p. 291), Bauman's (2010) participants ignored cyberbullying 24% of the time (p. 817), Zhou et al's participants ignored cyberbullying 45.85% of the time (p. 639), and Monks et al. (2012) whose participants ignored cyberbullying 47.9% of the time (p. 485). Third, students spoke with others about their experiences after being cyberbullied in two studies

at the reported rates of 75% (Monks et al., 2012, p. 485) and 35.57% (Zhou et al., 2013, p. 639). Other cyberbullying defense and techniques used to lesser extents were discussed in the research of Monks et al. (2012), and Zhou et al. (2013). Additionally, DeSmet et al. (2014) found a correlation between cybervictimization and contemplation of committing suicide for the obese teens surveyed (p. 9). Finally, in a quasi-experimental study where 30 Taiwanese seventh grade students were administered a teaching intervention and questionnaire as a cyberbullying prevention measure (p. 1), Lee et al. (2013) found that their intervention reduced cyberbullying intentions among participants, but did not improve participants' attitudes towards cyberbullying (p. 5).

The above findings on coping and defense mechanisms adopted by students in response to cyberbullying demonstrate the critical nature of cyberbullying. Lam et al. (2013) called for all stakeholders to become familiar with the negative aspects of cyberbullying and that research findings should be considered in policy development (p. 164). Bauman's (2010) participants were unaware of a cyberbullying policy at their school (41%) and claimed a cyberbullying policy was not implemented at their school (25%) (p. 815). Meena et al. (2012) surveyed 198 teens in a cross sectional study in India on the use of social networking sites (p. 95). Based on the results of their study, they concluded that parents and teachers must take action by instructing students on social networking sites as well as cyberbullying (p. 97). Despite such calls to action, the data did not indicate how cyberbullying coping and defense mechanisms may affect students' when engaging in global collaborative learning using social networking sites. Whether existing coping and defense mechanisms may assist or hamper students engaging in

global collaborative learning environments is unclear. How students and teachers

perceive and use coping and defense mechanisms developed in relation to cyberbullying

experiences when engaged in global collaboration using social networking sites is not

present in the literature. Furthermore, how the elements of digital citizenship can help

middle school students with decisions about how to treat others from an ethical and moral

perspective when globally collaborating and learning with others online is missing from

the literature.

      Cyberbullying and college students. Cyberbullying is a phenomenon that not

only affects middle school students but also affect older students who attend post-

secondary educational institutions. Several studies indicated the prevalence of

cyberbullying in higher education. Barlett et al. (2014) conducted a longitudinal

quantitative study where 293 undergraduate students in America and 722 undergraduate

students from Japan were administered questionnaires on cyberbullying (p. 300). Barlett

et al. asserted that "cyberbullying is a worldwide problem" (p. 302), and that more

American students engaged in cyberbullying activities than Japanese students (p. 308).

Doane, Kellye, Chiang, and Padilla (2013) conducted an exploratory factor analysis

quantitative study where 538 American college students were administered a pilot survey

and thereafter 638 American college students were administered a separate survey (p.

207). Their results indicated that males were more often cyberbullying victims and

perpetrators than women (p. 215), and they posited that "cyberbullying is a pervasive

problem in the emerging adult population" (p. 216). Xiao and Wong (2013) conducted a

quantitative study where 288 university students in Hong Kong were administered

questionnaires about predicting cyberbullying behavior (pp. 45, 55). The participants

reported assuming the following cyberbullying roles: cyberbully = 60.4%, cybervictim =

71.9%, and cyberbully and cybervictim = 51.7% (p. 49). The authors found that females

were more likely to engage in cyberbullying activities than males (p. 57); which is

inconsistent with other findings in the literature. Zalaquett and Chatters (2014) surveyed

613 university students on their high school and college cyberbullying experiences (p. 1).

They found that 31.3% of participants experienced cyberbullying in high school, 19%

experienced cyberbullying in college (pp. 3-4), and 15% of all participants experienced

cyberbullying in high school and in college (p. 4). Zalaquett and Chatters cited that

cyberbullying can lead to suicide in extreme cases and called for change to educate

stakeholders on the topic of cyberbullying to "prevent the transition of cyberbullying

from K-12 settings to college" (p. 6).

Although cyberbullying is often associated with younger students, the above

research data demonstrate that cyberbullying is also present in higher education. How

middle school students might be provided instruction on cyberbullying and to prevent

cyberbullying activity from creeping into their experiences in higher education remains

unknown. How teachers can leverage research findings on the prevalence of

cyberbullying in higher education when preparing instruction to their students in middle

school settings is unclear. One study provided findings on high school teachers' the

perceptions of cyberbullying however. Kiriakidis and Demarques (2013) conducted a

qualitative case study involving face-to-face interviews with 10 high school teachers in

the USA about their perceptions and experiences with student-to-student cyberbullying

(pp. 101, 107). Kiriakidis and Demarques found that teachers could define cyberbullying but expressed difficulty with detecting and addressing cyberbullying (p. 109). Participants indicated that educating students and teachers as well as parents, school administrators, and community members about cyberbullying was needed (p. 110). Furthermore, no cyberbullying policies were implemented at the school district to which the teachers belonged (p. 110). It is unclear to what degree, if at all, the findings are generalizable to the middle school population. Cyberbullying is a globally pervasive problem, but it is unknown the degree to which school districts are without cyberbullying policies. Without such policies in place, the potential for cyberbullying activities to increase is potentially significant. How cyberbullying may affect students' ability and willingness to collaborate with others in a globally networked educational setting remains unclear. Whether cyberbullying may affect students' ability and willingness to take on the roles of digital citizens is missing in the literature. Whether students in middle school settings are ready to consider the ramifications of cyberbullying on their lives during middle school and after they graduate from high school is uncertain. How the above findings can be used to help students collaborate globally in online socially networked learning environments remains unanswered.

Barriers to Digital Citizenship

The first research question asked "What are teachers' perceptions about strategies middle school students used to overcome barriers to taking on the roles associated with digital citizenship when engaged in global collaborative projects?" The literature review is organized by the following themes for RQ2: barriers involving Wikis, barriers

involving other types of social media. The literature search yielded one study that included barriers associated with high school who engaged in global collaborative projects in education. That is, Reimer and Reimer (2012a) conducted a qualitative design-based research study where 50 high-school students were solicited for feedback using open-ended questionnaires (p. 2214). The authors investigated motivational factors associated with the use of technology, how technology can foster collaboration, and how it can support learning a second language. Exchanges of information between English-speaking U.S. students and Spanish-speaking students afforded the U.S. students the opportunity to investigate foreign culture and language from an authentic perspective. Social media was used by U.S. students to interact with their peers to practice writing in Spanish. Obstacles were reported as unequal distribution of electronic pen pals, "lack of control of the other participants," "miscommunication and language barriers," technological obstacles, and the delay in receiving communications from their pen pals (p. 2216). Although students were proficient with the technology used, blogs in this case, students needed coaching on how to interact with others when instant feedback from their global peers was not the norm for the project as well as on "critically analyzing purpose, source, and validity of the technology they are using" (p. 2217).

Barriers Involving Wikis

Several studies involving students and teachers in higher education identified barriers associated with students' and teachers' use of social networking sites and online collaboration. One study specifically addressed digital citizenship when using social networking sites. That is, Wu et al. (2011) conducted a case study incorporating 110

students in higher education. Wu et al. used the International Society for Technology in Education's (ISTE) National Educational Technology Standards for Students (NETS-S), now known as ISTE Standards•S, for guidelines about digital citizenship in their study on using Wiki technology as an instructional tool in higher education. The authors found that Wiki technology "was too complicated in its operation and involved an excessive amount of time," and that their students did not view Wiki technology favorably when used as a collaborative instructional tool. Likewise, Tuten and Marks (2012) surveyed 531 marketing educators in higher education on the adoption of social media tools in educational settings in a case study and found that skills levels and ease of use were barriers associated with using social media in educational settings. The authors found that while the participants used social media for personal uses, such use did not equate to using social media in classroom settings in a substantial manner. This suggests that despite educators' beliefs about the ease of use of such technology, and students' familiarity with such technology, teachers may need to provide their students with "technical skills training" about how to use social media technology in classroom settings (pp. 148, 149). Furthermore, students did not accept the notion of editing the work of their peers in a Wiki. As such, the authors concluded that attitude and intrinsic motivation are an important part of using Wiki technology in classroom settings as students' willingness to use collaborative technologies is not guaranteed. Therefore, positive views on and uses of technology were not observed; which indicates that students did not meet the minimum standards for being digital citizens per the as ISTE Standards•S guidelines.

Considering other studies involving students in higher education, Bhattacharya (2011) conducted a qualitative study involving 180 graduate students. The study used Wiki social media technology as a democratic learning environment. Rooted in community of practice and interpretivist frameworks Bhattacharya used Wikis to investigate communities of practice, individual and collaborative voices, and collaborative knowledge construction. Three overarching themes were discovered: "(i) anxiety about academic performance is not about performance, (ii) being wiki editors is counter-intuitive to democratic learning, and (iii) raw forms of knowledge-making represent legitimate mastery of knowledge" (p. 50). Bhattacharya found that students' anxieties about grades stemmed from their lack of familiarity and uncertainty associated with student-centered learning approaches where the learner takes control of their learning (pp. 51-52). Guo and Stevens (2011) also researched the usefulness of Wiki technology for group collaborative learning in their study. Using a case study research design, Guo and Stevens surveyed 289 first year college students yielding 205 usable surveys. The students' perceived usefulness of Wikis was "strongly influenced by their teachers' attitudes towards the technology" (p. 221). Positive teacher attitudes toward Wiki technology were positively correlated toward positive perceptions of Wiki technology usefulness whereas less favorable teacher attitudes toward Wiki technology were positively correlated toward less favorable perceptions of Wiki technology usefulness (pp. 230, 238). In this respect, teacher attitudes toward social media technologies could serve as a barrier for students where student perception and use of social media technologies is concerned. This aligns with Poellhuber and Anderson's

(2011) institutional effect findings where the organization's cultural climate can influence

students' use of social media technologies (pp. 110-111). Felt et al. (2012), suggested

that students traditionally adopt a passive approach to learning in traditional classroom

settings, which may be difficult to change in a "globally connected and diverse world" (p.

222). To help students overcome what might be considered a basic learning approach

barrier, teachers may show support of organizational climates and therefore influence

students' perceived usefulness of social networking technologies using positive teacher

attitudes. In a study involving 48 college students' perceptions and attitudes about using

Wiki technology in a collaborative research project, Muñoz (2012) found the following

barriers associated with using Wikis for educational uses: commenting, feedback, trusting

content, and technical issues (p. 24). Additionally, Guo and Stevens found that prior use

of other social media technologies had a negative influence on students' perceived

usefulness of Wiki technologies. Specifically, Facebook and MySpace were identified as

having a negative influence on students' perceived usefulness of Wiki technologies and,

Guo and Stevens suggested that the glamour offered by those social media tools in

comparison to Wiki technologies was preferred (p. 234). As such, students' preferences

for specific types of user interfaces and aesthetics could play an important role in the

utilization of social media technologies, especially in the case of prior experience.

Likewise, how social media tools are integrated into learning environments may clash

with students' prior experience with the same social media tools in personal and/or

preferred settings outside of school settings. This position aligns with Wu et al.'s (2011)

research where they found that students had negative perceptions of Wikis as

instructional tools. Additionally, Guo and Stevens found that students favored Wiki

technology more so when they perceived the tool would help them with their coursework

(p. 232). It is unclear whether Wu et al. (2011) found similar associations between

students perceived utility of Wiki technology and their likelihood of using Wikis.

Finally, Guo and Stevens found that when students had used Wikis prior to taking part in

the study, their perceptions of Wikis were more favorable (p. 234). In this case, prior

social media use may serve as a potential barrier as well as a potential bridge for students

as they engage in global collaborative educational endeavors when using social media

and social networking sites. However, how the prior use of social media may influence

students' willingness to actively take on the new roles associated with digital citizenship

when engaged in global collaborative projects in education remains unclear. How

teachers' attitudes, institutional climate, institutional culture, and technical aspects of

using Wiki technology and other social media tools may affect students' perceptions of

and willingness to actively take on the new roles associated with digital citizenship when

engaged in global collaborative projects in education is missing from the literature.

Barriers Involving Other Types of Social Media

Other barriers that may potentially impact students' perceptions of digital

citizenship and global collaborative projects are demonstrated by Meishar-Tal, Kurtz, and

Pieterse (2012) who conducted a qualitative pilot case study involving 43 graduate

education student on the use of Facebook as an alternative to traditional learning

management systems (LMSs). Although Facebook as an LMS was not perceived as

difficult to use by 34% of participants, 39% of participants experienced difficulty with

orientation, 27% expressed workload difficulties, 4% had difficulty with using Facebook as an educational tool, and 4% experienced difficulties with writing and self expression (p. 43). The authors also found that the amount of overhead was perceived as a burden by some students (p. 45). In a survey of 318 preservice teachers' knowledge about and ability to teach cyber ethics, cyber safety, and cyber security, Pusey and Sadera (2012) found that their participants were unable to teach anything more than 4% of the 75 topics surveyed (p. 87). That preservice teachers lack knowledge about online privacy and protection could negatively impact students' perceptions of global collaboration, social networking site use, and digital citizenship. This finding could serve as a barrier to students becoming responsible digital citizens.

Suwannatthachote (2012) conducted a mixed methods study involving preservice teachers enrolled in two Thailand universities. In response to an open-ended questionnaire that prompted for participant feedback about the negative aspects of using social networking sites, 377 usable results yielded the following six areas of concern: social networking sites tended to draw participants in resulting in a waste of time, inappropriate content and language coupled with cyberbullying, participants perceived users of social networking sites as being lax with security measures, online etiquette, and felt their personal space was invaded (pp. 2598-2599). Despite those findings, participants noted that their connections with online friends were tighter at the cost of their face to face friends (p. 2599). Suwannatthachote's findings ran parallel to Guo and Stevens's (2011) findings on teachers' attitudes associated with social media use such that negative perceptions of social media could negatively influence students' perceptions

on social media use. Based on the research findings, Suwannatthachote called for a revision to an educational technology course to specifically prepare preservice teachers to take on the roles of digital citizens by instructing them on the proper utilization of social networking sites as well as how to model good digital citizenship behavior for their students (pp. 2599-2600). Suwannatthachote's preservice teachers' perceptions of social networking sites could serve as barriers for students as they learn about global collaboration and social networking and take on the roles associated with digital citizens.

Nerantzi (2012) conducted a mixed methods phenomenography involving ten teachers and staff from seven institutions of higher education within the United Kingdom and Scotland (pp. 306, 308). Qualitative data was collected using interviews and quantitative data was collected using surveys. The aim of the study was to determine whether problem-based learning (PBL) could be supported by Web 2.0 technologies in a fully online, networked, and cross-institutional learning environment (pp. 306-308). A sense of community was lacking, a small group size on the order of three members was preferred, and the absence of rules was problematic (pp. 309-310). Facilitators adopted a "hands-off" approach, which lead to unfavorable student perceptions of their own work and understanding of tasks (p. 310). As such, facilitators realized that a hands-on approach is much more preferable and that facilitators have a greater responsibility in an online learning setting based on problem-based learning (p. 310). Engaged facilitators were said to motivate and eradicate barriers for students (p. 310). Participants did not fully appreciate the technology used in the study and some found it stifling (p. 310). The literature shows that students are using social media at increasing rates (Davis et al.,

2010; De Abreu, 2010). Given this finding it may be the case where teachers can reach

out to and connect with students in a way that is familiar to students'. By using social

media as a familiar tool, students may be apt to take to learning more readily in a familiar

digital context. Nerantzi found that careful planning is needed and structure should be

considered when using educational settings involving problem-based learning in open

networked environments. While sharing with peers from different domains and from

different institutions was favored by participants, minimal facilitator support and

unfamiliarity with technology were viewed unfavorably by participants. The findings

demonstrate the importance of instructor guidance when working with social networking

sites in a global collaborative environment online. Although the participant group was

small, the findings indicated that instructor involvement plays an important role for

groups of ten. Without active instructor involvement, middle school students may

experience the same barriers and difficulties networking online in globally collaborative

learning environments. It is not clear whether middle school students hold the same

perceptions as those held by the participants in Nerantzi's study. It is also uncertain

whether younger students would perceive the lack of guidance, group size, and

technology as barriers to learning in globally collaborative settings.

Tervakari et al. (2012) conducted a mixed methods case study involving 35

university students. The purpose of the study was to consider the utility of social media

when used in a collaborative peer learning environment. The results of the study

indicated that procrastination, attitude, working habits, and motivation influenced

collaboration in the social media environment (p. 40). Tervakari et al. found that little

collaboration was found in the study, and that the interface, late or last minute posts made by students, and students' lack of appreciation for information sharing negatively influenced collaborative efforts (p. 40). Turan, Tinmaz, and Goktas (2013) interviewed 20 Turkish university students ages 18 through 25 on their perceptions about not using social networking sites (p. 137). The top five reason for participants not using Facebook were: "excessive time spent online," "lack of interest," "preference for other communication tools," "addiction," and "dislike of self-presentation" or privacy (pp. 139-140). When prompted for rationale about virtual friendships, participants noted that they were "dangerous" (85%), "fake" (55%), and "meaningless" (20%) (p. 141).

The above demonstrates that language, time zone and timing differences, institutional climate, prior and personal use of social networking sites, educational uses of social networking sites, teacher attitudes, and technical concerns, for example, serve as barriers to students' learning in educational settings. Quite possibly, the same barriers may be reframed to help students learn using collaborative educational endeavors where social networking sites are used. The above studies do not address how educators help middle school students may bridge the gap from old learning mindsets where passive learning is the default learning style to new mindsets that are rooted in global collaboration and active digital citizenry. Furthermore, how the barriers noted in the literature above may be perceived by students in middle school settings remains unanswered. How such barriers may disenfranchise students' interest in and willingness to engage others in globally collaborative learning initiatives is unclear, and whether

middle school students are hampered by the same barriers when taking on the roles associated with digital citizenship is not present in the literature.

Digital Citizenship and Social Media

The third research question (RQ3) asks: What are teachers' perceptions about the use of social media and global collaborative projects to enhance middle school students' digital citizenship and academic achievement? The literature review is organized by the following themes for RQ3: social media, digital citizenship, K-12 students and global collaboration; social media, digital citizenship, K-12 students and local collaboration; social media, digital citizenship, and college students; and social media and business. The following themes are organized by sub-themes. Social media, digital citizenship, K-12 students and local collaboration is organized by the following sub-themes:

- Blogs
- Other types of social media.

Social media, digital citizenship, and college students is organized by the following sub-themes:

- Wiki
- Facebook
- Twitter and other social media.

The literature contained few articles on using social media to foster global collaboration among middle school students. Several articles that described the use of social media, namely blogs, social networking sites, and other types of social media, to foster learning proved relevant to my study.

Social Media, Digital Citizenship, K-12 Students and Global Collaboration

Few articles provided data on the use of social media in a globally collaborative

format among middle school students. For example, in a qualitative design-based

research study including 50 high-school students on the use of social networking to

interact with Spanish-speaking students from other countries, Reimer and Reimer (2012a)

reported that their students found the experience "relevant in some personally meaningful

way" (p. 2214), enjoyed the collaboration afforded by social media, and appreciated the

novelty of the project. Students found their worldly perspectives grew due to

understanding in greater detail the need to learn additional languages as well as

experiencing how a foreign language was used in its native setting (p. 2215). Students

empathized with their Spanish-speaking pen pals as they understood the difficulties

associated with learning English as a second language (p. 2215). Peppler and Solomou

(2011) conducted a qualitative design-based research study involving 85 elementary and

middle school students from several countries. The research used the social media virtual

environment known as Quest Atlantis and data took several forms including screen

captures of participants' architectural creations, reports, and chat and message logs (p.

16). Participants constructed virtual buildings within the virtual social media

environment. Peppler and Solomou found that the social media virtual environment

helped foster collaboration and community that supported creativity and sharing cultural

influences using the creation of three-dimensional virtual architectural artifacts (p. 21-

22). Peppler and Solomou posited that social media can be used to support the needs of a

community by preserving history in digital form. In turn, all stakeholders, including

businesses and educational institutions, can leverage digital histories as building blocks for future collaboration, innovation, creativity (p. 22).

The dearth of research on the use of social media for global collaborative learning in middle school settings indicates that this research area remains in its infancy. Furthermore, the literature does not provide illumination about how the research findings can be used to foster digital citizenship among students engaged in global collaborative learning initiatives. Teachers' perceptions on the same are also absent from the literature.

Social Media, Digital Citizenship, K-12 Students and Local Collaboration

Although not globally oriented, several articles provided findings on the use of social media in collaborative educational contexts. Blogs appear to be the most popular type of social media researched within this age group. Other types of social media applicable to K-12 settings as applicable to this research study included multi-user virtual environments or MUVEs, Wikis, Nings, and social networking sites as an unspecified general category of social media.

Blogs. Liu et al. (2011) administered a questionnaire to 57 third graders in a collaborative digital storytelling study. Social media was used to facilitate linear and hypermedia learning across two cohorts. Activity logs or Web access logs were used to assess students' behavioral attributes, and questionnaires served as data sources for collaborative process, peer support, authorship, and peer result (p. 1550). Lieu et al. found that a hypermedia approach to digital storytelling in a social media setting yields more favorable outcomes than a linear approach to digital storytelling in social media. Students were more inclined to edit the works of peers as well as have their own works

edited by peers in the hypermedia cohort (p. 1552). Peer support was considered greater

in the hypermedia cohort as students' cognitive load was lessened due to the flexibility of

the node-and-link interface as compared to the progressive linear interface present in the

linear cohort (p. 1552). Students were able to focus less on the succession of the

storyline as they could integrate their portion of the story into the storyline more

dynamically when using a hypermedia interface (p. 1552). Authorship was deemed

"significantly higher" in the hypermedia cohort as students were able to originate new

story components and remix the stories of others; which lends to individual and

collaborative ownership (p. 1553). Students' perceptions of collaborative output was

"significantly higher" in the hypermedia cohort as students were afforded remix,

branching, and copy-before-modification opportunities; which reduced team tension and

increased team satisfaction (p. 1554). The nonlinear approach of the hypermedia

interface afforded individual contributions to a collaborative project. Students could

create their own sub-story to fit into the original or main storyline. This approach was

not available when using a linear production method. This study could be expanded

across different age groups and in a manner that fosters digital citizenship.

　　　　Thein et al. (2010) conducted a qualitative case study involving 13 high school

students on the use of blogs as a media literacy initiative in terms of understanding the

social construction of lived and text worlds (p. 23). The authors used Beach and Myers's

(2001) inquiry strategies for social worlds that consisted of immersing, identifying,

contextualizing, representing, critiquing, and transforming to help students learn about

the social construction of lived and text worlds (p. 19). Thein et al. made the following

observations based on the results of their study:

> We found that students demonstrated four key understandings of social worlds: 1)
>
> social worlds are constructed and fluid, 2) identities are fluid within and across
>
> social worlds, 3) norms, beliefs, and perspectives are shaped by participation in
>
> social worlds, and 4) tensions occur as individuals move across social
>
> worlds…We found that students used the blogs in three prominent ways
>
> including: 1) as spaces for documenting details of life, 2) as spaces for audience-
>
> aware writing, and 3) as spaces for expressing and reconsidering beliefs…We
>
> found two trends in this data, both of which were consistent with the trends found
>
> in the blogs – students understood 1) identity as fluid and shifting across roles in
>
> various social worlds, and 2) social worlds as constructed based on specific rules
>
> and norms to which insiders are privy and new members must learn. (p. 26)

The authors concluded that blogs helped students capture and negotiate the everyday

details of life, manage their identities, consider multiple perspectives, question their own

beliefs and perspectives, and navigate multiple social worlds (pp. 27-31). The audience

ambiguity that is often associated with blogs assisted in some of these areas. Thein et al.

found that blogging increased students' critical thinking, and "students noticed worlds of

texts as constructed based on rules and norms, and identity as fluid and shifting across

those worlds" (p. 31).

The use of blogs in educational settings is well documented in the literature. Few

research articles include the use of blogs in middle school settings. As in the prior

section, the literature does not provide illumination on the use of blogs in middle school settings where they can be used to foster digital citizenship among students engaged in global collaborative learning environments. Teachers' perceptions on the same are also missing in the literature.

　　　　Other types of social media. Felt et al. (2012) conducted a case study involving eight teenagers. The study included the after school pilot program Explore Locally, Excel Digitally (ELED); which was designed to create a participatory culture guided by "motivation and engagement, creativity, relevance, co-learning, and ecological learning" (p. 213). The ELED program also fostered students' "digital literacy skills, new media literacies, and social and emotional learning competencies" (p. 213). Community involvement and improvement along with self reflection and students' roles in their communities that go "beyond the self" were also integrated into the ELED program (p. 215). Additionally, students were afforded the opportunity to earn a Certificate of Excellence in Digital Citizenship by showcasing their individual efforts in the program. Felt et al. found that students demonstrated "Intermediate digital citizenship" based on students' development of "new media literacies and social and emotional learning skills" (pp. 219-220). Emphasis was placed on perspective-taking, reflecting on one's roles and responsibilities, and potential benefit and harm to communities in the calculation of digital citizenship across "new media literacies and social and emotional learning" (p. 219). Based on the research, social media can entice students to learn as well as engage each other. The research was informed by the tenants of The GoodPlay Project and Project New Media Literacies, for example, but how the findings apply to global

collaborative learning engagements that use social media is missing from the literature (p. 215).

Cardoso and Coutinho (2011) conducted a quantitative study where 20 eleventh grade students engaged in a statistics module were surveyed (p. 3171). The authors noted that such students use computers in their daily lives, but the research on the educational use of computers is lacking for these students (p. 3171). Google Docs was used to facilitate collaboration between students and learning of statistics concepts. Cardoso and Coutinho found that 95% of their students would use the tool again (p. 3171), but that access to technology such as the availability of computer labs and students without their own computers was problematic (p. 3172). Students reported finding the use of Google Docs enriching (100%) (p. 3172), found that collaborating using Google Docs was stimulating and motivating (90%) (p. 3173), and observed a greater appreciation for the statistics discipline overall (p. 3173). Students noted that 60% of the group actively participated and 45% of the group took on the role of autonomous learner (p. 3172). Students valued collaboration (90%) but acknowledged greater responsibility using this learning format (90%) (p. 3172). While Google Docs was perceived as having a positive influence on students' learning, the use of Google Docs in a global collaborative learning setting is not found in the literature nor is the application of digital citizenship to this theme found.

Zeiger and Farber (2012) included 82 seventh grade social study students in a case study on student engagement within a multi-user virtual environment or MUVE. The findings of the study demonstrated that student engagement increased when

assignments were delivered in a MUVE (p. 405). With respect to having a voice and

recognition of their voices in an online MUVE, Zeiger and Farber found that 43.8%

agreed and 30.1% participants strongly agreed that it was easy to be heard, and

participants reported that they benefited working with others (69.3%) and that group

generated ideas were preferred over ideas generated alone (71.2%) (p. 403).

Furthermore, 71.2% of the participants showed an interest in the group earning good

grades. The connectedness and interdependence felt among the students in the case study

may be ported to their willingness to engage each other in a democratic manner as civic

awareness increased through various project using the MUVE, a Wiki, and online polls

(p. 407). To address this connection, Zeiger and Farber reported that 48.7% of the

participants would be inclined to engage in more online polls, and 50.7% of the

participants recognized that the online polls used in the case study significantly impacted

the project; which helped students ascertain the value of every vote in a democracy and

become more "civic-minded" (p. 407). Although the study was not designed around

global collaboration, the researchers Zeiger and Farber demonstrated the value in online

social media for increased collaboration and civic-mindedness. However, a gap in the

literature is found with respect to global collaboration, social media use, and digital

citizenship as applied to educational settings.

Callaghan and Bower (2012) conducted a comparative case study and surveyed

48 high school students spanning two classes on their use of social networking sites (p.

1). Surveys including closed and open-ended questions were used to measure students'

perceptions about social networking sites in a general manner as well as students'

perceptions about Nings specifically (p. 5). Nings were used to house several lessons across two classes and that the outcomes were strikingly different was not necessarily attributed to the Ning or social networking sites (p. 14). Rather, teacher presence and involvement influenced student performance in the Ning such that a lack of teacher presence and involvement resulted in infrequent work submissions whereas frequent teacher presence and involvement resulted in greater positive academic outcomes (p. 14). Other factors influencing student achievement not related to the Ning included "teacher-student relationships, establishing expectations, classroom implementation and the nature of online teacher intervention could facilitate a positive classroom climate that enhanced overall student engagement and learning" (p. 14). It was found that social networking sites "enabled self-directed learning," "promoted motivation and engagement," "promoted social rapport" (p. 15).

Two additional studies provide further illumination on the use of the Internet as well as the use of social media among high school students. Johnson (2010) surveyed 91 students aged eight to twelve years old spanning grades three through six on their use of the Internet (p. 36). Parents and teachers were also surveyed on their children's and students' use of the Internet. Data on students' social, emotional, physical, and cognitive development were gathered. Johnson found that students' Internet use was "positively correlated to social development" (p. 40). Furthermore, Johnson posited that the use of the Internet as a communications medium may result in "increased physical activities" as a result of "environmental stimulation" (p. 40). Students' use of the Internet outside of school, or at home, was perceived by teachers as having more social contacts than those

who did not (p. 40). Teachers also perceived students' Internet use in general as having a positive cognitive effect for students (p. 40). In a survey of 504 high school students Wohn, Ellison, Khan, Fewins-Bliss, and Gray (2013) found that social media played an influential role in determining the expectations of success in college and the college application efficacy for first-generation college students (p. 434). First-generation college students are defined as those "whose parents did not graduate from college" (p. 424). Wohn et al. found that the social capital derived from social media network connections positively influenced first-generation college students' expectations of success in college and the college application efficacy, but the same did not hold true for non first-generation students (p. 424).

The above research findings indicate that social media of various types are being used to support collaborative learning among K-12 students. In many cases, however, digital citizenship is not addressed. With the emphasis on using technology to support collaborative learning in education, concern for the appropriate use of technology for learning has been voiced in the literature. Ribble created his nine elements of digital citizenship to address this issue; but more research in this area is needed as the appropriate use of social media for global collaborative learning in support of digital citizenship is nearly absent from the literature.

Social Media, Digital Citizenship, and College Students

The literature included several studies on the use of social media in higher education to promote collaborative learning. Specific types of social media included in this discussion include: Wikis, Facebook, Twitter, MySpace, massive open online courses

(MOOCs), and social multimedia systems (SMSs). Social media was also used as a general term for various types of social networking tools.

Wiki. In a study on using Wikis as a democratic learning environment among 180 graduate students, Bhattacharya (2011) found that students noted that they found the project "liberating," and enjoyed the freedom associated with less structure in the learning process (p. 52). Using Wikis for democratic learning was approached with caution to avoid silencing the voices of others, and no participants in the study edited the works of others within the Wikis (pp. 53, 55). A small portion of the group (16 participants) noted that their bonds with other team members persisted beyond the endpoint of the class (p. 56). Bhattacharya encouraged students to use varied information resources to help students relate the course concepts to meaningful representations of information that were not necessarily rooted directly in or derived directly from the course materials (p. 56). In doing so, students were able to learn about course concepts in ways that were meaningful to them (p. 57). Students used cartoons, Wordles, and comedic scripts to help them learn about course concepts (pp. 56-58). Bhattacharya noted that students created meaning in a variety of ways and those variants should be recognized and legitimized as students "come to know and understand their world" (p. 59). Students used Wiki social media technology to facilitate a community of practice where democratic and collaborative learning was realized (pp. 59-60). Bhattacharya noted that "For collaborative learning to occur using wikis, some ground rules need to be established in term of the possibilities and barriers of collaboration, hearing multiple voices, and constructing knowledge together" (p. 60).

Muñoz (2012) surveyed 48 college students using a pre-assessment tool at term start, and surveyed college 42 students using an outcomes assessment tool at term end in a case study. Muñoz probed students for their perceptions and attitudes about Wiki technology prior to and after participants engaged Wiki technology in a collaborative research project. Muñoz found that students did not see Wikipedia and the overarching term or technology known as Wiki as the same type of social media (p. 22). Also, Muñoz found that by participating in the Wiki project students' digital literacy and understanding of Wiki technology, Wiki etiquette, uses of Wikis, and the appropriateness of Wikis in school and business settings increased (pp. 23-24). Also, 81% of participants favored using Wiki technology to create an annotated biography, and 86% of participants included more research references due to using Wiki technology. Furthermore, some barriers included commenting, feedback, trusting content, and technical issues associated with using Wikis for educational uses (p. 24).

In a mixed methods study on collaborative projects as a methodology for enhancing students' digital competences, Pérez-Mateo, Romero, and Romeu (2014) surveyed 1,887 students at the Open University of Catalonia and incorporated Wikis to house students' collaborative projects (pp. 15, 18). Pérez-Mateo et al. found that

> 98.75% of the students (a total of 711) perceived to have developed to a higher or medium degree of the competence related to the acquisition of a civil digital attitude... among the set of values that stand out: commitment, transparency in the interchange of information and the expression of ideas, persistence and respect as basic attitudes in a virtual collaborative environment. (p. 20)

Pérez-Mateo et al. also found that "97.2% of the students (a total of 700) value the fact that they have developed skills linked to team-working online to a high or medium degree" (pp. 20-21), and "94.5% of the students value positively the degree of usefulness of such competences for the completion of other subjects at the UOC" (p. 21). The collaborative methodology used by Pérez-Mateo et al. yielded statistically high rates of student growth in terms of students' digital competencies and digital literacy. As Pérez-Mateo et al. noted, students developed civil digital attitudes and developed digital team-working skills using the collaborative Wiki project (p. 20). Teachers were also found to play a key role in students' development of digital competences "through the follow-up of groups in an active, accessible and personalised [sic] way" (p. 22). Although it does appear that the collaborative methodology employed in the work of Pérez-Mateo et al. proved useful for enhancing students' digital competences and digital literacy, whether the findings of this study apply to globally collaborative educational projects involving middle school students is unclear. Whether the findings may assist middle school students taking on the roles associated with digital citizenship is also unclear.

Facebook. Tervakari et al. (2012) conducted a mixed methods case study involving 35 university students. The purpose of the study was to consider the utility of social media when used in a collaborative peer learning environment. Although collaboration was minimal, students' passive participation in the form of reading the posts made by others contributed to students' learning (p. 40). Rambe (2012) conducted a virtual ethnography case study including 165 students enrolled in three freshman information systems courses at a South African university (pp. 135-136). Facebook was

incorporated into the courses as a cognitive scaffold as well as to accommodate varied

learning styles (p. 136). Rambe found that Facebook provided a forum that was free

from instructor mediation and students felt at ease critiquing the institution, instructors,

lectures, and assessments. Students also used Facebook to clarify assignment

instructions, ferret out solutions, and collaborate with each other in a manner that

suggested students took ownership of their learning (pp. 137-140). Rambe noted that

some technologies such as Facebook are considered by some as disruptive technologies.

However, Rambe found that disruptive technologies and the disruptions they create can

yield positive educational experiences (p. 144). Students can use technologies such as

social media to vent about their educational experiences, and doing so can foster

engagement among learners as well as minimize the formality of learning to create a

more relaxed learning atmosphere (p. 144).

Meishar-Tal et al. (2012) conducted a qualitative pilot case study involving 43

graduate education students on the use of Facebook as an alternative to traditional

learning management systems (LMSs). Meishar-Tal et al. found that Facebook served as

a "dynamic learning environment" (p. 44) that "promote[d] collaborative and active

learning" compared to the static nature of traditional LMSs (p. 44). Meisher-Tal et al.

suggested that several factors can positively influence the use of Facebook as an

alternative to traditional LMSs. For example, how social media tools are used and how

information is presented within them as well as the teacher's role, student motivation, and

the integration of Facebook as a core component of the course including the final grade

can help students achieve success (p. 45). Meisher-Tal et al. proposed the use of varied

"models of teaching," but learning theories such as connectivism might add additional clarity to the use of social media as alternative learning environments.

Barczyk and Duncan (2012) conducted a quantitative case study where an undefined number of college students enrolled in four graduate international business courses were surveyed. Two courses included the intervention of social media use and two served as the control group where the social media component was not included. The intervention was the inclusion of Facebook most significantly, and to a lesser extent YouTube, into the student learning experience. Barczyk and Duncan cited international trade, culture, and human resource management as topics appropriate for international business courses where social media is used (pp. 110-114). The results of the study indicated that four out of five survey items associated with learning, satisfaction, and connectedness each were higher for students whose courses included the use of social media compared to those students whose course did not include social media (pp. 116-117). Students also reported a greater interest in taking additional courses with the same instructor as well as reported having learned more when social media was used in the course compared to those students for whom social media was not included in their course (pp. 116-117).

Twitter and other social media. Several studies included a combination of social media or other types of social media relevant to my study. For example, Bati and Atici (2010) surveyed 414 Turkish university students in a descriptive quantitative study on the use of Web 2.0 tools and students' perceptions of online identity. Bati and Atici found that all participants knew of Facebook and Twitter whereas 81.2%, 62.5%, and

42.6% of participants used Facebook, Twitter, and MySpace respectively (p. 3686).

Considering the study results associated with the formulation of identity online when

using social media sites 74.2% of participants use Web 2.0 tools to identify themselves,

82.4% believe that communicating online is as real as communicating with others offline,

74.6% could not do without communicating online, 81.1% use Web 2.0 tools to *stay in*

touch with friends, 65.6% use online profiles to authenticate their identities, 71.7% note

their personality is available, 82.3% connect with *special groups or communities* online,

87.8% consider Web 2.0 environments to allow for "freedom of saying," 86.4% bring

real-world real-life topics to their online conversations exclusively, 67.1% maintain one

personality that spans online and offline environments, and 84.8% integrate their use of

Web 2.0 tools as part of their lifestyle (p. 3687). Bati and Atici's findings indicate that

their research participants use Web 2.0 tools frequently and those tools are part of their

daily lives without distinction made between online and offline environments.

Junco, Elavsky, and Heiberger (2012) surveyed 118 college students in a mixed

methods controlled experimental study (p. 3). Their study aimed to test causality

between Twitter use and student engagement and grades (p. 3). Junco et al. found that

students' mandatory use of Twitter and faculty's frequent engagement using Twitter

resulted in increased levels of student engagement and grades (p. 11). The same outcome

did not materialize when the use of Twitter was not mandatory and when faculty

engagement using Twitter was infrequent. Junco et al. found that when Twitter was used

by faculty to support students' learning, and when faculty engagement is frequent,

students' grades improved (p. 11). The study results indicated that mandatory use of

Twitter along with careful integration into course design, and frequent faculty engagement using Twitter lead to increased academic outcomes (p. 12).

In a phenomenography involving ten teachers and staff from seven institutions of higher education within the United Kingdom and Scotland (pp. 306, 308), Nerantzi (2012) found that the participants supported working with individuals from other institutions as well as supported learning in a multi-disciplinary manner (p. 309). Nerantzi noted that MOOCs have become popular as they afford a diverse set of perspectives in a learning environment (p. 309). Furthermore, Nerantzi found that open and cross-institutional learning resulted in increased learner motivation, action, and responsibility (p. 312).

Zhuhadar, Yang, and Lytras (2013) surveyed 800 college students and 235 faculty members about their perceptions on the use of social multimedia systems (SMS) in educational settings (p. 378). Zhuhadar et al. (2013) found that students' use of mobile devices and students' inability to cognitively process lengthy video content resulted in students' preferences for smaller chunks of information, such as in the case of 20-minute videos versus lengthier videos (pp. 379-380). Zhuhadar et al. found that students perceived positive benefits from the use of SMS in learning engagements as SMS: "contributed to their success" (> 70%); "improved their grades" (> 70%); increased coverage of materials (> 70%); "increased their depth of learning" (> 70%); "increased their ability to focus on the most important learning objectives in their courses" (> 60%); "motivated them to study" (> 60%); "impacted the effectiveness of studying" (> 60%) (pp. 384-385).

Poellhuber and Anderson (2011) conducted a case study involving 3,462 students enrolled in four distance education programs from four Canadian institutions of higher education. The purpose of the study was to determine students' readiness and willingness to collaborate using social media. Males were reported to have higher expertise levels than females across nearly all social software considered in the study (p. 114), and males were reported to have a greater interest in using social software for educational purposes overall (p. 115). Age was an indicator of interest in use of social media for educational purposes as interest increased with age overall (pp. 116-117).

Dabner (2012) conducted a qualitative case study involving two employees from the University of Canterbury, Christchurch, New Zealand. Dabner investigated how Facebook was used in an educational setting to inform university students and employees during a time of crisis. In this example, the crisis stemmed from an earthquake. Dabner's findings indicated that social media, in particular Facebook, proved useful in a crisis event. Facebook was found to support collaboration in a time of crisis, institutions of higher education can benefit from social media, and students will use social media if they see benefits in doing so (p. 76). Dabner issued a slight caveat and noted that the use of social media must be accompanied by a "clear purpose" in the overarching institutional information management directive of a given institution (p. 76).

Social Media and Business

This literature review established that the use of social media is prevalent in education, but educators and other stakeholders have much work ahead of them in terms of realizing the benefits of social media in educational settings. Bhattacharya (2011)

contended that "As the pressure to offer online courses increases, the role of wikis and other social networking tools needs to be explored vigorously so that these tools can be grounded pedagogically when integrated in higher education" (p. 60). The use of social media in education is justified from an industrial perspective as Barczyk and Duncan (2012) posited that

> Businesses are already utilizing social media and drawing benefits from its use. Whether used for international trade, cultural awareness, or expatriate selection, its broad scope allows for creative implementation. The gap between business implementation and academic use must be bridged to help make social media a best practice. (p. 117)

Additionally, social media and social networking sites play an important role in industry and as Barczyk and Duncan (2012) noted, "Web 2.0 and technology in general are the primary drivers of globalization" (p. 118) and that "Almost every industrial and service sector of the world uses social media" (p. 117). However, students may not be aware of the importance of appropriate use of technology as Ribble and Miller (2013) observed

> many students are using technology without awareness of technology use etiquette and/or Digital Citizenship requirements...as the likelihood of a multi-generational work force in schools increases, training in digital citizenship will be needed for all groups—faculty members, students, and community members. (p. 140)

Ribble's comment supports the need for digital citizenship awareness as technology is used by most members of society including preschoolers, K-12 students, and adults.

Social media is important part of industry and requires the ability to use technology appropriately in a professional setting (Cross-Tab Commission, 2010; Dabner, 2012; Hazari & Brown, 2013).

Reflecting on the use of social media to positively enhance and scaffold middle school students' perceptions of digital citizenry for positive academic achievement when engaged in global collaborative projects in education, few articles presented globally collaborative educational initiatives for middle school students. They did not present findings that included or were guided by digital citizenship themes. Students were afforded opportunities to interact with students from foreign cultures in some research findings, but the study did not include digital citizenship themes. In the case of blogs, virtual worlds, and local collaboration, students benefitted from the use of social media in various ways, but the influence of digital citizenship was missing from all but one research finding. Where digital citizenship was indicated, it was not based on Ribble's nine elements of digital citizenship. Furthermore, a global collaborative perspective was not used in the study. Whereas other studies cited benefits of online activities and the use of the Internet, they were not driven by digital citizenship themes nor were they designed around a global perspective. Where college students' use of social media for positive educational outcomes is concerned, students favored the use of social media in their classes. Various social media technologies were used in creative ways, and social media were found to promote more effective learning for a variety of reasons. How the findings apply to middle school students is unclear, but they provide findings that may be used to frame additional studies involving middle school students. The college studies are not

rooted in a global perspective nor are they framed in a digital citizenship perspective. As such, a gap was found in the literature.

Teachers' Perceptions of Integrating Digital Citizenship, Social Media, and Global

Collaboration in the Middle School Curriculum

The fourth research question asked "What are teachers' perceptions regarding the integration of digital citizenship, global collaboration, and social media into the middle school curriculum?" The literature did not address teachers' perceptions on integrating the combined constructs of digital citizenship, global collaboration, and social media into the middle school curriculum. Few studies provided insight on teacher, preservice teacher, and university faculty perceptions of including social media in educational settings as well as their preparedness to do so. Zhuhadar et al. (2013) surveyed 800 college students and 235 faculty members about their perceptions on the use of social multimedia systems (SMS) in educational settings (p. 378). The authors found that using SMS had the following impacts based on teachers' perceptions: increased satisfaction among faculty and students (> 70% each): "increased the degree of collaboration between students" (> 60%), "increased the ability for students to focus on the most important learning objectives" (> 70%), impacted student grades, comprehension, enthusiasm, student engagement, and motivation (> 60% each), and impacted student retention and reduced student stress (> 40% each) (pp. 381-383). Also, 91% of faculty members expressed interest in using SMS in future courses (p. 384). In contrast, Pusey and Sadera (2012) surveyed 318 preservice teachers on their knowledge about and ability to teach cyber ethics, cyber safety, and cyber security; which are part of Ribble's nine elements of

digital citizenship model. Pusey and Sadera found that despite being digital natives the

participants were unable to teach anything more than 4% of the 75 topics surveyed (p.

87). Additionally, the participants indicated they were uninformed about the threats

students encounter outside of the school as well as were unable to identify risks "in

digital environments that can indicate threats to themselves, their students, and the

environments where they work and learn" (p. 87). Based on Pusey and Sadera's findings,

the preservice teachers included in their study were not in a position to help students

learn about the privacy concerns associated with digital citizenship. Considering

Zhuhadar et al.'s findings, teachers provided perceptions on integrating social multimedia

systems into educational settings and the results were favorable overall. However, the

study did not include data on global collaboration or digital citizenship. In a case study

involving 185 prospective teachers Sincar (2013) found that inappropriate behavior was

exhibited by prospective teachers when using social media and digital devices, and

suggested that prospective teachers do not yet possess a command of digital etiquette

norms; which places them in a precarious position if they are to teach students the tenants

of digital citizenship and serve as role models for the same (p. 10). Crichton et al. (2012)

conducted a study on using mobile technology devices including the iPod Touch and iPad

in a Canadian school district. Participants included students, teachers, and IT support

staff. Findings included shifting and expanding roles for teachers as they learned how to

manage the devices and content on the devices. Teachers also learned how to manage the

applications. Assessment and collaboration using mobile technology devices also served

as learning hurdles for teachers (p. 28). Crichton et al. stipulated that teachers take on the

role of learner and must be provided an introduction to new technologies prior to implementing their use in the classroom (p. 29).

Based on the findings above, although teachers may be using social media in their classrooms and although many preservice teachers may be described as "digital natives" (Prensky, 2001), teachers were not prepared to help students take on the role of digital citizens nor were they prepared to help students learn in globally collaborative settings using social networking sites. Teachers' perceptions on integrating digital citizenship, global collaboration, and social networking sites into the curriculum are not found in the literature. Teachers may need support and training on integrating into the curriculum the constructs of digital citizenship, global collaboration, and social networking sites. Teachers may be able to use Ribble's nine elements of digital citizenship as well as Siemens's connectivism to help students prepare for their roles as digital citizens. Reimer and Reimer (2012a) noted that "Students seem to be ahead of the curve technologically in many ways. However, they are not the experts in critically analyzing purpose, source, and validity of the technology they are using. This will continue to be the role of the teacher in the classroom – to serve as a model and guide for appropriate use" (p. 2217). Additionally, Reimer and Reimer (2012b) posited that

> If students need to be prepared to enter the workforce and be citizens who are literate in digital technologies as educated users, this has implications for teacher education as well as for practicing teachers. It is extremely important as teacher we can guide our students, pre-service teachers and colleagues, not only by

imparting knowledge about content but how to create and design instruction that

is engaging, motivating, and authentic. (p. 3752)

Ribble and Miller (2013) pointed to educators as having the responsibility to educate

students on appropriate use of technology

Technology users of all ages are now reaping the benefits, as well as the

problems, that go along with more than a decade of rapidly increasing technology

advances, without direction about appropriate use. Educational leaders have a

responsibility as protectors of students, and as such can become part of the

problem, if they do not take proactive steps to begin finding solutions to

cyberbullying and other technological issues. (p. 136)

Furthermore, the implications associated with technology use are multidimensional for

students, but whether teachers are prepared to educate students about the benefits and

potential negative aspects of technology use in and out of the classroom is questionable

as Ribble commented

As a result of non-action by parents and other members of the community, K-20

schools become the gatekeepers and must educate students, parents and

community members about these skills. As technology use increases, the school-

related issues also increase. One key issue is the lack of understanding related to

training students, staff, and faculty members in the appropriate use and etiquette

for social media and ways to avoid or stop cyberbullying. A second issue that is

continuing to grow is how technology has begun to affect students in other

aspects of their lives as well (e.g., health, safety, and respect for others). (p. 136)

Using Reimer and Reimer's assessments and Ribble's assignment of responsibility to teachers, a need to understand teachers' perceptions on integrating digital technologies into the curriculum, and specifically those aspects related to digital citizenship, global collaboration, and social networking sites, to benefit students today and beyond is warranted. This need is present but not answered in the literature at this time. My study addressed the gap associated with teacher perceptions on integrating digital citizenship, social media, and global collaboration in the middle school curriculum.

Summary

The focus of this literature review was to explore the integration of digital citizenship, social media, and global collaborative projects in the middle school curriculum. Students' misuse and abuse of technology included the following themes: digital security, digital literacy, digital reputation, digital communication, digital etiquette and morality, and cyberbullying. Barriers to and strategies for overcoming barriers associated with students becoming digital citizens, and teachers' perceptions on digital citizenship were also included. The conceptual framework undergirding the literature review included Ribble's nine elements of digital citizenship, and Siemens's theory of connectivism.

It was not known how digital citizenship, social media, and global collaborative projects can be used to scaffold middle school students' learning and willingness to take on the roles associated with digital citizenship. How students and teachers overcome barriers associated with middle school students taking on the roles of digital citizenship was not defined in the literature. Middle school teachers' perceptions about and

familiarity with integrating digital citizenship into the middle school curriculum when combined with global collaboration and social media were missing from the literature.

I filled in this gap in the literature by conducting a qualitative case study where middle school teachers and a project administrator were interviewed for thick, rich descriptions about their perceptions on the development of digital citizenship in middle school students. The case study tradition was selected because the research questions asked questions associated with a contemporary complex social phenomenon associated with real-life events. This research contributed to the field of educational technology by gleaning insights from middle school teachers and a project administrator about how digital citizenship, social media, and global collaboration can be combined to help students and teachers become responsible users of technology as digital citizens interacting in a globally networked society. A review of the methods for conducting this study appears in Chapter 3.

Chapter 3: Research Method

The purpose of this qualitative case study was to explore perceptions of middle school teachers on their students' growth as digital citizens while participating in a digital citizenship project using global collaboration and social media. Seven middle school teachers and one project administrator were interviewed about middle school students' willingness to take on digital citizenship roles, how students overcome barriers associated with students taking on digital citizenship roles, and how the use of social media can help students take on digital citizenship roles when engaged in global collaborative learning projects. This study also explored teachers' perceptions on integrating digital citizenship into middle school curriculums and how the nine elements of digital citizenship may be leveraged to help students use technology ethically and responsibly. This chapter continues with the following major sections: research design and rationale, role of the researcher, methodology, issues of trustworthiness, and summary.

Research and Design Rationale

The research questions driving this qualitative case study included:

Research Question 1: What are teachers' perceptions about middle school students' development as digital citizens when engaged in global collaborative projects?

Research Question 2: What are teachers' perceptions about strategies middle school students used to overcome barriers to taking on the roles associated with digital citizenship when engaged in global collaborative projects?

Research Question 3: What are teachers' perceptions about the use of social media and global collaborative projects to enhance middle school students' digital citizenship and academic achievement?

Research Question 4: What are teachers' perceptions regarding integrating digital citizenship, social media, and global collaboration in the middle school curriculum?

The central concepts that undergirded this qualitative case study included digital citizenship, global collaboration, and social media. Middle school students use social media to communicate with each other in and out of the classroom. Also, the rate at which technology evolves leaves a gap in practice with respect to how education as a societal institution keeps pace with new technologies. Students have been cited as misusing and abusing technology to the extent that it causes them and others harm. The potentially negative effects of technology misuse and abuse can be quite serious as in the case of cyberbullying and cybervictimization, and may last for a lifetime due to the persistence of data in electronic format. In an effort to reach students on familiar grounds, educators have been assigned the task of educating middle school students on new technologies, including social media, due to students' widespread use of social media tools outside of classrooms (Ribble, 2011, p. 12). Furthermore, social media tools may be leveraged to yield positive educational and societal outcomes. To reap such positive outcomes, the nine-element digital citizenship framework as outlined in Ribble (2011) and connectivist learning theory as outlined in Siemens (2005a) were selected as lenses through which understanding was garnered about how and why students can

become ethical, moral, and responsible users of global social media technologies as well as ethical, moral, and responsible digital citizens of a highly networked global society.

To facilitate an exploration into "how" and "why" digital citizenship, social media, and global collaboration can be integrated into curriculums to elicit positive social change, I selected the qualitative case study tradition to help answer those types of questions (Yin, 2014. pp. 2-13). Case studies are appropriate when seeking a deeper understanding of "complex social phenomena" that is oriented in current "real-life events" (Yin, 2009. p. 4) or within a "real-world context" (Yin, 2014. p. 2). In this qualitative case study, the contemporary phenomenon of middle school teachers' and administrators' experiences with integrating digital citizenship, social media, and global collaboration in educational settings were explored. Specifically, teachers and administrators who participated in the Flat Connections Digiteen and Digitween Wiki Project that promoted global collaborative learning and global digital citizenship by connecting students and teachers using social media technology were interviewed (Lindsay & Davis, 2013, pp. 4-12).

The case study research tradition is appropriate when the "researcher has little or no control over behavioral events" (Yin, 2014. p. 2). This feature of case study research aligned with my study as I did not observe any individuals directly and did not possess the means to control or otherwise influence participants in a natural or live classroom setting. Further, a holistic single-case study was used as the phenomena of digital citizenship, global collaboration, and social media were explored as a comprehensive

interrelated phenomenon rather than investigated as sub-units as would be the case in an embedded case study design (Yin, 2014. p. 55).

The Flat Connections Digiteen and Digitween Wiki Project as a case was examined through a composite lens of multiple data sources including teachers, administrators, and Flat Connections Digiteen and Digitween Wiki Project artifacts. The incorporation of multiple sources of data permitted the compilation of thick, rich accounts of the digital citizenship, global collaboration, and social media phenomenon in a contextualized format (Geertz, 1973, p. 14; Rich, 2012. p. 1; Schonfeld & Farrell, 2010, p. 188). The incorporation of "multiple sources of evidence, with data needing to converge in a triangulating fashion" is a strength of the case study research tradition (Yin, 2009. p. 18). Triangulation permitted the compilation of rich, "detailed observational evidence" (Yin, 2014, p. 19) of the "phenomenon being studied" (p. 24), in this case, digital citizenship, global collaboration, and social media as situated in a contextualized educational setting. Qualitative case study research may be used when the number of variables of interest is greater than the number of data points available as in the case of this study were the number of participants and data points are fewer than the number of variables associated with the research questions (Yin, 2014, p. 17).

Yin encouraged case study researchers to avoid altering the premise of the study and take an objective approach to the study (p. 20). Generalizing the results of case studies should be approached with caution as "case studies, like experiments, are generalizable to theoretical propositions and not to populations or universes. In this sense, the case study, like the experiment, does not represent a sample, and in doing case

study research, your goal will be to expand and generalize theories (analytic generalization) and not to extrapolate probabilities (statistical generalizations)" (p. 21). The level of effort and time needed to conduct case study research may be considerable, but Yin (2014) noted that this is not necessarily true of contemporary procedures associated with conducting case study research (p. 21). Furthermore, Yin noted that "you could even do a valid and high-quality case study without leaving the telephone or Internet" (p. 21). Finally, case study research may offer a comparative advantage over experiments as they help answer "how" and "why" questions; which may be difficult to achieve when engaging in experimental research designs (p. 21).

A single case study research design was selected over a multiple case study design because the participants came from the same originating case in which they participated. A single "common" case study research design was used as technology use, misuse, or abuse in educational settings is common (Yin, 2014, p. 52) and occurring at increasing rates, is a contemporary phenomenon, and does not mediate behavioral events (Yin, 2014, p. 9). The phenomenon of technology use, misuse, or abuse is relatively common in educational settings, but how digital citizenship, global collaboration, and social media can be used to promote socially responsible uses of technology and pro-social digital citizenship behavior among middle school students remains unanswered.

Yin noted that "the conduct of a multiple-case study can require extensive resources and time beyond the means of a single student or independent research investigator. Therefore, the decision to undertake multiple-case studies cannot be taken lightly" (p. 57). This rationale was helpful in selecting a single case study design. Yin

offered that "*a major insight is to consider multiple cases as one would consider multiple experiments*—that is, to follow a "replication" design" (p. 57). This notion further cemented my decision to conduct a single case study design as multiple cases may not offer any additional value to the study. Indeed, Yin clarified that "the rationale for single-case designs cannot usually be satisfied by multiple cases" (p. 57).

A holistic single-case study was used as digital citizenship, global collaboration, and social media were examined as a comprehensive interrelated phenomenon rather than investigated as sub-units as would be the case in an embedded case study design (Yin, 2014. p. 55). No clear sub-units were applicable to this study. When using a holistic case study design, Yin suggested that the case study may transform and thus a new orientation toward the research questions may emerge (p. 55). This phenomenon is both an attribute and a criticism of a holistic case study design (p. 55). Alternatively, an embedded case study design may remain too focused on the embedded subunits where a change in focus materializes when "the subunit level…fails to return to the larger unit of analysis" (p. 55).

The qualitative tradition of phenomenology was considered as an alternative qualitative tradition to the case study tradition. Moustakas (1994) noted that in phenomenological research

> The aim is to determine what an experience means for the persons who have had
> the experience and are able to provide a comprehensive description of it. From
> the individual descriptions general or universal meanings are derived, in other
> words the essences or structures of the experience." (p. 13)

Furthermore, "The understanding of meaningful concrete relations implicit in the original description of experience *in the context of a particular situation* is the primary target of phenomenological knowledge" (Moustakas, 1994. p. 14). I rejected phenomenology as a qualitative research tradition as individuals' experiences and their perceived meanings were not the objective of my study. Rather, the qualitative case study tradition was appropriate for my study as multiple sources of data were pursued, and a specific and contextualized program/theme was examined rather than the interpretation of individuals' experiences.

Grounded theory research was considered as a qualitative tradition but was rejected as I was not looking to discover theory from data (Glaser & Strauss, 1967, p. 1) nor was I focused on developing a theory (Strauss, 1987. p. 5) at an abstract level (Strauss, 1987. p. 243). My study included a single primary data gathering episode or interview for each participant. My research was not designed to formulate theories. Instead, teachers' perceptions were gathered on the topic of digital citizenship, global collaboration, and social media to better understand how digital citizenship can be used in education to help students use technology in socially responsibly ways.

Ethnographic research was considered as a qualitative tradition but was rejected as I was not researching "the ways of life of the writer and those written about" (Denzin, 1997. p. xi) nor was I researching "epiphanal moments in people's lives" (p. xvii) or "the agonies, pains, successes, and tragedies of human experience" or "the deeply felt emotions of love, dignity, pride, honor, and respect" (p. xiv). Specific lifestyles, cultures, and turning points were not targeted in my research design, nor were prolonged

observations in the natural setting of specific cultures needed in my research design. As life histories were not the focus of my research, the ethnographic qualitative tradition was rejected. Teachers' perceptions on digital citizenship, global collaboration, and social media were gathered to better understand how digital citizenship can be used in education to help students use technology in socially responsibly ways. Capturing deep emotions and life epiphanies did not apply to my study.

The Flat Connections Digiteen and Digitween Wiki Project was examined through a composite lens of multiple data sources including interviews with seven teachers and one project administrator, and an analysis of Flat Connections Digiteen and Digitween Wiki Project artifacts. Purposive sampling was used to select seven teachers who participated in the Flat Connections Digiteen and Digitween Wiki Project. Teachers were interviewed in addition to the project administrator using phone and Skype interviews. Additional data were gathered from Flat Connections Digiteen and Digitween Wiki Project artifacts such as project deliverables and social media historical data as preserved in project Wikis.

Role of the Researcher

My role as researcher assumed the non-participant and non-observational perspectives as I was not integrated into, did not participate in, and did not observe the natural setting in which participants operated. I interviewed research participants from afar using Skype and/or telephone as needed. Investigation of Wiki artifacts such as project deliverables, communications, and final projects took place virtually through electronic means. I had no prior knowledge of or personal or professional relationships

with the intended study participants. I had no power or authority over any of the intended participants.

Prior research on and experience with social media technologies steered me toward investigating digital citizenship, global collaboration, and social media in educational settings. As a student studying educational technology, I found value in the use of social media technologies in educational contexts. However, I bracketed my interest in the theme by reflecting on the notion that technology such as social media can negatively impact students and their educational performance. I kept an open mind and perspective to allow for contrary findings to avoid introducing bias in this research study (Yin, 2014. p. 70).

Methodology

Contained in this section are the components that comprise the methods used to recruit and interview human subjects. Instruments containing the protocols used with human subjects as well as Wiki data are discussed. A data analysis plan concludes the methodology associated with this study on teachers' perceptions of students taking on the roles associated with digital citizenship.

Participant Selection Logic

A purposive sampling strategy was used as qualitative researchers target specific sources of data such as human beings, documents, and artifacts to examine a specific problem deeply and to help answer the study's research questions (Bailey, 2007. p. 64). Regarding sample size, Sandelowski, Docherty, and Emden (1997) offered that "As in any kind of qualitative research, overly large sample sizes tend to impede deep analysis

and, therefore, threaten the interpretive validity of findings." (p. 368). Yin noted that

with respect to sampling for multiple-case designs, "Your judgment will be a

discretionary, not a formulaic, one" (p. 61). Eisenhardt (1989) suggested that "while

there is no ideal number of cases, a number between 4 and 10 cases usually works well"

(p. 545). I included a sample of seven middle school teachers and one project

administrator. This number of participants facilitated thick, rich feedback about the

problem as well as answers to the research questions to the point of saturation.

Participants were selected and recruited based on their participation in the Flat

Connections Digiteen and Digitween Wiki Project wherein digital citizenship, global

collaboration, and social media were used together in educational settings. The

administrator of the project was contacted using email to purposefully identify teachers

who had experience integrating digital citizenship, social media, and global collaboration

in middle school curriculums. I emailed potential participants a Letter of Invitation

outlining the procedures for voluntary participation in the study (Appendix A).

Instrumentation

Data collection instruments for this study included an interview protocol for

teachers (Appendix B), an interview protocol for the project administrator (Appendix C),

and a document protocol (Appendix D). The document protocol was used to inspect

social media histories and artifacts housed in the project Wikis associated with the Flat

Connections Digiteen and Digitween Wiki Project. Multiple instruments facilitated

triangulation and assisted with developing thick, rich accounts of the problem and

answers to the research questions. In developing the interview and document protocol, I

incorporated the use of the literature review and research questions to craft the interview questions, directly linking them to the research questions. I leveraged the literature review to develop document protocols and linked themes found in the literature review to the research questions.

Researcher Developed Instruments

The interview protocol took the form of an unstructured and open-ended shorter case study interview (Yin, 2014. p. 111). The literature review undergirded the development of the interview questions. The interview questions were administered to participants using Skype during individual 45 to 60-minute interviews. Interviewee's responses were digitally recorded, transcribed, and saved to a USB flash drive. The interview audio recordings and transcriptions were saved to my personal password protected laptop computer during data collection and analysis. The interview audio recordings and transcriptions were saved to a USB flash drive and remain stored under lock and key within a fireproof safe at my personal residence for a period of five years. In July 2021 the USB flash drive will be completely destroyed that contains the interview audio data and transcriptions.

Interviews assisted with answering Research Questions 1 through 4. Haynes, Richard, and Kubany (1995) provided the following description for content validity: "Content validity is the degree to which elements of an assessment instrument are relevant to and representative of the targeted construct for a particular assessment purpose" (p. 238). Considering content validity in the case of interview protocol as well as the document protocol noted in the following section titled *Procedures for*

Recruitment, Participation, and Data Collection. The interview questions were based on the current review of the literature, and were driven by what is not known in order to address the research problem and research questions.

Interview questions for each research question. By interviewing teachers about the Flat Connections Digiteen and Digitween Wiki Project, I gathered data about teachers' perceptions of students taking on the roles associated with digital citizenship when engaged in global collaborative projects. Data were gathered regarding barrier negotiation, use of social media and digital media, teacher feedback, and final project artifacts for evidence of teachers' perceptions about students and digital citizenship. Table 1 contains the interview questions ordered by research question.

Table 1
Research Questions and Associated Interview Questions

Research Question 1: What are teachers' perceptions about middle school students' development as digital citizens when engaged in global collaborative projects?

1. How would you describe your students' knowledge of digital citizenship and readiness to assume the roles of digital citizens at the beginning of the digital citizenship Wiki project?

2. What behavioral changes did you observe in students participating in the digital citizenship Wiki project?

3. How did students' perceptions of digital citizenship change after participating in the digital citizenship Wiki project?

4. How did students' willingness to become digital citizens change after participating in the digital citizenship Wiki project?

Research Question 2: What are teachers' perceptions about strategies middle school students used to overcome barriers to taking on the roles associated with digital citizenship when engaged in global collaborative projects?

1. Did the students face any barriers when collaborating with others in global projects? [If yes, use these follow-up questions]

   o Were any barriers too significant to be overcome?

      ▪ [If yes] Which barriers were insurmountable?

      ▪ Why do you think they were insurmountable?

   o How did students overcome the barriers faced when collaborating with others in global projects?

2. What did you do to try to help students overcome these barriers?

Research Question 3: What are teachers' perceptions about the use of social media and global collaborative projects to enhance middle school students' digital citizenship and academic achievement?

1. How did students use social media in the classroom?

2. How did students use social media out of the classroom?

3. How did students' perceptions of digital citizenship change when using social media for global collaborative projects?

4. How did social media and global collaboration affect students' academic achievement?

5. How did social media and global collaboration affect students' digital citizenship?

Research Question 4: What are teachers' perceptions regarding integrating digital citizenship, social media, and global collaboration in the middle school curriculum?

1. What did you find the benefits and challenges to be of infusing digital citizenship into the school curriculum?

2. How did your views on using social media in your classroom change as a result of this project?

3. How important is it to foster globally collaborative projects?

4. Describe the lessons you learned about students' perceptions of digital citizenship that might help you integrate digital citizenship into your school's curriculum in the future.

5. How did the digital citizenship Wiki project affect your students becoming socially responsible digital citizens?

6. What else would you like to add to this interview that I may have missed?

Documentation was incorporated into data collection procedures as Yin (2014) noted that "This type of information can take many forms and should be the object of explicit data collection plans" (105). Furthermore, Yin (2014) noted that "the most important advantage presented by using multiple sources of evidence is the development of *converging lines of inquiry*" (p. 120). By incorporating interview data and documentation, data triangulation was achieved as "the case study's findings will have been supported by more than a single source of evidence," thus establishing construct validity (p. 121). Documentation taking the form of electronic documents including social media Wikis used by students and teachers in the Flat Connections Digiteen and

Digitween Wiki Project was examined for themes associated with each research question.

Wikis maintain digital histories wherein user's actions are recorded in terms of additions, edits, and deletions. Such digital histories were used to mine data on students' perceptions of digital citizenship, barriers encountered by students when working with social media in educational settings, and students' reflections on global collaboration. Teachers' perceptions on the same were captured.

Student-created artifacts or project deliverables that materialized as a result of students having participated in globally collaborative projects as included in the Flat Connections Digiteen and Digitween Wiki Project were examined for digital citizenship preparedness, use of social media tools, and potential barriers associated with digital citizenship, global collaboration, social media, and instructor input and feedback. The social media histories and artifacts were examined over the course of two weeks, the data were recorded using screen captures, and the screen captures were saved to my personal laptop computer during data collection and analysis. The screen captures were saved to a USB flash drive and remain stored under lock and key within a fireproof safe at my personal residence for the period of five years. In July 2021 the USB flash drive will be completely destroyed that contains the social media history. The examination of social media tools assisted with answering Research Questions 1 through 4.

Procedures for Recruitment, Participation, and Data Collection

Interview protocol. The participants in this research study included seven middle school teachers and one project administrator who participated in the Flat Connections Digiteen and Digitween Wiki Project. Viable participants were identified by

the Flat Connections Digiteen and Digitween Wiki Project administrator who served in

the capacity of the gate keeper, and who provided the names to me. Emails were sent to

prospective participants inviting them to take part in the study. Participants were

informed that they can exit the study voluntarily at any point. Data were collected using

Skype or telephone interviews conducted by me, the sole researcher. Each participant

was asked to take part in an initial interview that lasted between 45 and 60 minutes.

After receiving permission from the participants, the interviews were recorded using

Skype or telephone and saved in the MP3 audio file format.

To protect participant privacy, pseudonyms were used to differentiate the

participants and interviews so information revealed by participants was not traceable to

specific participants. As a result, all information shared by participants was kept private

and did not interfere with participants' employment standing or career advancement

opportunities. Upon final dissertation approval, participants were notified by email of the

completion of the study and were provided the outcomes of the study in a 1-2 page

summation. Recruitment failed to yield enough participants, so a second invitation was

sent and the administrator of the project was asked for additional names from previous

Digiteen and Digitween projects.

Document protocol: Social media histories and artifacts. I sought permission

from the administrator of the Flat Connections Digiteen and Digitween Wiki Project for

access rights to the social media Wikis used in the Flat Connections Digiteen and

Digitween Wiki Project. The review of social media histories provided data associated

with the processes used and experiences had by those involved with the Flat Connections

Digiteen and Digitween Wiki Project. Such reflections were assimilated into the

appropriate categories to address the research problem and Research Questions 1 through

4. The data collection process for social media histories spanned two days, the data were

recorded using screen captures, and the screen captures were saved to my password

protected personal laptop computer during data collection and analysis. The screen

captures were saved to a USB flash drive and remain stored under lock and key within a

fireproof safe at my personal residence for a period of five years. In July 2021 the USB

flash drive will be completely destroyed that contains the screen captures.

Data Analysis Plan

Data analysis for case study research is largely missing in the literature, and

requires researchers to develop their own analytic rationale (Yin, 2014. pp. 133-135).

Rather than follow a specific set of guidelines, case study researchers rely "on a

researcher's own style of rigorous empirical thinking, along with sufficient presentation

of evidence and careful consideration of alternative interpretations" (p. 133). To

facilitate data analysis, I maintained a chain of evidence during data collection. To

maintain a chain of evidence I incorporated notes and meta data about evidence to

establish a logical progression from data inception to the conclusions made after the data

analysis phase has concluded (p. 127). A chain of evidence also facilitated backtracking

as well as provided descriptive details about data to provide clarity during multiple passes

through the data during the data analysis phase.

Memos and diagramming were used during the data collection and analysis

phases as memos and diagramming contain "hints, clues, and suggestions" that assisted

with "conceptualizing your data" to formulate a data analysis plan (Yin, 2014, p. 135).

Yin (2014) suggested that one approach to data analysis plan development is "Working

your data from the 'ground up'" where "playing with the data" can lead to the discovery

of themes and patterns in the data (p. 136). Yin suggested using one of five overarching

analytic techniques: "(1) pattern matching, (2) explanation building, (3) time-series

analysis, (4) logic models, and (5) cross-case synthesis" (p. 142). Identifying themes and

patterns in the data was pursued. In the data analysis phase, I strived for the highest

quality possible by using all data and evidence, accounting for plausible rival

interpretations, focusing on the most significant issues associated with the case study, and

by relying on my own experiences and knowledge (Yin, 2014. p. 168).

Coding. Data were analyzed manually to discover recurring themes in the rich

and detailed interview and other data. Using an iterative code generation process

working from simpler to more complex themes, codes were identified to match the

research concepts. I carefully and iteratively analyzed the research data to connect the

codes at a lower granularity to my research questions at a higher level of granularity (Yin,

2014, p. 34). This process essentially formed the basis of my analytic strategy where I

manipulated and analyzed the data searching for "patterns, insights, or concepts that seem

promising" (Yin, 2014, p. 135). Miles and Huberman (1994) suggested additional ways

to analyze case study data including arrays, displays, tabulations, memos, and diagrams

(p. 135). I used those techniques to uncover patterns and relationships in the data using

an inductive strategy where I started with the details and worked my way to broader

analytical generalizations that address my research questions (pp. 137-138).

Discrepant cases. One discrepant case was discovered in the study, was so noted, and was used to consider rival interpretations. The case held meaning for the study and was retained for the consideration of all data and evidence.

Document protocol: Wiki analysis. I reviewed Wikis created by each teachers' class as part of the Flat Connections Digiteen and Digitween Wiki Project (Appendix D). The data within the Wikis were reviewed for evidence of students taking on the roles associated with digital citizenship. The Wiki data were also evaluated for barrier negotiation, use of social media and digital media, teacher feedback, and final project artifacts for evidence of students' taking on the roles associated with digital citizenship.

Issues of Trustworthiness

Contained in this section are the following components of trustworthiness related to qualitative studies: credibility, transferability, dependability, and confirmability. The ethical treatment of human subjects as well as data storage procedures is discussed. The following is a summary of the issues of trustworthiness as they related to this study on teachers' perceptions of students taking on the roles associated with digital citizenship.

Credibility

Triangulation. By incorporating interview data and multiple types of documentation, data triangulation was achieved for the purpose of convergence and coherence across the "lines of inquiry" (Yin, 2014. p. 120). Multiple instruments including teacher interviews, an administrator interview, and an analysis of Wiki histories and artifacts facilitated triangulation and assisted with developing thick, rich accounts of the problem and data to answer the research questions.

Saturation. Corbin and Strauss (2008) noted that saturation is "the point in the research when all the concepts are well defined and explained" (p. 145) such that "no new data are emerging" (p. 143). Bailey (2007) noted that saturation occurs when "the "things to do" portion of your field notes grows relatively small" (p. 122). Eisenhardt (1989) suggested that "while there is no ideal number of cases, a number between 4 and 10 cases usually works well" (p. 545). To achieve saturation, a sample of seven teachers and one project administrator facilitated thick, rich feedback about the problem as well as assisted with answering the research questions. Interview data and Wikis were analyzed until themes and patterns are recurring and no new themes are emerging.

Transferability

Thick, rich descriptions. Transferability and analytic generalization were achieved by capturing rich, thick descriptions from interviewees during data collection using "how" and "why" questions (Yin, 2014. p. 48). Thick, rich descriptions help establish the context of a phenomenon (Geertz, 1973, p. 14) to find "commonalities that may exist among situations" and "to provide understanding of relevance to other settings" (Carlson, 2010, p. 1104).

Participant variation. Transferability was also achieved by varying participants for a well-rounded account of digital citizenship along with global collaboration and social media use in educational settings. Specifically, teachers from various countries were interviewed for maximum variation in perspectives and experiences to enhance transferability.

Dependability

   Audit trails. Yin (2014) suggested that to facilitate a case study being repeated by another researcher as well as to minimize errors and biases, the processes and procedures used in the original study are captured in as much detail as possible (p. 49). I used task-oriented audit trails to capture processes and procedures to achieve dependability.

   Triangulation. Multiple sources of data including teacher and administrator interview data, along with Wiki data were collected, analyzed, and cross-referenced to achieve convergence and coherence in the data. Triangulation enhances dependability by relying on multiple data points for an enhanced perspective on case phenomena or events.

Confirmability

   Lincoln and Guba (1985) described confirmability as "the extent to which the auditor examines the product—the data, findings, interpretations, and recommendations—and attests that it is supported by data and is internally coherent so that the 'bottom line' may be accepted" or simply the "accuracy of the product" (p. 318). A major component in establishing confirmability is to clarify researcher bias by taking a reflexive approach to confirmability. Reflexivity entails "examining how the researcher and intersubjective elements impact on and transform research" (Finlay, 2003, p. 4). Finlay (2003) contrasts reflection or "thinking about something after the event" to reflexivity that "involves a more immediate, dynamic and continuing self-awareness" (p. ix). I used audit trails, memos, and journals to reflect on my biases using a "critical gaze" (p. 3). Carlson (2010) suggested including "thoughts, feelings, uncertainties, values,

beliefs, and assumptions that surface throughout the research process" (p. 1104). By making my biases explicit, I facilitated an objective approach to this qualitative case study, thus enhancing confirmability.

Ethical Procedures

Prior to engaging human subjects, I sought IRB approval for human subject involvement. No communications with human subjects or reviews of archived data took place until IRB approval was received. Upon receipt of IRB approval, a letter of cooperation was sent to the owner of the Wikis associated with the Flat Connections Digiteen and Digitween Wiki Project. Upon receipt of the letter of cooperation, participants were contacted using email and provided an informed consent form that indicated the parameters of the study including but not limited to the voluntary nature of participating in the study, the option to withdraw from the study at any time, and the confidentiality and privacy associated with participating in the study.

To facilitate a timely transcription of audio recorded interview data, a confidentiality agreement (Appendix E) permitted Automatic Sync Technologies, LLC to transcribe the audio recorded interview data to text or readable document format. During the study, archival data contained in the Wikis associated with the Flat Connections Digiteen and Digitween Wiki Project and transcribed interview data were kept securely on my personal PC using password protection. Upon completion of the study all data were written to a USB flash drive and stored under lock and key within a fireproof safe at my personal residence for a period of five years. In July 2021 the USB flash drive will

be completely destroyed that contains the interview audio data, transcriptions, and Wiki history data.

Summary

Chapter 3 outlined the nature of this qualitative case study and included the research design and rationale, the role of the researcher, the methodology, issues of trustworthiness, and ethical procedures. The details included in Chapter 3 set the stage for the treatment of human subjects and data collection and analysis. Chapter 4 includes details about data collection, data analysis, evidence of trustworthiness, and results. Chapter 5 includes interpretation of the findings, limitations of the study, recommendations, and implications.

Chapter 4: Results

The purpose of this qualitative case study was to explore perceptions of middle school teachers on their students' growth as digital citizens while participating in a digital citizenship project using global collaboration and social media. This study explored teacher and administrator perceptions based on their participation in the Flat Connections Digiteen and Digitween Wiki Project in which digital citizenship was applied to global collaborative projects in education where student communications were facilitated using social media technologies. To derive meaning from teachers' and the administrator's experiences associated with their participation in the Wiki project, the conceptual framework was based on Ribble's (2011) nine elements of digital citizenship and Siemens's (2005a) theory of connectivism. Four research questions guided the exploration of teachers' and the administrator's perceptions associated with their participation in the Wiki project and its impact on the development of students as digital citizens.

Research Questions

Research Question 1: What are teachers' perceptions about middle school students' development as digital citizens when engaged in global collaborative projects?

Research Question 2: What are teachers' perceptions about strategies middle school students used to overcome barriers to taking on the roles associated with digital citizenship when engaged in global collaborative projects?

Research Question 3: What are teachers' perceptions about the use of social media and global collaborative projects to enhance middle school students' digital citizenship and academic achievement?

Research Question 4: What are teachers' perceptions regarding integrating digital citizenship, social media, and global collaboration in the middle school curriculum?

Chapter 4 includes the following major sections: setting, demographics, data collection, data analysis, evidence of trustworthiness, results organized by research questions, and summary of the data. Open-ended interview questions provided a conduit for freedom of expression. Teachers' and the administrator's responses were analyzed, organized, and coded to find themes used for meaning-making purposes. Wiki data were also analyzed, organized, and coded for meaning-making purposes as well as for achieving data triangulation or for convergence and coherence of data across multiple sources of inquiry (Yin, 2014, p. 120).

Setting

Interviews with participants were initiated from my home using Skype running on my personal password-protected laptop computer for seven of the interviews and on my password-protected cell phone for one interview. One participant was at work, but alone in her classroom when participating in the interview. The remaining seven participants were at home. One interview was momentarily interrupted due to a child requiring her attention, and one participant's cell phone served as a distraction one time during the interview. The average length of all Skype calls was one hour. I had no control over the setting in which the participants were situated during the interviews. I was not aware of

any personal or organizational conditions present that influenced participants at the time of the study. I was not aware of any personal or organizational conditions present that influenced the interpretation of the study results.

Demographics

Teachers participating were middle school teachers. All participants were female. One teacher home schooled her children who were middle school age, one was a public school teacher, and six were private school teachers. Three countries were represented: five from America, one from Australia, and two from New Zealand. Six of the teachers were from urban areas, one from a suburban area, and one from a rural area. The administrator was female, had been a middle school teacher prior to becoming the administrator of this project, lives in Australia in an urban area.

- Participant 1 was a female American teacher located in the north central region of the USA. The school was a private Catholic school situated in an urban setting.

- Participant 2 was a female New Zealand educator who lived in an urban region. She was the administrator of the Flat Connections Digiteen and Digitween Wiki Project.

- Participant 3 was a female American teacher located in the southwest region of the USA. The school was a private school situated in an urban setting.

- Participant 4 was a female Australian teacher located in southern Australia. The school was a private Lutheran school situated in an urban setting.

- Participant 5 was a female located in New Zealand who home schooled her children in a rural setting.

- Participant 6 was a female American teacher located in the southwest region of the USA. The school was a public school situated in a suburban setting.

- Participant 7 was a female American teacher located in the northeast region of the USA. The school was a private school situated in an urban setting.

- Participant 8 was a female American teacher located in the north central region of the USA. The school was a private Catholic school situated in an urban setting.

Data Collection

Upon receiving IRB approval to conduct the qualitative case study, I emailed the administrator of the Flat Connections Digiteen and Digitween Wiki Project for a list of names and email addresses of teachers and an administrator who had participated in the project. A letter of invitation (Appendix A) was sent to teachers and the administrator introducing the purpose of my study and inviting them to participate. I sent 13 invitation emails on 01/11/2015. I received responses from one teacher and one administrator. For those not responding, a total of ten invitation emails were sent on 1/26/2015, 3/31/15, and 4/28/15. A total of 18 invitation emails were sent on 2/2/2015, using a second potential participant list provided by the administrator. A total of fifteen invitation emails from the second list were sent on 3/31/15, and 4/28/15. One invitee from the first list noted that she did not work with students directly and was not able to participate in the study. One invitee had resigned from her school and no additional contact information was available. One invitee's email bounced back indicating an invalid email address. Three invitations were returned the same day indicating the invitee consented to participate in the study. Five invitations were returned indicating invitees' consent to participate in the study from

several days to two months after the invitations were sent. Four consent forms were returned the day the consent forms were emailed. Four consent forms were returned one to two days after the consent forms were emailed. Data collection was initiated on 1/26/2015 and was completed on 5/14/2015.

An informed consent form was emailed to individuals who indicated they were interested in participating. I received confirmation of participants' willingness to participate in the form of their email reply to the informed consent form. I scheduled interviews with those participants. A total of seven teachers and one project administrator consented to participate.

After consent forms were processed, I emailed participants asking for their preferred type of contact (Skype or telephone) and dates and times that would work well for them to participate in the interviews. Taking into account participants' daytime schedules were likely filled due to their roles as teachers and an administrator, and because different time zones and countries were represented in my purposive sample, I remained flexible when scheduling participant interviews.

A teacher interview protocol (Appendix B) and a project administrator interview protocol (Appendix C) that contained open-ended questions were used to elicit open-ended feedback from participants. I used a hardcopy of the interview protocol for each interview for note-taking and journaling. I also maintained a reflective journal during the course of data collection and analysis as an audit trail to establish dependability and confirmability of the study.

The interviews were recorded using MP3 Skype Recorder. After each interview was completed and the audio file generated, the audio file was moved from my password-protected laptop computer to an encrypted USB flash drive storage device external to my laptop computer. Thereafter, each audio file was uploaded to Automatic Synch Technologies, LLC using encrypted data links for the purpose of transcribing the audio to text format. Automatic Synch Technologies, LLC, provided a confidentiality agreement (Appendix E) indicating that the confidentiality and security of audio interview files shared with them would be managed with integrity.

After receiving the transcript for each file uploaded to Automatic Synch Technologies, LLC, I carefully reviewed each transcript while playing back the audio recording of the interview. I used this process to verify the accuracy of the transcripts to ensure the transcription was a verbatim text representation of the audio interview data. Once verified for accuracy, each transcript was analyzed using open coding. Although the transcription service was quite accurate, a detailed comparison of the transcripts to the audio interviews resulted in minor edits to the transcripts. No unreasonable transcription errors were observed.

Data from the Flat Connections Digiteen and Digitween Wiki Projects were also collected for evidence of artifacts, processes, and final project output across the attributes of collaboration, creation, modification, learning, and demonstration of digital citizenship skills. Those facets of the Wiki analysis were tied to each of my four research questions. The project administrator granted me permission to use the Wiki for the purpose of my study. The content on the Wiki was available to everyone and was made available under

a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported (CC BY-NC-SA 3.0) license. The Wiki content was screen captured and copied and was saved to my password-protected laptop computer. The capture of Wiki content spanned two days. Once the Wiki content was captured, the files were moved from my password-protected laptop computer to an encrypted USB flash drive storage device external to my laptop computer. The USB flash drive was placed into a fireproof safe locked with a key at my home and will remain for five years beyond the completion of the study. The Wiki content was analyzed using a Wiki analysis protocol (Appendix D). No variation in data collection from the plan outlined in Chapter 3 occurred, and no unusual circumstances were encountered in data collection.

Data Analysis

Three sets of data were analyzed as part of this study: teacher interviews, an administrator interview, and Wiki content. Data were manually analyzed for themes and patterns to establish codes that were derived inductively. This process was iterative so as to traverse the data along multiple paths for the consideration of as many connections in the data as possible. After the individual manual analysis was completed for all teacher interview transcripts and the administrator interview transcript, the teacher interview transcript data and the administrator interview transcript data were analyzed by research question for all teacher and administrator transcripts for further analysis. The final themes were:

- Research Question 1: *adopted digital citizenship perspectives, took digital citizenship actions, social media collaboration,* and *diminished ethnocentrism.*

- Research Question 2: *student-developed intervention strategies* and *teacher-developed intervention strategies*.

- Research Question 3: *enhanced digital citizenship and awareness, enhanced social media use and awareness, enhanced academic versus recreational uses of social media,* and *enhanced academic achievement*

- Research Question 4: *job preparation, teacher and administrator buy-in, open access to technology, curriculum modification,* and *authentic audience*

After the codes for teacher, administrator, and Wiki data were assembled as a whole, additional insight about answering the research questions was garnered. The codes were organized by research question to tease out emergent themes and patterns. As part of this process, discrepant data were identified and used to help establish confirmability of this study.

Discrepant Case

One discrepant case among participants emerged in this qualitative case study. Improper team formation resulted in the discrepant case. Younger students in grade five were assigned to work with older students in high school. Communication barriers associated with differences in writing and comprehension resulted in younger students being able to understand communications made by their older teammates. The teacher and her students dropped out of the project after struggling with the team formation barrier.

The sample size was eight participants and was considered fruitful based on Eisenhardt's (1989) prescription of a sample size "between 4 and 10 cases" (p. 545), and

Yin's suggestion that for sample size of multiple-case designs "Your judgment will be a discretionary, not a formulaic, one" (p. 61). A larger sample size may have provided additional opportunity for discrepant cases to materialize. Based on the small size of the sample, it may be difficult to transfer the results of this study to other situations when contrasting perspectives are unavailable. However, the sample size is within boundaries for providing a starting point for making initial generalizations across other groups.

Evidence of Trustworthiness

As a measure for assessing the quality of narrative inquiry research methods, Lincoln and Guba (1985) issued the trustworthiness criteria as "credibility, transferability, dependability, and confirmability" (p. 43). Credibility supplants internal validity, transferability supplants external validity, dependability supplants reliability, and confirmability supplants objectivity (Lincoln & Guba, 1985, p. 219) for narrative inquiry research methods as compared to "positivist and postpositivist paradigms" (Loh, 2013, p. 4). Lincoln and Guba's trustworthiness criteria serve as the de facto standard for assessing the quality of qualitative research and were used to ensure that quality was addressed during data collection and analysis for the parameters of credibility, transferability, dependability, and confirmability.

Credibility

Triangulation. Data were gathered from seven teachers, one administrator, and from the Wiki's histories and artifacts. Multiple perspectives from teacher interviews and an administrator interview yielded thick, rich accounts of the problem and data that answered the research questions. Wiki data provided an additional source of data that

was used to answer the research questions. Combining the teacher interviews, an administrator interview, and wiki data allowed for triangulation across "multiple [data] sources but aimed at corroborating the same finding" (Yin, 2014, pp. 120-121). This convergence of multiple sources of data promoted credibility and coherence among the data and "any case study finding or conclusion is likely to be more convincing and accurate if it is based on several different sources of information, following a similar convergence" (Yin, 2014, p. 120). Multiple lines of inquiry enhanced the validity of the interpretation of data by taking into account two types of participants and associated interview data as well as Wiki data. Coherence among the data, especially when considering separate interview data gathered at different times, and Wiki data further promoted credibility of the research findings. Triangulation also enhanced the dependability of the study for an enhanced perspective on case phenomena and events. Interview data were recorded using MP3 Skype Recorder, transcribed verbatim using the Automatic Synch Technologies LLC transcription service, and checked word-for-word by the researcher to further enhance the dependability of the research study.

Saturation. Repetition in the data ensured that saturation was achieved. Saturation is "the point in the research when all the concepts are well defined and explained" (p. 145) such that "no new data are emerging" (Corbin & Strauss, 2008, p . 143). Eisenhardt (1989) recommended using "between 4 and 10 cases" to achieve saturation (p. 545). I interviewed eight participants and found repetition in the data such that no new data were emerging which met Eisenhardt's prescription for saturation.

Transferability

  Thick, rich descriptions. Thick, rich descriptions were captured in interview data in response to asking open-ended "how" and "why" questions (Yin, 2014, p. 48). Such descriptions were captured to establish the context of the phenomenon (Geertz, 1973, p. 14), to point to commonalities among situations, and to provide connections to other settings (Carlson, 2010, p. 1104).

  Participant variation. Participant variation was achieved by interviewing participants from three different countries including Australia, New Zealand, and the USA. Participants from the USA were located in the northeast, north central, and southwest regions of the country. Both private and public schools were represented in the sample as well as specific religious denominations. One participant schooled her students at home. Seven teachers and one project administrator were represented in the participant pool, and interviews were conducted on different days of the week, at different times of the day, and across multiple months. Such a variation of perspectives helped enhance transferability of findings.

Dependability

  Audit trails. Audit trails were used to identify my biases, to capture personal reflections on the coding and analysis processes, and to minimize errors. This capture of reflective and process data established dependability, which facilitated confidence in the original case study and helped minimize errors. Teacher and administrator interview data as well as Wiki data were collected, analyzed, and cross-referenced to achieve convergence and coherence in the data.

Confirmability

  Reflexivity. Having employed a reflexive approach where I checked my involvement in the process of data collection and data analysis, I made note of my bias as well as my self-awareness in a "dynamic and continuing" manner (Finlay, 2003, p. ix). My self-awareness included "thoughts, feelings, uncertainties, values, beliefs, and assumptions that surface throughout the research process" (Carlson, 2010, p. 1104) and was made explicit using audit trails, memos, and journals. Care was also taken to manage reflexitivity, or situations where "your perspective unknowingly influences the interviewee's responses, but those responses also unknowingly influence your line of inquiry" (Yin, 2014, p. 112). Open-ended questions were used to elicit responses from interviewees in a manner that eliminated influencing interviewees. Where additional feedback was needed, additional open-ended questions were issued to probe the interviewees for their account of their experiences rather than what the interviewee might think I wanted to hear (Yin, 2014, p. 106). The use of these methods allowed me to remain objective in this qualitative case study, which established confirmability.

Results by Research Question

  This qualitative case study was conducted to discover teacher and administrator perceptions on integrating digital citizenship, social media, and global collaboration into the middle school curriculum. The sources of data included teacher interviews, an administrator interview, and Wiki data. The results of this study may be leveraged to help formulate policies on integrating digital citizenship in middle school curriculums.

Data were collected from teachers and an administrator who participated in the Flat Connections Digiteen and Digitween Wiki Project. Data were also collected from Wikis created during the Flat Connections Digiteen and Digitween Wiki Project. The themes were found and are organized by research question. Multiple convergent sources of data including teachers' and an administrator's interview data as well as Website data associated with the global collaborative projects gathered at different times helped establish credibility and coherence among the data (Yin, 2014, p. 120). Themes and patterns were derived inductively using multiple sources of data.

Research Question 1

Research Question 1 asked what teachers' perceptions were about middle school students' development as digital citizens when engaged in global collaborative projects. Global collaborative projects using social media may help foster students' global digital citizenship. The Flat Connections Digiteen and Digitween Wiki Project provided an organized program in which students experienced global collaboration. Social media was used for communications to foster digital citizenship. The analysis of teacher and administrator perceptions about middle school students' development when engaged in global collaborative projects focused around the following themes: (a) adopted digital citizenship perspectives; (b) took digital citizenship actions; (c) social media collaboration; (d) diminished ethnocentrism.

To set the stage for students' growth as digital citizens stemming from their participation in the digital citizenship projects, I will set the context for this study with teachers' perceptions about students' knowledge about digital citizenship as they began

the digital citizenship projects. Students' knowledge of digital citizenship at the onset of

their global collaborate projects ranged from having no knowledge to having a weak

understanding of digital citizenship overall. An exception was found in the case of a

particular group of 9th graders who had experience with digital citizenship at lower grade

levels in prior years as described by Participant 6:

> I think they received some instruction in middle school because my district
>
> requires that. There's a one-day lesson that has to be taught to all students at the
>
> beginning of the year and so I think they knew a little bit.

Otherwise, digital citizenship was a foreign concept to most students entering the digital

citizenship projects. This was demonstrated by the statement made by Participant 2:

> Students don't know how to effectively communicate online when we're talking
>
> about communication for learning, not communication for socialization. And this
>
> is where the confusion comes in…So one of the big barriers is that we put
>
> students into these discussion forums or these Wiki collaboration situations, and
>
> they just have absolutely no idea how to do it. They have no previous skills in
>
> that online format.

Similar sentiments were shared by Participant 1, Participant 3, Participant 4, Participant

5, and Participant 8. Although some students had encountered some concepts and

examples associated with digital citizenship prior to participating in the digital citizenship

projects, students' understanding of digital citizenship was limited and fragmented

according to Participant 1, Participant 3, Participant 4, Participant 5, and Participant 8.

Students were not aware of how the pieces and themes associated with digital citizenship

fit together as a whole. For example, Participant 4 offered that her students understood

how to use social media in some cases, but with respect to digital citizenship they

"weren't ready or had pretty much no idea, whatsoever...I found the students quite naive,

I guess, in regards to what it means to be a global citizen and how to use different tools."

It was also found that some students had experience using social media whereas others

had none as described by Participant 3: "You had a few that you can tell obviously

they're on these social media things…And then the rest either like have no clue or some

that know a little bit but they're not familiar with it." Students who had social media

experience used social media in personal rather than academic settings. Despite students

having exposure to digital citizenship prior to participating in the digital citizenship

projects, Participant 3 offered that students' maturity was lacking: "Some kids knew, but

then, you know, some were immature about it and didn't quite understand the whole

thing…They really didn't know a lot about it…" Upon entering into the global

collaborative projects students post non-academic informal messages to their social

media tools online. Students lacked the maturity to use social media professionally in an

academic setting. Students soon realized they needed to adjust their approach to using

social media in their classrooms because their informal posts created clutter which made

it difficult for students to find their posts and the posts of others (Participant 1).

Although Participant 8 found that some students had "general background

knowledge" about digital citizenship, they did not understand specific areas associated

with digital citizenship or the degree of complexity associated with digital citizenship. In

contrast, other students understood some specific topics often associated with digital

citizenship such as cyberbullying, but did not understand digital citizenship from a broader perspective (Participant 1). Students were missing a holistic understanding of and appreciation for digital citizenship.

In some cases students had prior experience with online global collaboration and a familiarity with various types of technologies as indicated by Participant 4 and Participant 5. However, Particpant5 revealed that the use of those tools and collaborative efforts were "more of just a social experience" rather than one focused on learning. While some students felt comfortable connecting with others online, they essentially stalled and needed to be encouraged to keep collaborating as Participant 8 clarified: "For my students, their readiness and knowledge, I would say they are comfortable with connecting with someone that they don't see face-to-face, but they need to be encouraged to continue a conservation." Students did not have the required skills to continue collaborating for learning in a global collaboration setting.

In summation, students' knowledge and understanding of digital citizenship was fragmented at the start of the digital citizenship global collaborative projects. Teachers observed that students were not knowledgeable in any meaningful sense about digital citizenship as a guiding and comprehensive theme for appropriate online collaboration and appropriate use of technology in an academic setting. Although some students connected to others using social media in their personal lives, global collaboration for learning and problem solving in an educational context was foreign to students. As students participated in the digital citizenship projects their perspectives changed as they took on the roles associated with digital citizens.

Adopted digital citizenship perspectives. The first theme that evolved from the data showed that students grew as digital citizens as they participated in the digital citizenship projects. Students developed as digital citizens because they adopted digital citizenship perspectives. Students' perspectives about digital citizenship changed positively in that they became supporters of social media use for global collaboration, supported global collaboration and enjoyed connecting and interacting at a great distance, and realized that digital citizenship is not to be ignored but that it is important. Students' perspectives also changed in a positive manner as they became aware that they are not always the focal point in online collaboration but that they are a single participant that may be overlooked online. Finally, students' perspectives associated with digital citizenship changed in a positive manner because students concluded that it was their responsibility to take care of the world and that doing so could be exciting and fun. That students adopted digital citizenship perspectives is a considerable first step as a majority of students had limited experience with and a limited understanding about the concept of digital citizenship, if any, as they entered into their global collaborative projects.

To examine how students adopted digital citizenship perspectives, students who had limited or no exposure to using social media learned that it could be useful for collaborating with others and became supporters of social media. Students were found to take an active role in their education, and Participant 2 relayed that students benefited from "active learning and engaged learning" through hands-on digital citizenship studies. Social media was used in educational settings for collaborative problem solving which helped students become active digital learners, communicators, and sharers of knowledge

as indicated by Participant 2. Additionally, Participant 2 stated it is important that students garner experience in such areas because many jobs in the future are going to require digital citizenship skills. This idea was reflected when Participant 2 stated:

> How important it is on so many levels the whole global competence piece, international mindedness, skills with technology, this competency in learning. It's vocationally important. Jobs in the future are going to be more like what I do. I work from home and travel when I need to. And a lot of people are going to be doing that more in the future. So you need to know how to effectively communicate and build things, as I keep saying, build things through social media and collaborative environments.

Digital citizenship skills are critical to students' ability to acquire work in a global society. Without skills associated with social media and global collaboration coupled with a global mindset, students may not be prepared to enter the workforce as productive citizens at the end of their academic careers.

A particular case stands out where a student adopted digital citizenship perspectives. That is, Participant 3 commented about a student who did not use social media prior to participating in the digital citizenship project: "She doesn't use social media, she doesn't interact with other people." Participant 3 observed that the student had a positive change of perception in that the student thought it might behoove her to investigate social media. Participant 3 supported this observation in the following reflection:

She couldn't really relate, but then she also felt like, well, wait a minute. Maybe I

need to start not necessarily go out and join Instagram and Facebook and all those

social media things. But maybe I need to start and to see like what this is about.

She didn't have the experiences and she felt like she needed to try to reach out

more and try to find some of those I guess.

The student did not interact with others much and did not use social media, but she

concluded that she might investigate what social media was about. The student's change

of perspective took the student from having no social media experience to considering its

use at a minimum. Where there was no consideration for using social media prior to

entering the global collaborative projects there was the potential for investigation and use

after having entering the global collaborative projects. The student adopted digital

citizenship perspectives by having a change of perspective as a result of participating in

global collaborative projects.

Students also had a global awakening of sort as they garnered an appreciation for

working collaboratively online using social media. For example, students were "quite

excited that they could be connected to something so easily which was so far away from

them" and were also excited because "they felt a part of something which, you know, was

so distant from them" (Participant 5). Participant 4 observed that her students felt

privileged to participate in the global collaborative projects and found their experiences

enjoyable and special. This idea was demonstrated by the statement made by Participant

4:

They felt really special and they connected really well with each other. They

were really aware that they were doing something special and it was a privilege to

do it by interacting with these kids overseas, which they really enjoyed

Students adopted digital citizenship perspectives because they learned that distance was

not a barrier to global collaboration when using social media as a communication and

collaboration platform. Students' were motivated and excited to collaborate with others

globally and found the experience a privilege.

Students took on the roles associated with digital citizenship when English-

speaking students encountered non-compliant use of the English language as written by

their global collaborative peers from an Asian country. Participant 6 instructed her

English-speaking students to offer grammar corrections to their foreign peers who were

learning the English language: "it's your job as the audience for this project--your good

English--it's your job to just fix it. Make the sentences make more sense." Further,

digital citizenship was not something easily learned or put into practice as Participant 6

offered that her students "learned that digital citizenship is more complex than they first

thought." When asked if she perceived that her students grew as digital citizens as a

result of this experience, Participant 6 replied "I think they did because they recognized

that not everyone who uses social media comes from the same background as them."

Additionally, the same students were perceived as having understood different "…types

of connections…" and that "…in a global world of collaboration they could be working

with anyone, anywhere, anytime" (Participant 6). Students learned how to critique the

work of others, especially when written by those with whom they were not overly

familiar in the case of their foreign peers.

Participant 2 asserted that collaborating globally, using technology appropriately,

and sharing knowledge with others are key skills associated with digital citizenship.

Students garnered first-hand experience with cultural diversity which resulted in

differences in how the English language was used. As suggested by Participant 2,

cultural diversity can serve as a communications challenge, or what I would call barriers

when engaged in global collaboration. This was supported by the following statement

made by Participant 2:

> In terms of cultures, yes, we've had some not so much barriers, more I don't know
>
> that I would call different cultures a barrier, challenges perhaps in terms of, once
>
> again, being able to effectively communicate and use words that are more global
>
> perhaps.

As digital citizens, students were able to assist others at a distance by using social media

as a platform for collaborative editing of type-written communications. Students also

learned that there is more to digital citizenship than simply relaying information as they

moved past the potential barrier of cultural diversity. As described by Participant 2,

digital citizenship includes a collaborative problem solving element as well as a

knowledge sharing element: "I think it is a digital citizenship skill to understand how to

collaborate online and how you can actually edit other peoples' work and communicate

with them while you're doing it," and students took on those roles. Students adopted

digital citizenship perspectives and experienced positive changes resulting from differences in language use when collaborating using social media in a global setting.

A change of perspective was also experienced by students who learned from their global collaborative peers that they needed to approach differently the digital citizenship topic of copyright. Specifically, Participant 8's students had a negative perspective on copyright, but their foreign peers convinced them to think differently about the topic. This was reflected in the statement made by Participant 8:

> A couple of students did something on copyright and they thought copyright was a bad thing. And when they shared their presentation with someone from another school, the student recognized that they were thinking that copyright was like plagiarism, and corrected them.

Further, many topics associated with digital citizenship have negative connotations, but Participant 4 indicated educators should help students understand that digital citizenship should not be considered within a negative context. Supporting this concern among students, one of them indicated in a Wiki post that students were concerned that technology can be harmful: "I wrote more about how much technology is affecting us. This is a different point of view, these people think it's a bad thing." That technology was found to be a bad thing and that the perspective was different from what was expected, Student1 had a favorable view of technology and found it novel that technology could be viewed as a bad thing. As such, students encountered multiple perspectives about technology and engaged others by informing their global collaborative peers about their findings. By engaging others in online collaborative learning, students adopted

digital citizenship perspectives as they learned from their foreign peers which resulted in a change of perspective based on the collaborative input from others.

Students also adopted digital citizenship perspectives by orienting themselves as socially responsible users of technology as indicated by Participant 7. Participant 4 shared that her students viewed themselves as caretakers of the world and incorporated an ethical element into their digital citizenship perspectives. This idea was demonstrated by the statement made by Participant 4:

> And I think others really got a concept of that even though they're just from a small school in rural south Australia it is their responsibility to connect and interact with other people and that there's a whole huge world out there that we need to take care of, so that they definitely had an idea of sort of the ethics involved in digital citizenship and what could come from it, as well, and have fun.

Students' appreciation for the immediacy of global problems grew, and students realized they could make a difference on a global scale as observed by Participant 4:

> They did learn to understand a little bit about other problems in the world, and the importance, I guess, to join together to solve those problems. And I think they gained an awareness of how important and fortunate their generation, you know, we put emphasis on this-how important it was to their generation to sort of take charge, and even though you're a teenager you can use social media and use your connections and your communication skills to make a difference in the world positively.

At the same time, students learned that taking responsibility for the world could be fun, and that differences in geographic size and location need not be a barrier when engaging others globally as Participant 4 indicated.

Students' also adopted digital citizenship perspectives by garnering respect for online space and by understanding their place in online space. For example, Participant 1 relayed that "…they're getting more respectful of online space…I think they become more respectful, if you look at that aspect of digital citizenship." For example, in a Wiki post, a student apprised her team of her post and offered assistance to others after acknowledging that little had been done: "I have post my paragraphs, and there is only one other person who has posted. If there is anything that I can do to help please just ask." Also based on Participant 1's account, students learned that as online digital citizens they are not the focus of everyone's attention as "they had this assumption that everybody was looking at them and it was all about me, and they found out that that's not true." Participant 3 found that her students came to realize that digital citizenship was important: "I actually think that their perceptions changed for the better…I think they took it more seriously, like wow, you know what, this is something serious, this is what we're moving towards, you know, as they move through their education." The importance of digital citizenship was echoed by Participant 7 as well:

> …there were a handful of kids that were really serious about it and took it on as like, okay, you need to know this…and I think there was that ah-ha moment for most of them…they definitely were more aware at the end and ready to teach and present and had a lot to say about it.

A challenge observed by Participant 3 associated with using social media in academic settings is that students may come to classrooms without any social media experience: "A lot of them didn't have [social media] experiences because their parents probably don't allow them to just talk to whomever and in our district they can only talk, they can only correspond with people that they go to school with." Otherwise, when students did have social media experience, Participant 2 noted that it was often personal and social in nature without a collaborative problem-solving or learning foundation for use in academic settings. This idea was reflected in the statement made by Participant 2:

> Students don't know how to effectively communicate online when we're talking about communication for learning, not communication for socialization…Because students actually, well to use an old phrase, have to be taught, or there has to be some role modeling somewhere and some persuasion to show them this is how you communicate, this is how you collaborate, this is how you write an effective discussion topic, this is how you respond effectively to a discussion.

When social media was used for the first time in academic settings students used their personal and loose standards for communication because that is what they knew according to Participant 1, Participant 2, and Participant 4. Students adopted digital citizenship perspectives and grew as digital citizens as their perspectives about digital citizenship became more respectful in the case of their online presence. Their sincerity about the importance of digital citizenship also grew as they engaged others using social media in the digital citizenship projects.

In summation, it was found in the data that teachers observed students experiencing positive changes in their perceptions about digital citizenship and becoming digital citizens when collaborating globally in the digital citizenship projects. This is noteworthy given students' lack of familiarity with digital citizenship and the responsibilities associated with digital citizenship prior to participating in the digital citizenship projects. Students became supporters of social media, learned the value of global collaboration, took on responsibility for world/global safety, and became more respectful of online space and the ethics associated with digital citizenship as they became aware of the importance of digital citizenship.

Took digital citizenship actions. Students not only had breakthroughs in terms of positive changes in perspective with respect to becoming digital citizens, but the data also showed that students grew as digital citizens as they exhibited digital citizenship actions. Students modified their online collaborative writing styles, modified their use of social media, used social media to present digital concepts to others to share their knowledge, and took time to reflect on their online actions as digital citizens. Students benefited from taking part in the global collaborative digital citizenship projects as their behavior was modified in a positive manner such that aligned with the tenants of digital citizenship.

Although students who participated in the global collaborative digital citizenship projects learned about specific digital citizenship concepts, a key part of the experience was improving online communication and collaboration with peers from distant lands often on the other side of the world. For example, one teacher noted that digital

citizenship encompassed taking a hands-on approach to learning by using tools to collaborate both locally and beyond as well as sharing knowledge with others. That is, Participant 2 asserted that digital citizenship is "about becoming active digital learners, hands on the tools, learning how to communicate, learning how to communicate within the class and beyond the class, and learning how to share that knowledge." Students assumed this role as demonstrated by the following student who posted the following information to her teammates within their team Wiki: "Hello team! I posted some information about using a Wiki to work with a team." In this example, the student took on the role of digital citizen by researching, using social media, and sharing with others within the team Wiki.

Although many students had little experience, if any, with global collaboration prior to participating in the digital citizenship projects, Participant 2 indicated that students exhibited digital citizenship actions by taking on roles associated with digital citizenship and taking action as digital citizens. Specifically, students learned to communicate collaboratively and globally online using social media by adjusting their writing styles in favor of a more professional tone rather than using informal writing styles that are commonly used in personal or social communications as described by Participant 8. In doing so, students showed increased respect for online academic spaces and differentiated between personal/social and professional writing styles by improving the quality of their online posts. For example, students' made adjustments to what they placed online as they became familiar with using social media for academic purposes. Participant 1 commented:

> I see they're getting more respectful of online space in that they're not putting as many just kind of funny comments and pictures out there, because they're starting to understand that you have to sort through what's there to find what you're looking for…so all the spam has been minimized a lot...

Students also modified their online grammar and spelling in favor of a more professional tone. That is, when speaking of her students' use of language online, Participant 8 noted that: "…they realize that they can't use slang words or they have to make sure they're spelling things correctly…they are using less and less text talking and slang and more complete thoughts, which I really liked."

Cultural awareness helped students take digital citizenship actions in a collaborative sense by providing exposure to world-views and problems, and by facilitating the application of those views and problems to students. For example, Participant 1's students' communications improved as they became more culturally aware of others and world affairs as Participant 1 described:

> The interactions in my classroom this year with the international students were better because we had a forum for talking about cultural awareness, which I'm sure they do that in social studies too, but maybe they weren't applying it to themselves, and this gave them an opportunity to apply those situations to themselves and the conversations they were having.

Cultural exposure also promoted enthusiasm and awareness among students interacting in the global collaborative projects based on feedback provided by Participant 4:

And I think that it opened their eyes up to, well, it just made them more aware of other people and other people's views, and even though there weren't, as I said, there weren't any major cultural differences, just looking at how the Asian kids in the classroom or African-American kids in the classrooms, that really got them excited, like I'm also happy to work with other children and which made me very happy.

The same students took an interest in other schools and countries thanks to participating in the global collaborative projects as further described by Participant 4:

I think they really acknowledged a lot more of what was going on in the world and showed more of an interest in other countries, especially school systems and what it's like to be at school in another country because we did get to do a Skype with them and other school students.

Students' conversations also improved in quality of responses to others and acknowledgement of others as digital citizens as Participant 1 shared:

I've seen a better, more genuine compliment instead of the yeah that's good or I agree. We're getting a little deeper level of conversation and compliments, if you will, instead of just all about me. There's a little better conversation that goes on when they're in digital spaces.

Exposure to digital citizenship topics and collaborating with others globally helped students integrate culture into their perspectives as they took actions as digital citizens. Students developed broader perspectives that included differences between global

collaborative peers. Students also developed as digital citizens by taking a more academic approach to their studies and global collaboration efforts.

Students exhibited digital citizenship actions by using social media to share their knowledge about digital citizenship with others. The opportunity to use technology to share concepts with others motivated Participant 8's students to take on new perceptions and take "some more time and research" to prepare their projects as students took on the role of teacher. Participant 8 supported this observation in the following statement:

It definitely bumps the whole perception to another level in that they're not just doing an assignment for the teacher. It's an assignment that other people will learn from, other students, other teachers, and then they actually have to present to a local community. So they presented to the 5th grade. So it's not their peers, it's their community, as well as beyond. So it gives a great value more than grades could give in terms of the importance.

The global collaborative digital citizenship projects elicited positive digital citizenship actions that had not been encountered in prior times based on Participant 6's experience. For example, Participant 6 relayed that students engaged peers from other schools for ideas about digital citizenship as well as sought the advice of experts in the field when readying for their digital citizenship knowledge-sharing activities. Participant 6 commented:

One group this year chose cybersecurity as their service learning topic. And they went to a local technology business and they talked to an expert. And then they talked to their peers and also some students from another part of town. They

taught them some digital citizenship ideas. And so that was interesting because that's never happened before.

When speaking about her students' awareness of their social responsibility to solve problems as global collaborators and digital citizens, Participant 4 stated that her students grew in this regard and she emphasized that: "even though you're a teenager you can use social media and use your connections and your communication skills to make a difference in the world positively."

Students in Participant 7's class used social media such as Prezi presentations to relay information about digital citizenship to younger students, and they also included games as an active learning component for the benefit of their younger peers: "…some of them actually made like really great Prezi presentations for the teaching moment. They made games for active involvement." The sharing component had a positive impact on students because they took their roles as digital citizens seriously and were ready to speak at length to their younger peers as they exhibited digital citizenship actions per Participant 7's observations: "they definitely were more aware at the end and ready to teach and present and had a lot to say about it." In summation, students relied on various tools, sources of information, and collaborative efforts based on connectivist theory as well as the tenants of digital citizenship as they exhibited digital citizenship actions when sharing their knowledge about digital citizenship with others.

Finally, students exhibited digital citizenship actions by reflecting on their online behavior and subsequently modifying their online behavior. Students became "more reflective of their actions and behaviors" (Particpant7). Participant 7 also shared that

some of her students "were more interested and engaged and started to change who they were friending on Facebook or what they were putting out there, realizing that other people are watching." By reflecting on their online behavior and modifying the same, students exhibited digital citizenship actions for a globally-aware and globally responsible online persona.

While students came to the digital citizenship projects with little to no experience using social media in educational settings, students became better communicators and collaborators, used social media tools to teach others about digital citizenship, and modified their online behavior while reflecting on the consequences of their online actions. Participant 8 provided commentary that summarized this concept nicely:

> …they were more comfortable with, with how to collaborate, how to communicate, and they kind of understood the patience involved, as well. …And they are comfortable introducing themselves and they have the tools in which to continue the conversation.

Students grew as digital citizens as they became online collaborators and used social media tools in a responsible and productive manner. Students networked with others in academic settings for collaborative learning experiences, and students modified their online behavior in a positive manner. That students took time to critically assess their online behavior as well as modify their online actions in a positive manner demonstrates that students exhibited digital citizenship actions by taking on the roles associated with digital citizenship as

well as by taking action as global digital citizens. Given students' limited experience with and understanding about the concept of digital citizenship at the start of the global collaborative projects, this exemplifies a second step toward students becoming digital citizens.

   Social media collaboration. The data showed that students grew as digital citizens by engaging in social media collaboration on a global scale. Participant 2 indicated that both teachers and students used social media to become digital active learners as they shared their ideas locally and globally. Other students engaged in social media collaboration by learning that they could not place anything they wished onto Edmodo as they do when posting recreationally to peers when using social media for personal use according to Particpant1 and Participant 6. If using social media for educational purposes, students learned that excessive posts created clutter and an unusable work space, and that their posts needed to be class related rather than socially oriented per Participant 1's observations:

   …at the beginning of the project, the kids were really crazy to put stuff out there. They wanted to get a lot of posts and a lot of likes. And it didn't take too long to figure out, hey, we can't do that. It's taking up too much space. We can't find what we're looking for… So it didn't take them long to figure out that what you post has to be class related and not a lot of that just conversational, hey, how are you kind of thing.

Otherwise, students were corrected by teachers and peers, and they modified their posts by eliminating posts that "weren't relevant to the project" (Participant 6). Students

engaged in social media collaboration by differentiating between educational and personal uses of social media. Students modified their behavior while collaborating globally so that they could better manage the information placed onto Edmodo by modifying the type of information placed onto Edmodo. Students were motivated to become better digital citizens and that change materialized as modification of behavior when taking on the roles associated with digital citizenship.

Other students engaged in social media collaboration by sending handshakes and videos to each other when using a Wiki and Skype respectively according to Participant 4. Skype helped students feel connected to each other and students enjoyed using a Wiki for communications when issuing handshakes as they "[got] to know each other" (Participant 4). For example, a student offered the following handshake to others in his team's Wiki: "Hello, I am [Name] from [School] Middle School. I have added my name to the Team Member Section on the Wiki. I am part of Social Media and Virtual Worlds (Global)." Students also enjoyed sending other students short videos about themselves as part of their introductions and handshakes as indicated by Participant 4. Students also created videos using social media to share with others on digital citizenship topics such as the "dos and don'ts of Tumbler or dos and don'ts of Instagram" (Participant 6). Finally, Participant 4 noted that her students were "confident in using that kind of platform and handshaking and getting to know people in that way." As such, students engaged in social media collaboration by greeting others using text chats and videos as well as by learning more about others when collaborating globally online.

Social media also had a positive effect on students when they engaged others in global collaboration and took on the roles associated with digital citizenship when using Skype and Blackboard based on Participant 5's perceptions. Students were energized by the comments directed to them by their global collaborative peers as indicated by Participant 5: "[students] were really quite motivated when they got the response back from people. That was quite exciting for them." Further, students also felt connected to their global collaborative peers in other countries per Participant 5's account as students were "excited because they felt part of something which, you know, was so distant from them. Because these boys were in New Zealand, and yet the other kids were mostly in the states." The same students also used Google Docs when collaborating with others online about digital citizenship topics such as copyright laws per Particpant5's observations. Students engaged in social media collaboration by engaging each other online and found the experience exciting and motivating when chatting with each other, sending videos to each other, and collaborating using Google Docs. As an example, a student offered the following reflection supporting his excitement about the global collaborative projects and action projects as well as connecting to other students outside of his own school:

> The project was fun because I got to talk with people that weren't just from this school. I also had fun because I learned some new things about how to be safe online myself. It was also fun because I got to teach others about how to be safe online.

As a supplement to this reflection, another student not only enjoyed the action project immensely, but also issued a note for others in his action project reflection document: "We thought it was an all around good, productive project. Working on Edmodo was an absolute blast. We had tons of fun while working on everything. We hope you guys learned something from participating like we did." Students showed enthusiasm derived from participating in global collaborative projects, and students found their time spent in global collaborative projects worthwhile.

A social media tool known as Prezi was used by students to create presentations on digital citizenship concepts to other grades and to their peers. Participant 7 observed that students included digital citizenship concepts such as digital footprints in their presentations. Students also used the social media tools Edmodo, Wikis, Vlogs, and Voki to globally interact with other students and those tools were used to facilitate handshakes and greetings as indicated by Participant 7. A Wiki was used to house students' research findings and students worked collaboratively with each other "writing and editing those Wiki pages" (Participant 7). Students engaged in social media collaboration to construct artifacts, to provide instruction to others, to get to know others, and to engage others in online learning activities.

Students also transformed their writing styles and online behavior as they collaborated globally online using social media tools such as Skype, Edmodo, and Google Docs. Students avoided using slang and used proper grammar and spelling "especially if it's somebody that they're collaborating with from another country" (Participant 8). Further, "they realized that they really couldn't text talk or anything like

that," and students wrote "more complete thoughts" when using Google Docs and Edmodo (Participant 8). Students adopted digital citizenship roles by making adjustments to their written communications for a more academic stance. Using multiple types of social media for global collaboration was part of students' digital citizenship projects, and this concept aligned with the tenants of connectivism such that students learned to select from and use technology appropriately when networking with others.

Social media also served to empower and motivate students as in the case of a particular ADHD student who was typically social but did not necessarily do well in traditional academic settings. Edmodo provided a new means for this student to take on leadership roles as described by Participant 6 such that Edmodo "helped him see himself as a leader when academically sometimes he was not a leader because putting pen to paper is difficult and concentrating for more than a few minutes is difficult." Further, Participant 6 explained the student was comfortable engaging others using social media and considered using social media as a way of socializing despite the fact he was actually doing work: "But he saw it as socializing instead of doing work and he would much rather socialize than do work." Social media motivated the student to become more academically proficient even if the student did not see his use of social media as task-oriented. The student engaged in social media collaboration as a social event but learned at the same time.

In summation, students developed as digital citizens by collaborating using social media. Students modified their online behavior as digital citizens by

filtering what they placed online. That is, students acted as digital citizens by writing in more cohesive and complete sentences. Students also avoided writing in text messaging style where incomplete sentences and word abbreviations are normally used. Students differentiated between academic and social uses of social media. Students used social media to connect with students across the globe in distant lands, and teachers reported that students found their global collaborative experiences stimulating, exciting, and motivating. As part of their introductions, students extended social media text and video handshakes to get to know their global collaborative team members. Students also learned to edit each others' work using social media as a platform for global collaboration. Further, students engaged in social media collaboration by designing presentations about digital citizenship topics that were shared with others in their academic communities. In the case of a particular student who thrived academically in a social media-infused global collaborative environment, social media helped the student overcome academic challenges that were present in traditional academic settings where social media was not used. The involvement in social media collaboration enabled students to expand their worldview to one that was less self-centered and ethnocentric.

Diminished ethnocentrism. The data showed that students grew as digital citizens by becoming less ethnocentric as they adopted worldly perspectives. For example, Participant 4 relayed that students "acknowledged a lot more of what was going on in the world and showed more of an interest in other countries, especially school

systems and what it's like to be at school in another country." Students' attitudes and perceptions were initially self-centered but transformed into attitudes and perceptions that were more globally curious, more globally aware, and more globally respectful. Students were enthusiastic about their foreign counterparts' lives including culture, geographic conditions, climate, and sports for example. Regarding cultural differences, Participant 1 relayed that students worked well with each other online and enjoyed identifying cultural differences among each other: "Online they were really happy to meet up with other cultures, and they would notice things, like the game that we Americans refer to as soccer, other people refer to as football. And they loved to seek those differences." As an example, in one of the global collaborative Wikis, a student queried her teammates about dress codes appropriate for different cultures: "I noticed that one of the questions for our topic was about being aware of what different cultures wear. Would you all be okay with sharing what your dress codes are like?" In response, another student provided the dress code appropriate for her culture at her school: "At my school, we can't wear anything too short. Shorts or skirts have to be longer than your fingertips. We can't wear skinny strap shirts. We can't wear anything that has an inappropriate symbol or word on it." Students took an interest in other cultures and engaged in research and discussion about dress codes appropriate for different cultures.

Other students used Skype to share pictures and ask questions of their global collaborative peers as they got to know each other. For example, students enjoyed Skyping each other to learn about their lifestyle and geographic/climate similarities and differences: "they were really quite interested in asking each other lots of questions about

where they lived and what it was like where they lived" (Participant 5). Students also

shared pictures of their locale with their global collaborative peers as a way to get to

know each other as indicated by Participant 5. Based on Participant 8's observations,

some students used Skype to see each other using video chat as well as to personalize

their collaborative experiences to "match a face with a name and they like to hear more

about the school and the climate and similarities with each other, favorites foods, and

sports, and things like that." As such, students grew as digital citizens as they became

less ethnocentric through their exploration of other cultures, lifestyles, and geographic

conditions when engaged in global collaborative projects for learning.

Students also took a deeper interest in world affairs and took responsibility for

their part in world affairs regardless of their location in that they "got a concept of that

even though they're just from a small school in rural south Australia it is their

responsibility to connect and interact with other people" (Participant 4). Those students

also considered the ethics involved with their responsibility as global digital citizens as

Participant 4 further noted: "there's a whole huge world out there that we need to take

care of, so that they definitely had an idea of sort of the ethics involved in digital

citizenship and what could come from it."

Participant 7 shared that she included in her teachings coverage of world views so

that her students would learn to see the world through a more global perspective despite

the type of mindset and lifestyle that is present in the affluent school district where she

worked. That is, she has encountered students and parents who presented themselves as

"American-centric and New York-centric," and she took precautions to have her students

avoid "coming off as that ugly American" (Participant 7). Participant 7 commented that

when helping students take on the roles of digital citizens she emphasized caring for

others online and described that doing so "mean[s] to be culturally caring and

compassionate and show empathy towards people." She stressed to her students while

using Edmodo that the world did not revolve around them, that they were to avoid putting

others down and making fun of their differences, their writing, or their handshakes.

Participant 7 found that "those were big lessons that had to be incorporated in setting up

any global collaborative project." Overall, her students took to heart those concepts

associated with digital citizenship despite the lifestyles to which they were accustomed.

In summation, students' ethnocentrism diminished as they became more aware of

the importance of collaborating with others on a global scale as digital citizens. Social

media was beneficial to students collaborating at a distance because they were able to

share with each other personal lifestyle details as well as what they looked like. Students

learned how easy it was to work with others at a distance and in doing so took into

consideration the ethics and responsibility associated with world affairs as they became

less ethnocentric as digital citizens.

The data presented thus far were aimed at answering Research Question 1 which

focused on teachers' perceptions about middle school students' development as digital

citizens when engaged in global collaborative projects. The data showed that students

were initially unfamiliar with digital citizenship as a comprehensive theme for globally

collaborating with others using social media. Students came to the global collaborative

digital citizenship projects with fragmented knowledge and limited understanding about

digital citizenship. Students grew as digital citizens as they adopted digital citizenship

perspectives, took digital citizenship actions, engaged in social media collaboration, and

became less ethnocentric. Students took on the roles associated with digital citizenship

by collaborating in the digital citizenship projects. This outcome can be compared to

students' fragmented knowledge and limited understanding about digital citizenship prior

to and at the onset of taking part in the global collaborative digital citizenship projects.

Research Question 2

Research Question 2 asked what teachers' perceptions were about strategies

middle school students used to overcome barriers to taking on the roles associated with

digital citizenship when engaged in global collaborative projects. The analysis of teacher

and administrator perceptions about the strategies middle school students used to

overcome barriers when taking on the roles associated with digital citizenship when

engaged in global collaborative projects focused on the following themes: (a) student-

developed intervention strategies; (b) teacher-developed intervention strategies. One

barrier emerged as a discrepant case and proved too substantial to be overcome: team

formation. To understand how students overcame barriers encountered while

participating in global collaborative projects, a brief introduction to the barriers is

provided.

Access barriers such as access to technology, online sites and tools, and the

Internet served as barriers to students becoming digital citizens. Participant 2 offered that

Website blocking and filtering caused some schools to exit the digital citizenship global

collaborative projects: "…some schools have just had to drop out of the project because

their IT department just couldn't unblock certain sites…So students have missed out because of that." Participant 6 also noted that Website blocking served as a barrier to students becoming digital citizens: "Our school district blocks much of social media. Students cannot get on Twitter or Facebook or Instagram on district devices or on the district network." Participant 7 relayed that technology failures restricted access to the Internet: "There are always technology barriers…we have technology failures on a monthly basis so there are times where we can't get on the Internet only because there is a larger Internet issue." Limited bandwidth also proved problematic and materialized as an access barrier as described by Participant 4:

> We do still have a problem at our school, though with the Wi-Fi and how many devices can download at one time because we use a lot of cloud-based technologies, and so that can be a little bit difficult…The output speed is the real issue. Yes, we've had to fight really hard to get that at a good level so that our kids can fully participate and not get frustrated by slow upload speeds and slow download speeds...

Participant 4 suggested that her students might fall behind due to parental restrictions associated with using the Internet at home: "…if their parents don't want them using the Internet at home then they get behind." She further elaborated that some students simply do not have Internet connectivity at home: "Sometimes our students didn't have Internet at home, that was a problem." Finally, Participant 6 offered that it could take ample time to unblock a Website for student use: "the tool that we were using was blocked by the school's filter and I had to make a request and it took quite a while to get it unblocked.

That was a problem." In summation, students encountered site blocking and filtering, technology failures, limited bandwidth and connectivity, lack of Internet access, and parental restrictions. Those barriers prevented students from having access to the technology associated with them becoming digital citizens in their global collaborative projects.

Teachers cited collaboration barriers as another type of barrier to students becoming digital citizens. Students lacked the experience and knowledge to effectively communicate in collaborative educational settings as described by Participant 2:

> Students don't know how to effectively communicate online when we're talking about communication for learning, not communication for socialization. And this is where the confusion comes in…So one of the big barriers is that we put students into these discussion forums or these Wiki collaboration situations, and they just have absolutely no idea how to do it. They have no previous skills in that online format.

Additionally, Participant 4 stated that some of her students simply were not comfortable with their novel experience of collaborating online with others: "it was just too difficult for them and they didn't really enjoy the challenge of interacting in that way." Several teachers relayed that editing the works of others was a barrier. For example, Participant 2 noted that students found it challenging to edit the content of a Wiki as they received push back from the students whose work they edited: "But examples like students saying, well, you edited the Wiki and deleted my work. And then another student coming in and say, well, oh I didn't mean to delete your work. I thought this looked better." Participant

4 shared similar collaboration findings associated with her students' use of the online tools to edit the works of others when using Google Docs: "…when we were working with Google Documents if somebody found the other schools had deleted what they had written or edited it our kids were really, they got a little bit upset about that." A similar experience was shared by Participant 7 as her students found it challenging to correct the work of other students when collaborating online. Participant 7 stated:

> You know, I think my students, especially maybe their age are intimidated about telling somebody like this doesn't sound right or can you revise this and directing different like being that like group leader so there was definitely an intimidation factor there of coming in and like I don't want to tell them that that sounds wrong.

Participant 8 stated that when her students collaborated using a Google Document a lack of comments elicited emotional responses: "It was more of an issue when somebody didn't comment that, I wouldn't say it's offended them, but angered them, just a little bit." She also offered that the type of sentence completion and writing style served as a barrier: "And also, my students were taught to type and write in a, in a complete thought manner and then when they saw someone writing, you know, slang or text talk, they didn't know what to do." The examples demonstrated that barriers to effective online collaboration and digital citizenship arise when students do not have the skills needed to effectively communicate in a collaborative online setting. Proper sentence construction, language usage, language selection, editorial etiquette, and using social media tools to collaborate at a distance online served as collaboration barriers to students becoming digital citizens.

A lack of timely responses from students in other areas of the world served as response lag barriers to students' global collaboration and students becoming digital citizens. Participant 2 spoke about a lack of timely responses as "a major barrier" in online asynchronous collaborative communications: "And one of the main frustrations that people talk about in the projects is that people don't respond in a timely manner. Students don't respond, teachers don't respond." Similar sentiments were shared by Participant 1 who explained that students were confused by and did not know how to manage response lags: "They didn't know how to respond when they didn't get a response. …there was a huge time lag between when we posted and when we should look for their response." Because of response lags students lost interest in their global collaborative projects as described by Participant 4: "…when you're waiting for a response from another group member and it's not what you expect or not in the timeframe you expect some of them just lost a little bit of interest." Participant 7 explained that responses came quite late which left a communications void in the global collaborative projects. This idea was reflected when this participant stated:

> They might only get into their computer lab like once or twice a week so my students would write something and then there wouldn't be anything there for like a week and then it's like okay, what do you need to do in between that time that we're waiting for a response? So that was the type of challenges that had to be filled in that we don't have control over because every teacher who is participating in the flat connections has to work within their own school schedule and their own teaching schedule.

Schedule conflicts also contributed to response lag barriers as described by Participant 5:

"The issue as you know is the time to actually find to make a connection…but like I said,

it was over the Christmas break so we kind of had to sort of drop out a little bit."

Participant 7 cited vacation schedule differences as barriers when collaborating globally:

"Time is a huge component doing global collaborative projects especially when some

people are on vacation and others are not or then you go on vacation depending on the

school schedule." Time zones were also associated with response lags, and Participant 2

called for learning how to communicate asynchronously to avoid miscommunications:

"The time zone, of course, is a barrier. But students work mostly asynchronously. So

they need to learn how to respond regularly. This is the thing…So this is a barrier of

understanding how to communicate and not miscommunicate." Response lags attributed

to time zone barriers and time available to collaborate were cited by Participant 8: "You

know, it took a while to get a response back and that's due to not only time zones, but the

time that they had available in another classroom to comment." In summation, students

experienced response lag barriers which caused confusion and frustration to the point of

losing interest in their global collaborative projects. Response lag barriers negatively

impacted student collaboration when participating in global collaborative projects.

Student-developed intervention strategies. To overcome barriers to students

taking on the roles of digital citizens when participating in global collaborative projects,

students developed strategies on their own that revealed three themes: (a) leveraged

peers; (b) developed communications schedules; (c) persevered by taking ownership of

their problems. Students *leveraged peers* and worked through problems to overcome

collaboration barriers. When response lag barriers were encountered in the global collaborative projects students pieced together *communications schedules* on their own. Students also *persevered by taking ownership of their problems* and by using tools to overcome barriers when collaborating globally as digital citizens.

Leveraged peers. Peer involvement was the key strategy students used on their own to overcome global collaboration barriers. When editing others' Wiki content, students interacted with their online global collaborative peers to formulate methods for editing others' work without involving help from teachers as indicated by Participant 2:

But examples like students saying, well, you edited the Wiki and deleted my work. And then another student coming in and say, well, oh I didn't mean to delete your work. I thought this looked better. And there's this conversation that develops. And then by the end of it--and, of course, this is asynchronous opposite sides of the world; it takes a few days for the conversation to really play out. And they've basically solved the problem.

Local peers also served as providers of help when collaborators were not available online for collaboration: "When they couldn't find a partner or someone to critique, they just turned to their neighbor, basically, for people in the classroom" (Participant 8).

Participant 4 also shared that her students sought help from their peers: "I don't have any more answers as to how students overcame problems yet, apart from discussions with teachers and working with their peers. I guess those are my two go-to's." Participant 2 reminded us that "Students don't know how to effectively communicate online when we're talking about communication for learning, not

communication for socialization." To summarize, when permitted to solve their own problems, students involved their local and global peers to establish a global collaboration methodology to overcome collaboration barriers associated with students taking on the roles associated with digital citizenship.

Developed communications schedules. When students encountered response lag barriers they discovered communications schedules associated with when they could expect to see responses from their global collaborative peers. Teachers did not make this explicit as they, too, had no knowledge in advance about when other school students and teachers would participate in the global collaborative projects. For example, when speaking about her students looking for responses from global collaborative peers, Participant 1 commented that:

> So a lot of schools didn't have class every day, which we don't either, and for
> them to figure out, well we had class on Tuesday and the next class, in addition to
> the time change, maybe doesn't have class until Friday, so you can't look for a
> response from them until next week or the week after was an adjustment they had
> to make.

Differences in school calendars were also offered as barriers students faced and overcame on their own based on Participant 4's observations: "The differences in the school calendar year, they really had to overcome, as well." Students incorporated this theme into their action projects to present to others the challenges associated with working online across multiple time zones as demonstrated in the following student reflection:

Our presentation was about interacting globally online with other people. We told how to interact with people in different time zones and also how to do work online. The presentation was helpful because it can help with interacting with friends and family online who live far away.

Students devised their own strategies to overcome response lag barriers by determining when to expect replies from their global collaborative peers. The data did not indicate that teachers assisted students with this particular discovery process. This is likely due to teachers discovering the same along with their students.

Persevered by taking ownership of their problems. Students also persevered as a strategy to overcome team formation barriers where differences in grade levels, age, and maturity compounded the challenges for students becoming digital citizens. Although team formation barriers are part of a discrepant case in this research study, it is worth noting how students challenged the team formation barriers on their own. Participant 3 offered that her students were strong-willed and "persevere[d]" through communications challenges that arose from differences in grade levels, age, and maturity that occurred due to team formation barriers. With respect to her students' global collaboration challenges, Participant 3 relayed that her students "worked through it," and "they took the time" needed to keep up with their side of the digital citizenship global collaborative project despite the struggles they faced. Specifically, Participant 3's students made several attempts to read and reread the information they received and some students enlisted the use of "dictionaries and online thesauruses" to "rewrite, reword what they had read in their own words." Such students took on the roles of digital citizens by enlisting

additional resources such as online tools to help make sense of the information provided to them by their older global collaborative peers. This is an example of using knowledge that resides in non-human forms online and helped students interpret information that was initially too complex to understand. This scenario adheres to the principles of connectivism such that students creatively connected to non-human information repositories to assist their learning and problem solving.

In summation, students developed strategies to overcome the barriers of collaboration, response lag, and team formation barriers to becoming digital citizens. To overcome those barriers students initiated strategies that involved their peers, devised communications schedules, and persevered by taking ownership of their problems. When left to their own devises, students were successful with their efforts to overcome certain barriers associated with them becoming digital citizens. Teachers also provided assistance when students needed additional help with overcoming barriers to their success as digital citizens.

Teacher-developed intervention strategies. Teacher involvement was a strategy used to overcome barriers to students becoming digital citizens for the following barriers: technology access, collaboration, and response lag.

Strategies to overcome technology access barriers. Barriers to proper technology access were encountered by students when they were not able to access the Websites and social media tools associated with the global collaborative projects. Participant 6 offered that she requested her school's Website filter be adjusted to allow access to the necessary online tools: "Well, the first year I did it, the tool that we were using was blocked by the

school's filter and I had to make a request and it took quite a while to get it unblocked."

Another solution provided by Participant 6 when using social media for global

collaboration was for students to use their own devices. This idea was supported when

Participant 6 stated:

> Our school district blocks much of social media. Students cannot get on Twitter
>
> or Facebook or Instagram on district devices or on the district network. So, if
>
> they want to get on those social media things, they have to use their phones. And
>
> most of them do constantly.

Participant 2 called for teachers taking a proactive approach to technology access by

pushing for lifting Website and tool blocking: "So many things are blocked here. So

many teachers don't understand and, therefore, don't ask for them to be unblocked and

just work within the constraints without really pushing the barriers. We need a lot more

teachers to push the barriers and a lot more teachers to understand the power of global

collaborative learning." Bandwidth and simultaneous connection barriers were also

encountered and Participant 4 suggested that teachers fight for appropriate technology

access. This idea was supported by the following statement made by Participant 2:

> We do still have a problem at our school, though with the Wi-Fi and how many
>
> devices can download at one time because we use a lot of cloud-based
>
> technologies, and so that can be a little bit difficult…it's something that you have
>
> to bring up and we've had to fight for a lot with our Administration to get more
>
> funding to get the access, the Internet access, and the download and upload speed.

Students' access to technology may also be hampered when parents do not provide

technology access at home as described by Participant 4: "Sometimes our students didn't

have Internet at home. That was a problem. Sometimes their parents are very

conservative and didn't want their students interacting online at home, so we have to - we

had to take all that into consideration." The solution provided by Participant 4 was to

involve parents and the administration in a comprehensive effort, and Participant 4 stated:

> I think we've got to turn around the perception that parents aren't involved in their
>
> children's education and really involve the parents in what is going on at school.
>
> And I think that can overcome some of your challenges, too, because if you've got
>
> a kid that's not engaged and not doing what you've asked them to do at home in
>
> regards to global project and the parent knows that they need to do something
>
> then they can help encourage the child as well. And getting the whole school
>
> onboard also is difficult, but I think that - so other teachers know what the kids
>
> are doing so that they can encourage them and say, oh, well, that's really special
>
> that you guys got that at school today. So, yes, really I guess getting the whole
>
> school community onboard with global projects would overcome a lot of the
>
> challenges.

In summation, although some barriers to technology access might be easily overcome

with teachers' help with lifting site blocking, other barriers to technology access may not

be so easily overcome. Where technology infrastructure is concerned such as in the case

of bandwidth, simultaneous connections, and hardware devices, teachers may face their

own barriers when convincing administration that further investment in technology is

needed. Parents, too, may serve as barriers to technology access, but as Participant 4 noted, involving the entire school community may help promote open access to technology.

Strategies to overcome collaboration barriers. While teachers generally allowed students to overcome barriers on their own, teachers were also instrumental at developing strategies to help students overcome collaboration barriers for students engaged in global collaborative projects. Participant 4 shared the following when her students used Google Docs collaboratively with global peers: "we had to say, look, this is about global collaboration, everything is open for editing and you do need to communicate, though, with your group before you edit and keep those communication lines open." Collaboration barriers associated with students editing their global peer's additions to Google Docs files were overcome by teachers providing guidance.

Differences in grammar usage were problematic for students engaged in global collaboration as described by Participant 8: "And also, my students were taught to type and write in a, in a complete thought manner, and then when they saw someone writing, you know, slang or text talk, they didn't know what to do." Her solution was to simply guide her students by offering suggestions about how to overcome the barrier: "So, I just told them just to, you know, read what they had to say and then comment in a complete sentence and a complete thought. And, that was fine with them" (Participant 8). The students essentially modeled good writing behavior for their global collaborative peers.

When engaged in global collaboration, some students may not understand their global collaborative peers due to differences in regional or cultural uses of language as

described by Participant 2: "And every culture, of course, has their own words for various

things." To overcome regional differences in the use of language Participant 2 suggested

that students may need to "use words that are more global." To overcome cultural

differences in the use of language Participant 2 also suggested that:

> …if you don't understand what the other person is saying to question it. Always
>
> question. What is that word you used? We don't use that, what do you mean?
>
> And every culture, of course, has their own words for various things.

As an example of the above, students encountered barriers related to online etiquette and

cultural difference during their global collaboration as Participant 1 described one of the

global collaborators said to her students "I'm watching you sleep." Participant 1's

students were concerned and had a negative perception of the comment "And my kids all

responded to that like, ewww! This is really creepy! We don't like that." It was revealed

that the global collaborator "was pointing out to another student that he could tell that she

wasn't participating…but the way it came across to my students was more like, ew, he's

stalking us." The example was used by Participant 1 to demonstrate differences in

perception when collaborating globally: "…That was a teachable moment. We could use

that example to say, see what you post online does, is interpreted by other places and

other people in different ways." Participant 1 moderated the discussions to help students

collaborate effectively online. When differences in perception occurred in the meaning

of communications, teachers used those examples and assisted students with clarification

about online behavior appropriate to digital citizenship.

Strategies to overcome response lag barriers. The final area in which teachers intervened to assist students with becoming digital citizens was when students encountered response lag barriers or a lack of timely responses from their global collaborative peers. When students' interest in their global collaborative projects waned due to response lags associated with their global collaborative peers' lack of responses, Participant 7 used filler activities and focused on students' research skills: "I would fill in with lessons or other like anchor activities to just help my students in terms of collecting more data and research or to work on something." Participant 7 added: "that's where I as a teacher had to come in and fill in like what else can they do or add another lesson here because we're not collaborating every single day."

As global collaborative peers sometimes appear to be missing from the global collaborative projects due to response lags, teachers such as Participant 8 reached out to other teachers participating in the global collaborative projects for assistance: "I contacted the teachers to let them know that this group was looking for some collaborators or some critiquers and we were able to get a few more that way." To demonstrate the benefits associated with global collaborative projects as well as challenges with locating additional students for her team, a student offered the following reflection:

> Working on this project was both fun and difficult. The project taught me about being a good digital citizen, it also taught others on how to be a good digital citizen. The most difficult part of this project was when my partner and I tried to get a third person from Edmodo for our group.

The experience was beneficial overall, but finding additional global collaborative partners proved challenging. As described by Participant 8, teachers needed to intervene so that global collaborative experiences were afforded to all students participating in the projects. Response lags and lack of participation were barriers to students taking on the roles associated with digital citizenship. Teachers made efforts to reach out to their own peers to locate students for global collaboration.

A different perspective on response lag was relayed by Participant 2 who took action against response lag or potentially no responses by instructing her students to post when her students could not see their global collaborative peers present in the Wiki. This idea was supported when this participant stated:

> I had one student in my class a few years ago who said, well, I'm reading everything. And I said, well, we can't see you reading. Your partners in the USA can't see you reading. They need to see you responding because they can't hear your thoughts. They need to see what you're thinking by you responding to the discussions and contributing to the Wiki. So this is a barrier of understanding how to communicate and not miscommunicate.

As Participant 2 suggested, response lags and a lack of responses may lead to miscommunication. She also offered that digital citizenship is "about becoming active digital learners, hands on the tools, learning how to communicate, learning how to communicate within the class and beyond the class, and learning how to share that knowledge." Thus, to combat response lag barriers, Participant 2 coached her students about effective communication techniques for visible online global collaboration.

In summation, students relied on teachers' feedback and actions to overcome barriers associated with access to technology, collaboration barriers, and response lag barriers. Students and teachers were able to overcome barriers to students becoming digital citizens. One exception to this finding is the case of Participant 3 whose students encountered team formation barriers and were unable to effectively overcome this barrier. Otherwise, the data showed that teachers helped students overcome barriers associated with students' taking on the roles associated with digital citizenship.

Discrepant case. One teacher only noted that the formation of teams associated with her students and the global collaborative peers to whom they were assigned served as barriers to her students becoming digital citizens. Although students' differences in age contributed to communication and collaboration barriers of those students, incorrect team formation was the root cause of those barriers. No other cases were associated with team formation barriers which leads to this nonconforming case being categorized as a discrepant case.

Participant 3's students were fifth-graders who were ages 10 to 11 paired with global collaborative peers in high-school. Participant 3 supported this idea by stating the following: "And that--you know, that one I signed up for, like I said, was 5th through 8th graders [Digitween] and then Digiteen was 9th through 12th graders and we were all put together. So, yes, that was the problem." To further characterize the team formation barrier Participant 3 noted that: "…not all the kids in the groups with my 5th graders were seniors. But there were a bunch and there might have been a sophomore and an 8th grader and, you know, they were all mixed up together." Specific to the team formation

barriers, the fifth-grade middle school students simply "couldn't overcome the age range" as the younger students "couldn't relate and they didn't understand what they [older students] were talking about" (Participant 3).

Where communication and collaboration were concerned, Participant 3's younger students had difficulty understanding their older peers' writing. Participant 3 provided assistance to her students by framing the older peers' feedback in a manner that was easier for her students to comprehend: "I would give them an example at their level that would try to help them understand that section that they were reading." Further, Participant 3 dissected the information into smaller components and involved the school's technical facilitator for additional assistance as she demonstrated in the following statement:

> So, you know, I break it down and be like--well, think of it like this or this what they mean and fewer, shorter, smaller words…Along with the help of the librarian our tech facilitator, we tried to find--when we saw that those weren't working, we tried to find other things for them to read to try to get the same information but at their level.

However, in the case of middle school students working with high school students, the younger students simply were unable to learn with older students, and Participant 3 found that her younger students "couldn't overcome the age range" as the younger students "couldn't relate and they didn't understand what they [older students] were talking about." Because of the team formation barriers, Participant 3 ultimately determined the best course of action was to drop out of the global collaborative projects. "I wasn't

getting anywhere and it was just frustrating for me and I said to the kids, you know, we're going to quit this project. …when I said that they were like, 'Ah! Thank God.'" In summation, poorly formed teams created communication difficulties and challenges for students participating in global collaborative projects. Team formation barriers proved too significant to be overcome, and the younger students and their teacher dropped out of the global collaborative projects. Although Participant 3 noted to her students that they would continue their digital citizenship studies on their own, students missed out on the opportunity to collaborate with global peers as they studied digital citizenship.

Research Question 2 asked what teachers' perceptions were about strategies middle school students used to overcome barriers to taking on the roles associated with digital citizenship when engaged in global collaborative projects. The data showed that students encountered the following barriers to becoming digital citizens: access barriers, collaboration barriers, and response lag barriers. The following patterns emerged with respect to how students overcame barriers to students becoming digital citizens: student-developed intervention strategies and teacher-developed intervention strategies. Students involved their peers, discovered communications patterns and schedules, and persevered on their own. Teachers helped students by providing access to technology, promoting collaboration, and guiding students past response lags. One discrepant case emerged from the data such that team formation with too large a gap in participant ages proved too difficult to be overcome despite students' and their teachers' effort at doing so. Despite the discrepant case, student and teacher strategies for overcoming barriers to students

becoming digital citizens proved beneficial to students becoming digital citizens when engaged in global collaborative projects.

Research Question 3

Research Question 3 asked what teachers' perceptions were about the use of social media and global collaborative projects to enhance middle school students' digital citizenship and academic achievement. Teachers reported that their students had enhanced digital citizenship and academic achievement as a result of students participating in global collaborative projects in which social media facilitated communication and collaboration. The analysis of teacher and administrator perceptions about middle school students' development when engaged in global collaborative projects focused on the following themes: (a) enhanced digital citizenship and awareness; (b) enhanced social media use and awareness; (c) enhanced academic versus recreational uses of social media; (d) enhanced academic achievement. A discrepant case of *no academic achievement* emerged from the data.

Enhanced digital citizenship and awareness. Students initially became aware of digital citizenship and what it meant to be a digital citizen when they collaborated with students in a global setting. Students' digital citizenship awareness and understanding were enhanced by participating in the global collaborative projects as described by Participant 7: "I think it brought more of an awareness just to understand when we talk about global collaboration and digital citizenship and that the world and this whole flat connection idea I think it just enhanced their understanding." Similar sentiments were

relayed by Participant 4 who observed students' global perspectives in their writing. Participant 4 commented:

> I think that I can confidently say that it did enhance their digital citizenship because when we looked at the reflections that they wrote rather than grading, they did learn to understand a little bit about other problems in the world, that we need to - and the importance, I guess, to join together to solve those problems.

Although students' digital citizenship awareness was enhanced during their participation in the global collaborative projects, students found that digital citizenship was not a simple learning exercise as Participant 6 relayed that her students "learned that digital citizenship is more complex than they first thought." As a case in point, Participant 6 relayed that when collaborating with their global peers, students "were shocked at the grammar and the sentence structure" used by students from an Asian country. Students also garnered insight about collaborating online per Participant 5's observations when students used Google Docs.: "They actually gained some just knowledge about the impact of working online and those types of things. And through all the variety of docs they could all learn a bit about different areas and digital citizenship." Participant 4 paralleled Participant 5's sentiments about working online when speaking about making global connections online: "And so understanding those types of connections should help them understand that in a global world of collaboration they could be working with anyone, anywhere, anytime." The global collaborative aspect of digital citizenship was associated with the importance of taking action using social media as described by Participant 6:

And I think they gained an awareness of how important and fortunate their generation-you know, we put emphasis on this-how important it was to their generation to sort of take charge, and even though you're a teenager you can use social media and use your connections and your communication skills to make a difference in the world positively.

Acknowledging diversity among online collaborators, Participant 6 noted that her students grew as digital citizens: "I think they did because they recognized that not everyone who uses social media comes from the same background as them." In support of this teacher's perspective, a student gave a reflection about meeting new people and diversity: "I did get to work with other schools and students it gave diversity and a wide range of new people to meet." Students also garnered an appreciation for connectedness on a global scale when following others using social media as Participant 4 noted:

Our school doesn't have a Facebook page, unfortunately, but some of the schools we worked with did, and it was fun to sort of follow their Facebook pages and keep in contact with what they are doing, and I guess have a developed sense that we don't exist in a bubble, we're actually all interconnected in our world together. Which, I guess when you're a teenager, sometimes you're a little bit egocentric so hopefully it helped. I do think it did help them grow beyond that a little bit.

In summation, students' digital citizenship was enhanced when they participated in global collaborative projects. Students' awareness of global digital citizenship was cited as a first step toward students becoming digital citizens. Social media was used as a means for students to develop and practice their digital citizenship skills.

Enhanced social media use and awareness. Students' became aware of specific topic areas associated with digital citizenship and practiced their digital citizenship skills using social media when collaborating globally with peers. Participant 4 stated that students' awareness for social media grew: "I think they grew, I think that awareness and their understanding of social media definitely grew." For example, students were exposed to the topic of digital footprints when using social media as Participant 6 described: "It seems to be the lesson is about being more careful with your digital footprint. I think those were taken to heart." Students did take to heart the concept of digital footprints and the permanence of online data with respect to how actions taken online can affect individuals' entire lives. In her reflection, a student relayed this sentiment, her enthusiasm for the project, and comments on cyberbullying:

> We learned so much from this project! For example, we learned not only should we try to stop cyber-bullying, but we should also prevent it! What we mostly liked about this project is that we could possibly help some people. We realized that you should be careful over the Internet because it could have negative impacts on your entire life! Almost half of the percent of people are being cyber-bullied every day. Not only does cyber-bullying hurt on the inside, but on the outside as well.

Students globally collaborated with others and learned about using social media in potentially negative ways as well as how their actions on social media contributed to their digital footprints such that such actions remain associated with them for a lifetime.

Students took actions as digital citizens by sharing their research with others using social media.

Participant 6 also discussed cyberbullying with her students and how a person's character is presented on social media. Participant 6 commented:

And we also talked about cyberbullying and how to speak up if you see something wrong. And, like, give them, like, these personal anecdotes and things that I've seen. And talk about the person that you are at your core. You're reflected by the way that you interact on social media.

Students also garnered experience with Google Docs and investigated copyright laws when working with digital citizenship topic areas and social media per Participant 5's reflection:

Each of the groups was designated a type of [digital citizenship] area to look at. So for example, one of them was copyright, the other one was, there was about 60 areas. One was use of social media type; yeah the impact of social media.

Social media provided students the opportunity to greet each other with a virtual handshake, and students used Skype to see each other while exchanging dialog as noted by Participant 4: "They did their handshake on using social media. So getting to know each other, introducing themselves, sending short videos of what they liked to each other, which they really enjoyed." Participant 8 relayed similar experiences when using Skype in global collaborative projects:

They like to match a face with a name and they like to hear more about the school and the climate and similarities with each other, favorites foods, and sports, and

things like that. They enjoy that kind of, of an interaction through, through

Skype. Edmodo, they use that as well.

Edmodo was a popular tool used during the global collaborative projects as noted by

Participant 1: "Our platform for discussion was Edmodo this year, which is, looks a lot

like Facebook." Other teachers, including Participant 2, Participant 3, Participant 4,

Participant 5, Participant 6, Participant 7, and Participant 8, used Edmoso as well.

Students seemed to prefer Facebook over Edmodo, and enjoyed using Instagram per

Participant 4's account:

> I used Edmodo with my students as part of the classroom, as well, but they
>
> thought very much it was not as cool as Facebook, and I think they logged onto
>
> Facebook a lot better. They love Instagram, I think that they can find anybody on
>
> there.

Edmodo, blogs, Wikis, and Voki were used by Participant 7's students to meet their

global collaborative peers as well as to collaborate globally. Participant 7 offered the

following statement in support of this idea:

> Well the Edmodo was used for handshakes and hellos and students did a few blog
>
> posts or created a video or a vlog. We even used Voki to introduce ourselves and
>
> interact and get people's ideas and research and then we moved on to the Wiki to
>
> actually put the information up about digital citizenship and collaborate with the
>
> other participants in collaboratively writing and editing those Wiki pages.

In summation, students' digital citizenship was enhanced by using social media in global

collaborative projects. Social media tools such as Edmodo, Skype, and Voki were used

to exchange virtual handshakes and introductions. Social media tools such as Edmodo,

Wikis, and blogs were used to collaborate with their foreign peers on a global scale.

Students enhanced their digital citizenship by becoming aware of social media and using

social media to engage their global collaborative peers. Students also learned to use

social media for academic purposes as their perceptions of social media were enhanced

through global collaboration.

Enhanced academic versus recreational uses of social media. Students' digital

citizenship was enhanced by differentiating between using social media for recreation

versus using social media for learning. Participant 8 offered that students tend to use

social media for pleasure rather than for learning when interacting with friends outside of

school. Participant8 commented: "They use it in a general, personalized sense. It's more

social, not really learning, necessarily." Participant 2 suggested that students did not

necessarily realize that their personal use of social media could be used for educational

benefit and stated:

> I think students don't realize that what they're doing ubiquitously with their social
>
> media is actually a great way to learn because I think still most classrooms in the
>
> world are still too traditional, too much focused on textbook learning.

Students initially brought their recreational or personal use of social media with them

when collaborating globally with others in educational settings as described by

Participant 1:

I think their personal use of social media was what their expectations were to start

with, and we had to teach them that, and the project kind of taught itself, that you

can't use social media for a learning project the same way you do personally.

By participating in global collaborative projects in which social media was used for

communication and collaborative purposes, students garnered experience with using

social media in an academic setting. Students were afforded opportunities to practice

using social media for collaborative learning purposes in a hands-on setting. For

example, Participant 1 offered that her students concluded that posting non-academic

socially-oriented content to an academic discussion area in Edmodo proved unfruitful in

the following comment:

…at the beginning of the project, the kids were really crazy to put stuff out there.

They wanted to get a lot of posts and a lot of likes. And it didn't take too long to

figure out, hey, we can't do that. It's taking up too much space. We can't find

what we're looking for… So it didn't take them long to figure out that what you

post has to be class related and not a lot of that just conversational, hey, how are

you kind of thing.

Participant 2 also spoke about students coming to the realization that the social

media tools can be used for productive purposes in academic settings in her

reflection:

…students learn that a range of tools that are very much like or the same as their

social media tools, they are social media tools, can be used for connecting to other

people for the purposes of learning together and for learning with and from each

other and to build things together. …And even though perhaps they're probably

doing that sort of thing already in their social lives, they just don't realize it.

To support Participant 2's perspective on students using a range of tools for connecting

with others, a student offered similar enthusiasm in his reflection:

I had lots of fun working on the project with my partner Ethan. We learned about

a lot of different applications that will help us keep in touch and we learned about

how to stay safe while keeping in touch. I think that we learned a lot and taught a

lot during the project. It was a very cool experience.

Based on those accounts, students garnered hands-on experience using social media for

global collaboration, and students enjoyed the experience as well as relayed their findings

to others. Students took on the roles of digital citizens in an academic setting.

Students were also introduced to professional and personal personas online as

described by Participant 6:

We did talk about the difference between your professional persona and your

personal. And we talked about the different kinds of language you would use.

Actually, I do that lesson when I do e-mail for school because we talk about

creating a professional signature and using fonts that are professional and colors

and highlighting and things that you would use as your personal account are

different from the way you would show yourself professionally.

Students ultimately differentiated between personal and educational uses of social media

as they collaborated with global peers as digital citizens. For example, Participant 8

described how students' writing and communication became more academic: "They are

using less and less text talking and slang and more complete thoughts, which I really

liked. And they are comfortable introducing themselves and they have the tools in which

to continue the conversation." Participant 2 remarked that students garnered confidence

to learn when using social media: "We've got other students documented that have gained

confidence, this confidence to be able to learn." Further, Participant 2 offered that some

students benefited from participating in the global collaborative projects as they entered

into college as indicated in Participant 2's reflection:

> In my past experience with the projects we've seen middle of the road students
>
> who have done really well with the whole approach and participation in global
>
> collaboration to the point where there's an example of a girl in Georgia who was
>
> offered an honors program at university because she was able to talk about and
>
> show evidence of her participation in the global project.

In support of students garnering confidence as a result of taking part in global

collaborative projects, a student commented in a reflection that: "This helped me have

more confidence. I feel this made me more comfortable talking in front of people." The

student learned about cultural awareness, how it affects others, and that people should

think first before posting a message online so that comments to others are respectful.

That the student presented his findings to others, he gained confidence in presentation

skills as well as confidence about online etiquette.

An additional example demonstrating how students benefited from using social

media for learning is Particpant6's student who collaborated better online than in person:

The one kid in particular that is extremely social he has ADHD and he loves

Edmodo. He loved to just get on there and try to chat with people and start

conversations. And that helped him see himself as a leader when academically

sometimes he was not a leader because putting pen to paper is difficult and

concentrating for more than a few minutes is difficult. But the paces of the social

media pieces was comfortable for him.

In summation, students differentiated between personal and academic uses of social

media for global collaboration. Students refined their perceptions about how to use social

media in academic settings such that care must be taken when posting online as well as to

avoid posting content that does not relate to the academic tasks assigned to them.

Students also garnered confidence to learn when using social media. Some students were

more comfortable interacting with others using social media than they were when

interacting in face-to-face settings. Other students leveraged their digital citizenship and

global collaboration experience favorably when entering college. As such, students

benefited from using social media in an academic setting, and differentiated between

academic and personal use of social media. Students made connections and worked with

other students using social media, and doing so enhanced students' digital citizenship and

use of social media for collaborative learning and problem solving.

Enhanced academic achievement. Students' digital citizenship was enhanced

by improving their writing skills as they came to understand that their audience on social

media is potentially the world. With this audience in mind, students took care to post

high-quality written work. Students also identified poor writing and grammar skills in

their global collaborative peers' work, and modeled good writing for their peers' benefit.

As Participant 1 reflected:

> …they become more respectful, if you look at that aspect of digital citizenship…I
> think I've seen a better, more genuine compliment instead of the...yeah that's
> good, or I agree, I'm, we're, we're getting a little deeper level of conversation and
> compliments, if you will, instead of just all about me. There's a little better
> conversation that goes on when they're in digital spaces.

Students also improved their writing by globally collaborating with others using social

media. For example, Participant 3 found that her students improved their writing by

including appropriate levels of detail and by learning to cite and quote the works of

others. Participant 3 shared the following:

> I think it just helped them academically in their writing and the way they spoke or
> used--I don't want to say words--but it just made them more aware of when they
> were writing something to be as detailed as possible and also just the fact that you
> can't just copy something… It was just really a wake-up call about the whole
> writing, and the citing, and the quoting, and overall that helped them to better
> understand it.

Participant 3 found that students learned to evaluate the writing of their peers: "some of

them were using it [social media] as like, wow, that kid needs to work on his grammar."

Further, as students took on the roles associated with digital citizenship when engaged in

the global collaborative projects, their digital citizenship skills transferred to other areas

of the classroom based on Participant 3's account: "So, it made them more aware

academically, which I then saw carried over when we were doing another project in class." Participant 4 echoed the perceptions held by other teachers about students' academic achievement and the importance of using social media in global projects, but did not cite specific examples about how students improved academically. Participant 4 indicated that:

> I think they did grow through the use of social media academically. I think that did help them. I think you have to use it when you're doing a global project because it's that instant feedback in that communication, and I don't think you can do that just through sending e-mails or doing something in your group and then sending it at the end to another group because that's not really collaboration.

As Participant 4 suggested, students garnered experience with the instant type of feedback afforded by the use of social media. That is, students learned how to collaborate globally using social media, and learned that global collaboration using social media removes the physical barrier associated with distance. This notion was made concrete by Participant 5 regarding online connections: "And so understanding those types of connections should help them understand that in a global world of collaboration they could be working with anyone, anywhere, anytime." Having participated in global collaborative projects, some students leveraged their digital citizenship awareness and skills to engage in other academic activities as well as to take on leadership roles. For example, Participant 4 described how some students took part in global conferences, engaged other schools, and used social media to accomplish additional tasks. Participant 4 supported this theme in the following reflection:

There were some real standouts among them, and they've gone on to global

conferences and be part of being interviewed by other teachers and being part of

programs where other schools have asked to chat to them about their experiences

and, yes, they've gone onto bigger and better things really and really gotten into

moviemaking, sort of the final project you do after the Wiki, the collaborative

Wiki space, in the digital project is you can make a movie or you've got to get out

this idea of digital citizenship somehow and share that with the other kids in the

group.

Another student leveraged social media to take on a leadership role when he was

unable to do so otherwise. As Participant 6 suggested, this student was

comfortable using social media and viewed it as socializing rather than working.

This idea was reflected in Participant 6's statement:

The one kid in particular that is extremely social he has ADHD and he loves

Edmodo. He loved to just get on there and try to chat with people and start

conversations. And that helped him see himself as a leader when academically

sometimes he was not a leader because putting pen to paper is difficult and

concentrating for more than a few minutes is difficult. But the paces of the social

media pieces was comfortable for him.

It is clear that students were able to garner digital citizenship awareness and put into

practice digital citizenship skills they learned in the global collaborative projects.

Students modified their writing habits, differentiated between good and poor grammar in

social media, and used their digital citizenship skills in other course assignments and in

conjunction with other schools and outsiders. Some students took on leadership roles and used social media to overcome barriers to academic proficiency. Exposure to and practice with social media enhanced students' digital citizenship and afforded students the opportunity to grow academically in global collaborative learning and problem solving environments.

Discrepant cases of no academic achievement: Two teachers were unable to cite whether their students' academic achievement was enhanced by participating in global collaborative projects. When prompted whether her students' academic achievement was enhanced by social media and global collaboration, Participant 8 commented: "No. I didn't notice. I didn't notice any differences. But see, I don't give grades, so I don't really know." In a similar case, Participant 7 perceived that social media and global collaboration did not have any effect on her students' academic achievement. Participant 7 stated:

> I don't know how, I mean my top notch students are top notch outside of my class
> as well as in my class in terms of their achievement and success. So, I mean
> students took on their, students played their roles that they would in any class. I
> don't see global collaboration like getting more students involved…So I don't
> know if it really impacted academics or like students' interest levels.

When prompted about whether social media and global collaboration enhanced students' academic achievement, the following participants were unable to comment or offered that they did not grade students in the global collaborative projects: Participant 1, Participant 4, Participant 5, Participant 7, and Participant 8. For example, Participant 4 responded: "I

didn't grade them, at all. So I didn't actually keep track of any academic progress. And so I can't really talk about that for the Digitween one." Teachers were generally unable to comment about academic achievement based on students participating in the global collaborative projects. This was typically a result of not assigning grades to students for their participation in the global collaborative projects.

Research Question 3 asked what teachers' perceptions were about the use of social media and global collaborative projects to enhance middle school students' digital citizenship and academic achievement. The data showed that students garnered an awareness of global digital citizenship and social media as used for global collaboration. Students' awareness was attributed to increased digital citizenship. Students also differentiated between using social media for learning and using social media for recreation. After engaging others in a global collaborative format and studying digital citizenship, students improved their academic writing. Students also took on leadership roles and applied what they learned about digital citizenship to other areas of the classroom and beyond. A discrepant case associated with no academic improvement emerged from the data. Despite the discrepant case, students benefitted from their participation in the global collaborative projects by garnering increased awareness of digital citizenship and social media. Students also improved academically due to their participation in global collaborative projects by garnering an enhanced understanding of digital citizenship and social media.

Research Question 4

Research Question 4 asked what teachers' perceptions were regarding integrating digital citizenship, social media, and global collaboration in the middle school curriculum. Teachers reported both benefits and challenges to integrating digital citizenship, social media, and global collaboration into the middle school curriculum. Teachers and students benefited from global collaborative projects in education, and teachers described the use of global collaborative projects in education as "imperative" to students' success not only while in school but also beyond school (Participant 2). Teachers identified their own challenges to integrating digital citizenship, social media, and global collaboration into the middle school curriculum as well as perspectives such as job skills and an international perspective that should be emphasized as part of students' global collaborative engagements. Teachers also identified challenges associated with technology access and highlighted the concept of authentic audience as benefiting students while globally collaborating with other students and teachers as students took on the roles associated with digital citizenship. An analysis of teacher and administrator perceptions about integrating digital citizenship, social media, and global collaboration into the middle school curriculum focused on the following themes: (a) job preparation; (b) teacher and administrator buy-in; (c) open access to technology; (d) curriculum modification; (e) authentic audience.

Job preparation. The data showed that students grew as digital citizens by learning about and practicing skills and techniques associated with working in a digital world. Participants identified job skills awareness, the use of social media, global job

perspectives including global competitiveness, taking a virtual approach to work, the use of mentors and experts, and affording students opportunities to garner skills that can be used in a globally collaborative society. Such findings inform teachers about topic areas that should be highlighted to students as well as details for consideration with respect to curriculum inclusions.

As described by Participant 7 when speaking about the global collaborative projects and the dynamism associated with jobs and skills, she noted that students should be afforded skills to help them when in school and thereafter:

> There are so many skills and jobs that are being developed on a daily basis that by the time our students graduate you know things will be in a whole different place so why not develop all the skills to help students succeed in school and outside of school.

In terms of the types of job skills needed by students upon graduation, Participant 2 stated that the skills students learn in the global collaborative projects in which digital citizenship is a focus and social media is used are important to students' futures. Participant 2 indicated:

> It's vocationally important. Jobs in the future are going to be more like what I do. I work from home and travel when I need to. And a lot of people are going to be doing that more in the future. So you need to know how to effectively communicate and build things, as I keep saying, build things through social media and collaborative environments.

Participant 5 echoed Participant 2 by suggesting that students should consider how their work in school will apply to their work in industry as well as how global collaborative projects will be a way of life for students when employed in industry. This idea was supported when Participant 5 stated:

> When they're in their adult working lives, something which is going to be the norm is they're not going to be sitting, you know in one place and one country and one area. They're going to be doing this, and that will be just the way their work is. So giving that forward perception of needing to know how to do that and be connected in that sort of way.

The concern about students learning that they need to be competitive not only with students from the United States but also with students from other countries was expressed by Participant 1. She felt that domestic and international competition are important for teachers and students in order to keep the economy in the United States strong as students will work in global capacities. This idea was supported when Participant 1 stated:

> And I think that when we start looking at the coding platform and creating online materials, which seems to be getting a lot of national focus these days, our competition is not just with the people in our country. The other countries are ahead of us technically and we need to start understanding what's going on or seeing that kids need to see that as well as teachers, that in order for our economy, if you will, to continue to grow and thrive, we need to be able to compete with what's going on internationally, not just nationally.

Adding further insight to how students should orientate themselves with respect to their future employment engagements, Participant 5 suggested students take inventory of what they are doing now to prepare for the future with an open mindset. This was demonstrated by Participant 5 in the statement:

In the future for them to be successful, you're not going to be able to just be sitting in their little tiny closet with things. They need to be understanding what's happening in lots of different places to make opportunities for themselves or, and we don't know what sort of work life situations they're going to have. So you need to understand where things are at now at least so that it puts you in a better position for the future. You know language is not a barrier anymore because everything can be translated if you need it to. So the only thing is just that physical space really. Being in the same place as somebody else. You can do lots of things now, all just virtually.

The virtual mindset is a facet of digital citizenship related to working or collaborating remotely with others using social media. Students will also take into consideration an international collaborative perspective per Participant 1 when coupled with a perspective that is rooted in virtual environments and electronic communication methods. Such skills are important for employment in industry as already described by Participant 2 and Participant 5. Taking on a global competitive perspective was also identified as an important skill or trait as described by Participant 1 which applies when adopting a virtual collaborative mindset.

As a benefit to students and teachers, Participant 2 described how social media makes learning transparent as students collaborate and build things with each other in a global collaborative environment. Participant 2 commented:

> Social media helps make learning visible as well as all those others, communicate, collaborate, etc. And it helps students build things together. We talk about these maker spaces and having to have special rooms and special equipment, and that's all really good. But digital online learning is the maker space of the digital world. The Digiteen Project is the digital version of maker space.

As Participant 2 noted, collaborative projects such as the Digiteen Project help students collaborate and build things online with other students. Global collaborative peers can be located anywhere on earth. Social media tools facilitate global collaboration online and provide students a preview of the skills needed by their future employers.

The notion of connecting with others such as experts and working professionals helped situate students with insight garnered directly from industry. Such mentoring could connect students with experts from around the world to help students align their interests with the realities of industry needs. Shepard (2012) noted that students seek the advice of experts when using technology for learning: "Students want to use technological means to access personal learning networks (PLNs) to gain access to experts on the problems and issues they are addressing" (p. 127). When connecting with mentors during their global collaborative engagements students found the experience beneficial. For example, Participant 1 found the use of mentors beneficial to students' learning while students participated in coding contests and she indicated the following:

You know, and I'm finding this, that when I have these kids entering the coding contests, the kids have mentors, they have somebody who's really an IT professional coming in and coaching them and answering questions. And that is huge for learning. The kids love having the mentor come in. …I think education on the whole needs more experts or mentors or...other people to come in and be a part of our educational process.

Similar to the reflection offered by Participant 1, the use of experts was described by Participant 6 as beneficial to students who were engaged in service learning projects wherein they shared their research with others. Participant 6 offered that her students used social media to reach out to experts, celebrities, and organizations for input about their service learning project topics to garner additional perspectives about their issue. Participant 6 commented:

When my students do their service learning projects, one of their goals is to spread awareness of their various topics. …So, if they're trying to raise awareness of their issue, they use social media to reach out to celebrities or experts in the field or to follow different organizations that are trying to work on the same issue. …And one year a kid did a video conference with an author of a book. So, things like that, I think, are very important. We do a whole class 120-student Skype with an author of a book that we read. And she talks about the book and the themes of the book and her writing process and that's very valuable.

Students took on the roles associated with digital citizenship as global researchers, collaborators, and practitioners by reaching out to experts, celebrities, and organizations

for insight about their service learning projects. Students found the engagements

beneficial to their projects based on Participant 6's account. Should experts in the field

be unreachable, teachers outside of students' own schools could be beneficial to students

as indicated by Participant 1:

> Even within this project we had one Skype session with another school that
>
> happened to have class at the same time we did, and to have another teacher
>
> talking to them other than me, even though it's the teacher they've been
>
> communicating with online, I think that carried a little more meaning than the
>
> person that they see every day and I could look at them and tell when they're
>
> joking around. …Sharing our own resources between schools would be helpful.

Students interacted with experts, mentors, or others outside of their personal learning

networks by using social media and were afforded opportunities to engage others in a

global collaborative format. Students were also afforded opportunities to capture

feedback from professionals in industry to incorporate into their learning what may be

required of them when they transition from the roles associated with being full time

students to the roles associated with full time working professionals. Digital citizenship

applies to both role sets, and by participating in the global collaborative projects students

were afforded opportunities to garner skills not only associated with digital citizenship

but also adjust their understanding of those skills and digital citizenship based on the

feedback provided by mentors and experts in the field. However, if teachers are not

ready to provide students the opportunity to learn new skills associated with digital

citizenship as well as provide students with opportunities to practice using those skills,

then students may not find themselves prepared to earn a living in the highly networked society that awaits them following graduation from high school.

In summation, teachers encouraged skills awareness, the use of social media, global job perspectives including global competitiveness, taking a virtual approach to work, the use of mentors and experts, and affording students opportunities to garner skills that can be used in a globally collaborative society. As noted by Participant 2 and Participant 5, skills associated with collaborating with others physically located anywhere on earth are important in contemporary working arrangements as virtual or remote work is the norm for many. Participant 2 indicated this trend is going to increase with the passage of time. Based on the data presented here, global collaborative projects in education afford students opportunities to garner experience with collaborating with others at a distance. Such experience provides students the means to create or build digital artifacts with and for each other to say the least. Students were provided opportunities to develop skills that may be required when working in industry, and global collaborative projects provide students with those skills in support of them becoming digital citizens.

Teacher and administrator buy-in. Both teachers' and administrators' buy-in was important to integrating digital citizenship, social media, and global collaboration into the middle school curriculum. Policies should reflect buy-in as should teachers and their willingness to learn about new technologies, such as social media tools, to support students taking on the roles associated with digital citizenship.

Participant 2 shared this sentiment with respect to teachers' attitudes toward integrating social media into the middle school curriculum: "We haven't reached the potential yet not by any means I don't think because there are still certain attitudes towards social media." To expand on this construct, some school districts prohibit teachers from connecting with students on social media which creates challenges for teachers who want to model appropriate behavior online as described by Participant 6 in the following statement:

> The tricky thing is we can see the way students act towards each other in person much of the time. But what they're doing on social media is hidden for the most part because teachers are not supposed to be friends with students, not supposed to be following them. So, we don't know what they're doing if those barriers are in place.

Participant 6 raised the point of not being able to observe students' actions when students engage each other on social media. Behavior checks cannot be performed online when schools prevent teachers from using social media to observe students' social media interactions. Participant 6 expressed concern over her inability to model appropriate behavior on social media when schools prohibit connecting with students on social media, and noted the following:

> But if the teachers are going to be cut off from that completely--from students-- then where are the models of appropriate use and where are the teachable moments when teachers can notice the kids are doing something wrong and gently

correct them? Where is the responsibility for the teacher to teach global

citizenship in an area that they're barred from? That makes it tricky.

Teachers are challenged by the policies put in place by school administrators due to a

lack of buy-in for technology use in education. Although students continue to use social

media for personal reasons outside of school, they may be misusing and abusing

technology if left to their own devices when teachers are restricted from modeling proper

online behavior. Similar insight was provided by Participant 8 who indicated that

problems will arise when using technology in educational settings as well as learning

how to use social media in academic settings takes ample time. Buy-in associated with

using technology in education should start with teachers and administration as indicated

by Participant 8:

> I think the mindset needs to start with our teachers and administration, so that it's
>
> okay that we use this, but we need to use it properly and this is how you use it.
>
> …I think it really, it just, need to not be afraid and not think it's bad, and learn
>
> ways to use it properly. And that doesn't take five minutes, it takes years.

Participant 8 made it clear that change takes years to complete. This is evident in the data

gathered for this study whether it is learning something new, integrating new tools into

the curriculum, or changing the perceptions of teachers, administrators, and students. A

lack of buy-in may be counterproductive to enacting change, but teachers and

administrators can leverage established global collaborative projects to promote buy-in.

This was demonstrated by the statement made by Participant 2:

And then, of course, the fear is, well, oh my goodness if we are going to upload these portfolio pages, my goodness, then I am really going to have to learn as a teacher what Creative Commons uses and then teach it to my students. Oh, oh, that's a whole learning curve I'm not sure I'm ready for. That's the problem, and that's where the Digiteen Project and projects like that are so important. Get on top of all this legal stuff. Get on top of this responsibility to know how to share things in an effective way and how to elicit responses and connections with other people based on what you've shared.

As Participant 2 noted, teachers were not responsive to learning something new, and that is a problem. However, to prepare students for proper entry into industry, teachers must help students make the appropriate connections with industry as well as guide students toward becoming digital citizens. Established global collaborative projects help teachers manage the learning curve Participant 2 described, which can help establish teacher and administrator buy-in.

Participant 5 stressed accountability in education "Everybody has accountability in education. You've got to be accountable for what you do and make sure that it's meeting the standards and all of those types of things." When considering students taking on the roles associated with digital citizenship, teacher and administrator accountability does not seem to be present. This was clearly the case based on Participant 2's account as there was little accountability for ensuring students' success where new technologies and the legalities of using online information were concerned. Fortunately, established global collaborative projects that combine digital citizenship,

global collaboration, and social media may help alleviate those concerns by providing

teachers the support they need to help students take on the roles associated with digital

citizenship. This may help establish teacher and administrator buy-in for using

technology in educational settings.

Participant 8 echoed the example provided by Participant 2 in that teachers were quick to

dismiss using Twitter in the classroom. Participant 8 also perceived that change needs to

start with teachers and administrators "I think it really comes down to the teacher and the

administration." Participant 8 also noted that teachers were averse to learning new

technologies such as Twitter, but simply giving it a try could make a difference for

students' sake. For example, Participant 8 found the following: "Right away they

[teachers] put blinders' on or block, you know, put those barriers up and, and [they] need

to kind of step into a little bit, and at least try it for themselves." Although teachers were

opposed to using Twitter in their classrooms, Participant 8 suggested that teachers needed

to experiment with social media in their classrooms. Rather than turn away from using

technology in educational settings, teachers may be able to reach students on a common

ground if teachers take the initiative to learn about the technologies students are using.

This could promote buy-in if following the suggestions made by Participant 8. In the

following statement Participant 3 noted that after she sought assistance from the technical

staff at her school she felt more comfortable using Twitter:

> A lot of teachers at my school were iffy about Twitter, like we don't want to use
>
> Twitter, like oh my gosh, whatever. …I think until I took the time and got a little
>
> help from different tech people in my school I was hesitant to use all that. But

again, it's finding the time, knowing what is OK to use and what isn't with kids.

And just how far can you take it?

This example parallels the example provided by Participant 8 in that teachers may be more apt to use technology in educational settings if they simply take some time to experiment with new technologies. As Participant 3 found, a bit of experimentation and some help from her school's technical staff helped her garner confidence with using social media and therefore promoted buy-in.

In summation, Participant 6, Participant 8, Participant 2, and Participant 3 offered that change must start with teachers and administrators especially where using social media in the classroom is concerned. Students are using social media in their personal communications outside of the classroom, and educators and administrators have an opportunity to help students use technology in socially responsible ways as digital citizens. If students are to become socially responsible digital citizens, then teachers' and administrators' attitudes and perceptions about integrating social media into the middle school curriculum must change for the benefit of students as indicated by Participant 6, Participant 8, Participant 2, and Participant 3. Based on the account provided by Participant 3, after taking the initiative to seek help with using social media tools such as Twitter, she became more comfortable using social media in an academic setting. Teachers and administrators may also be more apt to buy into using social media in their classrooms if they leverage established global collaborative projects where a network of teachers and assistance is provided to help. Global collaborative projects can help students take on the roles associated with digital citizenship as long as teachers and

administrators are willing buy into and commit to learning about and teaching with new technologies. Changes in perspectives starting with teachers and administrators as well as revisions to dated policies are a first step toward facilitating students becoming digital citizens.

        Open access to technology. Open access to technology is needed when integrating digital citizenship, social media, and global collaboration into the middle school curriculum. When speaking of using technology in her classroom, Participant 3 indicated that she preferred to use more technology, but access to technology devices in a one-to-one format proved challenging. This sentiment was supported by Participant 3 in the following interview data:

> But in our district, our kids are not one-to-one with technology--with tech devices.
> So, one of the things was that, you know, I would love to use it [technology] more
> in my classroom. I'm not sure how but I would also need--want to make sure that
> each kid [would] have their own device before I could do that.

Despite the need for and ubiquity of technology devices in education, not all school districts are created equal in terms of having the funding to outfit their classrooms with technology devices for each student. Depending on the age of students in a given classroom, they might be too young to have their own smart phone or tablet, might not be permitted to bring them to school, or simply might not be able to afford their own technology devices even if old enough to own one. Access to technology devices in a one-to-one allocation is one option that teachers and administrators might pursue when striving to provide open access to technology while integrating digital citizenship, social

media, and global collaboration into the middle school curriculum. In addition to device

allocation goals, teachers spoke about blocked Websites and teachers needing to identify

challenges and how to overcome challenges associated with integrating digital

citizenship, social media, and global collaboration into the middle school curriculum as

described by Participant 2 in the following:

> Both sides of the world, the west and the developing countries are still working
>
> through a number of issues, a number of constraints, economic and attitude
>
> constraints. Australia is pretty much the same as the USA in many respects. So
>
> many things are blocked here. So many teachers don't understand and, therefore,
>
> don't ask for them to be unblocked and just work within the constraints without
>
> really pushing the barriers. We need a lot more teachers to push the barriers and a
>
> lot more teachers to understand the power of global collaborative learning. And
>
> until you've experienced that you don't fully understand.

As indicated by Participant 2, teachers need to push for change to overcome barriers to

open access to technology. Teachers must also get involved to garner experience with

overcoming challenges to open access to technology. Based on Particpant2's description

about pushing against barriers, teachers could petition to have preferred social media or

other Websites unblocked for use in digital citizenship and global collaborative learning.

Without teachers taking an active role in promoting open access to technology, it might

be impossible for students to effectively learn in a global collaborative format without the

necessary tools and Websites. By using such approaches and forward thinking to

promote buy-in and open access to technology associated with using technology in

educational settings, teachers and administrators may find it a pleasure to integrate digital

citizenship, social media, and global collaboration into the middle school curriculum as

well as help students take on the roles associated with digital citizenship.

Curriculum modification. In support of integrating digital citizenship, social

media, and global collaboration into the middle school curriculum, Participant 2 urged

that "Schools need to open up their whole learning. They need to open up their

curriculum." New perspectives on curriculum design and what is included in curriculums

is needed as Participant 2 described that learning must not only take place when students

are in their classrooms but also when students are out of school "It's really this whole--

and I'll use a cliché, flattening the classroom walls. Understanding that learning must

take place, it has to take place now not just within the class but beyond." To support

students taking on the roles associated with digital citizenship, curriculums need to be

modified in a manner that includes appropriations for teaching about and using new

technologies within classroom settings. Social media is a key technology that students

are using in and out of their classrooms in ways that could cause them and other harm.

Without modifying the middle school curriculum to support students' use of social media

technology, students may be unprepared to enter the workforce where skills associated

with networking and the responsible uses of technology are in demand.

To move forward with curriculum modification, it might be necessary to

overcome constraints such as a lack of time, curriculum capacity, aversion to using

technology, and perceptions on standardized testing. Participant 5 cited the fullness of

the curriculum as well as the time required to make curriculum modifications as challenges as described in the following:

> At the moment with the curriculum where I'm at is very, very full. So I'm looking at it, you know, I would certainly like to. I haven't got the time at the beginning of this year, but if there was an opportunity at the end of the year to kind of move into integrating this into the program in some way, I would. But I feel that there's constraints because of what the curriculum itself is requiring and how much. It's the time factor. It's how do you justify the time factor that's involved with this.

Teachers were burdened with providing justification for technology access due to school policies on the matter as supported by the following statement made by Participant 8:

> It seems like in public schools it's a little more difficult because of all of the mandates that they have put upon them in terms of testing, in terms of blocking sites, you know, but it's, they can't stop. You know, that even though something's blocked, they [teachers] just, they need to, I don't want to say pay for it, but they need to make a good reason for it.

Participant 5 also described curriculum modification efforts taking the form of an "uphill battle" especially if nobody else is willing to support the curriculum modification effort. This idea was reflected when this Participant 5 commented:

> But sometimes you've got to push really hard for things to be accepted and to be included. And then if you're the only person waving the flag for it, nobody else is. That's sort of another uphill battle which you kind of got to push for.

Participant 2 discussed testing and teachers' narrow focus on testing. The concept of standardized testing suggests closed curriculums that are built around meeting objectives associated with standardized tests. Participant 2 stated:

> …so many teachers say to me I can't join the project because my whole focus is on testing. And I really despair what these teachers are doing. I'm sure their whole focus shouldn't be on testing. Anyway, so we have a long way to go. This is across the world. It's not just certain countries.

Teachers felt that a lack of time, curriculum capacity, and support as well as closed curriculums and standardized testing were challenges to making curriculum modifications. However, Participant 2 urged that schools open up their curriculums and their whole learning. This could be a key first step toward integrating digital citizenship, global collaboration, and social media in the middle school curriculum. Participant 4 cited a multidisciplinary approach where digital citizenship is integrated across all subjects is needed. A multidisciplinary approach coupled with established global collaborative projects may help teachers and administrators ease into making curriculum modifications that support students taking on the roles associated with digital citizenship.

An additional perspective associated with making curriculum modifications in support of integrating digital citizenship, social media, and global collaboration in the middle school curriculum was voiced by Participant 2 who described using student portfiolios to eliminate what she called "waste paper basket assignment work." Such assignments were labeled as such because nobody other than the teacher and student sees student work because it is thrown in the waste paper basket once the term has completed.

Participant 2 argued that such work is not acceptable despite that entire curriculums are established to support this type of learning. Instead of promoting waste paper basket assignments, students should instead retain their work by using learning portfolios that can be shared with others to garner feedback as Participant 2 suggested:

> ...And this is what we call waste paper basket assignment work. At the end of the semester you throw it in the bin and that's in, you don't look at it again. Well, when we're looking at a digital learning environment you don't throw this stuff in the bin. It should stay with you. And students from as young as kindergarten should be developing their portfolios and have things that stay with them right through now. And this is an essential digital citizenship skill and our personal branding, etc., building this up. So when I see teachers like that, and they're everywhere, and schools condone it, of course, schools actually set up their whole learning systems around the fact that nobody will ever see what the students are learning and how they're learning and what they produce. And it's just not good enough, I'm sorry. It's just not good enough for the century that we're learning in and the tools that we have.

Polices that mandate that curriculums be on the premise of disposable work are counterproductive to students taking on the roles associated with digital citizenship. By including global collaborative projects in educational settings, students' work from multiple countries are shared with others by design. Digital portfolios can facilitate this aspect of digital citizenship, and Participant 2 suggested that students could be motivated by feedback issued in response to their digital portfolios "How exciting for the kids if

they got comment from their portfolio pages? How exciting for the parents and their

extended family to be able to see their work?"

In summation, despite challenges to curriculum modification, teachers and

administrators have techniques available to them to assist with curriculum modification.

Teachers' and administrators' perspectives must first change to promote modifying the

middle school curriculum in favor of using technology in educational settings to promote

digital citizenship among middle school students. Changes in perspective to promote

teacher and administrator buy-in is an essential first step and technique that can be used

to advance the middle school curriculum. Taking a multidisciplinary approach to digital

citizenship was offered as another approach to modifying the middle school curriculum in

favor of using technology in educational settings. By leveraging established global

collaborative projects, teachers and administrators may find the task of curriculum

modification less challenging as they can the outline for teaching digital citizenship as

found in established global collaborative projects when initiating curriculum

modifications. Finally, teachers and administrators can incorporate the concept of digital

portfolios when modifying the middle school curriculum to support students taking on the

roles associated with digital citizenship. Such recommendations, as provided by the

participants of this study, can be use to help teachers and administrators integrate digital

citizenship, social media, and global collaboration in the middle school curriculum.

Authentic audience. To assist teachers with integrating digital citizenship, social

media, and global collaboration into the middle school curriculum, the concept of

students' audience was discussed by several participants. The data revealed that students

came to value their audience when engaged in global collaborative projects. Teachers

stressed to students the importance of an authentic or live audience with whom they

would share their learning as Participant 8 commented:

> So I definitely made them realize that they need to be aware that there is a live
>
> audience; that observers are out there looking at the work that they have created.
>
> So this can't be something that they mess around with or don't take very seriously.
>
> They really need to be sure that they know what they're doing and they have to
>
> take their time on it. So, I really like that aspect of it.

Teachers indicated that students learned that global collaborative peers from around the

world would see their work and due to this realization or recognition of an authentic

audience, students were motivated to take on the roles associated with digital citizenship.

In the following reflection Participant 4 offered that when her students took their

audience into consideration, students took their time to create quality digital citizenship

artifacts that could be shared with their global collaborative peers:

> And I think because they had a real audience, and that audience wasn't just
>
> another year 9 in another classroom, but it was a cool New York guy from another
>
> school. So they wanted to impress the other kids from the other school, so they
>
> actually did a good job and I think that was definitely a benefit.

Students took pride in their work and were motivated to impress others. When students

found their work was to be published and consumed by an authentic audience, students

took on a competitive approach that helped them create quality learning results as

demonstrated by Participant 1's insight:

> When kids work is to be published out there nationally or international, there's a competitive drive that makes them kick up their work, and there's also a lot of pride in what they do, and when I teach coding and they get that app that actually works and we could publish it, that's very motivational too.

Students further took part in action projects where their learning was shared with others. The aspect of sharing their digital citizenship projects with their peers and their local and extended communities helped students take on the role of digital citizens by broadening their perspectives on who benefits from learning. Students learned that they were not simply completing an assignment for a grade or for their teachers. Rather, others would benefit from their learning and projects. Participant 8 suggested that students found it motivational to learn for themselves and to distribute what they learned to others. This had a greater impact on students than did grades alone as indicated by Participant 8:

> It definitely bumps the whole perception to another level in that they're not just doing an assignment for the teacher. It's an assignment that other people will learn from, other students, other teachers, and then they actually have to present to a local community so they presented to the 5th grade. So it's not just their peers, it's their community, as well as beyond. So it's a great value more than grades could give in terms of the importance.

Mirroring what other teachers said about students taking their time to create quality digital citizenship artifacts to share with others, Participant 8 reflected that students' efforts were directed toward an audience rather than toward their teacher. Participant 8 observed that:

They take their time. It wasn't just for the teacher and it was for an audience. It did take them longer to create what they wanted to do. … It shouldn't just be for a teacher. It should be for the community or for others to learn and share.

To situate the concept of audience within a global perspective, Participant 7 described how students should become more globally aware and less confined in terms of their perceptions of their community and how far it extends. Likewise, Participant 7 promoted a worldly perspective such that students develop their understanding of the world based on something greater than what they are accustomed to in their own surroundings. Participant 7 supported this idea in the following:

Students have to get out of the mentality like their school is their world and that where they live is the center of everything. That's not how the world works. …You want students to see what's outside of their community and see all aspects of it, the good and the bad and learn from other students and not base their understanding about the world on what they just see in the news or read about in some article or see on a TV show and really just to break those stereotypes and interact with people and see that there are great people and great ideas all over the place.

Participant 7 also emphasized that students recognize that teachers are not the only source of knowledge, and that individuals can learn from each other "…the teacher is not the, just the big T in the classroom who has all the knowledge and all the knowledge comes from like the textbooks, but like we can learn from one another." This description and sentiment adheres to Siemens's (2005a) connectivist principles with respect to

networking with others and non-human information sources for learning. As students

found their audience motivational, the advice provided by Participant 7 may help teachers

and administrators integrate digital citizenship, social media, and global collaboration

into the middle school curriculum as Participant 5 noted that "anything which motivates a

student is a good thing." Also, Participant 2 offered that global collaborative projects

served as a "catalyst" for students and teachers who were learning to become digital

citizenship practitioners "The project itself is a catalyst to teachers and students." After

students learned about digital citizenship concepts they considered sharing their digital

citizenship knowledge with an authentic audience. Participant 2 supported this idea in

the following statement:

> And then by doing that they explore different angles of digital citizenship, the
>
> cultural, social, global, etc. And then once they've done that and researched and
>
> experienced through hands on then they look inward. And they look at their local
>
> communities, their school or beyond their school. And they say, well, what
>
> actions can we take? How can we now share our knowledge and implement
>
> something? …So I think the project it's a real catalyst to promoting--raising
>
> awareness and promoting good digital citizenship right across their local and
>
> extended community.

While speaking of the value of global collaborative projects, Participant 1 provided an

example of how students became aware of their audience in terms of digital footprints

and permanence of online data. She noted that her students garnered an understanding

about the permanence of information posted online and how many people could see their

data, and Participant 1 offered a reflection that supported this idea:

> Well the benefits I think were great in the area of awareness, that everything you
>
> post online other people can see and will stay there. We had a lot of discussions
>
> about that, and they could see that I wasn't just blowing smoke when I said 300
>
> people can see this. They got that, they were able to conceptualize that pretty
>
> easily. Whereas when you tell them, you know what you put up on Snapchat
>
> doesn't go away even though you can't see it. They don't get that. And I think we
>
> were able to make some bridges there and get understanding in that area.

Students understood that an audience could be several hundred people. They found the

concept of digital footprints and the permanence of online data challenging, but they had

success in that aspect of the online medium. This demonstrated students' understanding

of and use of social media and the importance of how many people use such tools, the

potential magnitude of audience members in terms of count, and the permanence of data.

To situate the concept of audience within an alternate perspective within her team Wiki, a

student offered insight about individuals as perpetrators online: "Was doing research. I

learned that when you are talking online, you can be talking to anybody. They may try to

convince you that they your age or something, but they may be using a fake picture or a

fake age. Be careful and never give private information online." In this example, the

student performed research about online safety with respect to the concept of online

audiences. The student shared her findings with others by using social media, or a Wiki

in this case, as an example of digital citizenship. All of those attributes associated with

using social media in a global collaborative project situated in an online educational environment are applicable to good digital citizenship. That students were motivated by an authentic audience, understood that their learning benefited others in their local and extended communities, and that global collaborative projects served as catalysts for students and teachers taking on the roles of digital citizens may prove beneficial to assisting teachers and administrators integrate digital citizenship, social media, and global collaboration in the middle school curriculum.

In summation, teachers found it important to promote an authentic or live audience as students found the concept motivating and took a competitive stance when engaging others in the global collaborative projects. Students were motivated to impress their global collaborative peers, and students valued learning and sharing for the benefit of others rather than learning to earn grades or for their teacher's benefit. Students found it motivating that their work was published online and took on new perspectives when considering the number of people who could see their work published online. Students demonstrated care and ownership of their learning as they took seriously their roles as digital citizens responsible for learning and sharing with others by educating others in their local and extended communities about digital citizenship concepts. The motivation afforded by the global collaborative projects helped students take on the roles associated with digital citizens. This motivational aspect of the global collaborative projects may help teachers and administrators integrate digital citizenship, social media, and global collaboration into the middle school curriculum when taking into consideration the outcomes described above.

Research Question 4 asked what teachers' perceptions were regarding integrating digital citizenship, social media, and global collaboration in the middle school curriculum. Insights garnered from teachers' feedback revealed themes associated with job preparation, teacher and administrator attitudes, open access to technology, curriculum modification, and authentic audience. Teachers stressed the importance of providing students the skills needed for entry into industry, and teachers indicated that global collaborative projects provide students skills associated with using social media in a global collaborative learning environment that are in demand in the business world. Authentic audiences motivated students to take their work seriously as well as to produce quality artifacts in the global collaborative projects. Authentic audiences also motivated students to take a competitive approach to impress their global peers as well as motivated students to share their learning with others when using social media. As a result, students took on the roles associated with digital citizenship as their perspectives changed to incorporate a global learning and sharing perspective when using social media for global collaboration. Such findings indicate areas for consideration when integrating digital citizenship, social media, and global collaboration into the middle school curriculum.

Summary

Chapter 4 presented findings based on the data analysis that answered the four research questions. Data were coded and multiple themes emerged from the data for each research question. Research Question 1 asked: *What are teachers' perceptions about middle school students' development as digital citizens when engaged in global collaborative projects?* Themes that emerged for Research Question 1 were adopted

digital citizenship perspectives, took digital citizenship actions, social media collaboration, and diminished ethnocentrism. Research Question 2 asked: *What are teachers' perceptions about strategies middle school students used to overcome barriers to taking on the roles associated with digital citizenship when engaged in global collaborative projects?* Themes that emerged for Research Question 2 were student-developed intervention strategies, and teacher-developed intervention strategies. Research Question 3 asked: *What are teachers' perceptions about the use of social media and global collaborative projects to enhance middle school students' digital citizenship and academic achievement?* Themes that emerged for Research Question 3 were enhanced digital citizenship and awareness, enhanced social media use and awareness, enhanced academic versus recreational uses of social media, and enhanced academic achievement. Research Question 4 asked: *What are teachers' perceptions regarding integrating digital citizenship, social media, and global collaboration in the middle school curriculum?* Themes that emerged for Research Question 4 were job preparation, teacher and administrator buy-in, open access to technology, curriculum modification, and authentic audience.

The results of this study show that global collaborative projects and social media are valuable in the middle school curriculum because they help students take on the roles associated with digital citizenship. Student and teachers overcame barriers encountered when participating in global collaborative projects. In Chapter 5, I will discuss the purpose of the study, the interpretation of the findings of this study, the limitations of the study, my recommendations, and the implications for positive social change.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this qualitative case study was to explore perceptions of middle school teachers on their students' growth as digital citizens while participating in a digital citizenship project using global collaboration and social media. This study was conducted to provide insight about how and why students took on the roles associated with digital citizenship while engaged in global collaboration using social media. The conceptual framework undergirding this study included Ribble's (2011) nine elements of digital citizenship and Siemens's (2005a) theory of connectivism.

The participants found that students took on the roles associated with digital citizenship as they engaged other students in global collaborative projects using social media for communications. Social media and global collaboration served to motivate students as they actively compared other cultures to their own, adopted less ethnocentric views of the world, and shared their learning with others in their local and extended communities. Global collaborative projects served as a catalyst to students taking on the roles associated with digital citizenship. Students demonstrated academic achievement by quoting and citing properly in Wikis, improving their writing in online spaces, and taking on leadership roles. Although students and teachers encountered barriers to students taking on the roles associated with digital citizenship, students and teachers were able to overcome barriers. Students leveraged peers, developed communications schedules, and persevered by taking ownership of their problems whereas teachers helped student overcome barriers associated with access, collaboration, and response lag. A

discrepant case associated with team formation barriers proved too significant to overcome due to age differences among students.

The perceptions shared by the teachers and administrator may provide teachers and administrators from educational institutions within the scope of the three countries represented in the sample with insight about the benefits and challenges associated with integrating digital citizenship, global collaboration, and social media in the middle school curriculum. Participants perceived students' academic achievement as learning to use social media tools new to them for academic purposes. Students demonstrated empathy for cultures different from their own, engaged and collaborated with others in online spaces, and overcame barriers on their own and with assistance from others. Such academic achievement translated into students taking on the roles associated with digital citizenship.

Students became more aware of the importance and complexity of digital citizenship. Students took into consideration the ramifications of their online actions with respect to their digital footprints and online reputations and the potential of their online actions to both benefit and harm others. Having used digital citizenship as a framework for the responsible, ethical, and moral use of technology in education settings, global collaborative projects in combination with social media provided students with opportunities to garner skills befitting digital citizens. Global collaborative projects and social media also motivated students to engage others at a global level, find solutions to problems, and create project artifacts or deliverables as a team of international collaborators.

Interpretation of the Findings

Research Question 1

Research Question 1 asked what teachers' perceptions were regarding middle school students' development as digital citizens when engaged in global collaborative projects. Teachers and administrators perceived that some students had very little experience, if any, using social media prior to participating in global collaborative projects and were therefore lacking in digital literacy skills. The results supported Drexler's (2010) findings that high school students were largely unfamiliar with using technology for networked learning, but my study extends the finding to middle school students. The teachers and administrator indicated that students lacked digital communication and digital etiquette skills, were initially self-centered, and did not consider how their online actions might impact others such as in the case where they used text-messaging communications and abbreviated English when using social media. This finding aligned with the findings of Davis et al., 2010, but extended the findings to middle school students specifically. Teachers perceived students' positive growth as digital citizens when engaged in global collaborative projects as teachers perceived an improvement in students' digital communication and etiquette which aligned with Ribble's (2012) elements of digital citizenship. Students' global collaboration and construction of digital artifacts aligned with Siemens's (2005a) theory of connectivism as students used a diversity of opinions, decided what information to share, used social media and other tools in a networked learning format, maintained and nurtured network connections, and made decisions about using technology with their authentic audience.

Research Question 2

Research Question 2 asked what teachers' perceptions were regarding strategies middle school students used to overcome barriers to taking on the roles associated with digital citizenship when engaged in global collaborative projects. Teachers perceived students struggling with response lags or a lack of timely responses from their global collaborative peers which paralleled Reimer and Reimer's (2012a) study. My study adds new knowledge to the discipline as students leveraged peer feedback, developed communications schedules, and persevered by taking ownership of their problems. When left to their own devices, students solicited feedback from others which exhibited Siemens's (2005a) principle of "learning and knowledge rest[ing] in diversity of opinions" as well as "learning is a process of connecting specialized nodes or information sources" such as non-human appliances. Teachers assisted students with overcoming global collaborative communications barriers by facilitating digital access to social media tools, promoting collaborative editing of peer work, mitigating language barriers, and managing response lags. These results extend the knowledge within the discipline as similar findings were not present in the literature.

Research Question 3

Research Question 3 asked what teachers' perceptions were regarding the use of social media and global collaborative projects to enhance middle school students' digital citizenship and academic achievement. Participants cited that they did not assign grades for students having participated in global collaborative projects. A closer investigation revealed that there is more to consider in terms of academic achievement than traditional

grades when assessing students engaged in digital citizenship studies using global collaborative projects and social media. Teachers and administrators should consider the types of skills students acquired when engaged in global collaborative projects and how those skills could be leveraged in other areas of the classroom as well as in other subjects. My study extended the knowledge in the discipline as teachers perceived that students' digital citizenship skills transferred to other classes, teachers perceived students' academic growth due to students' participation in global collaborative projects, and teachers perceived global collaborative projects having a more significant impact on students than would grades due to the motivational aspect of collaborating and sharing work with others. My study extended the knowledge in the discipline because it was found that teachers should look beyond grades with respect to how to assess the outcomes generated by students participating in global collaborative projects. Teachers should also consider how global collaborative projects can transform students' learning and how such learning can be demonstrated, assessed, and promoted.

The teachers and administrator perceived students' increased academic achievement, digital citizenship, and motivation due to students taking additional time to create quality for the benefit of their global collaborative peers and communities rather than for teachers. Students were also motivated to take responsibility for their learning as they incorporated ethical decision-making into their learning as global digital citizens. These findings aligned with the literature with respect to social media motivating students when used as a collaborative tool in education (Callaghan & Bower, 2012; Cardoso & Coutinho, 2011; Nerantzi, 2012) and students taking an increased responsibility for their

learning (Cardoso & Coutinho, 2011; Nerantzi, 2012), but my study extends the knowledge in the domain as those studies did not involve middle school students nor did they involve global collaborative projects. Students found global collaboration motivational which adheres to Siemens's (2005b) networked learning in which motivation and emotions are influenced by forming connections. Students connected with other students globally which provided motivation to create quality work.

Students were perceived to have adopted enhanced digital citizenship perspectives as students adopted favorable views of other cultures, acknowledged global problems and the importance associated with remedying those problems, and took ownership of global issues. Students became less ethnocentric as they showed a greater interest in other countries, cultures, lifestyles, and world perspectives. Those findings were shared by Reimer and Reimer (2012a) in a study involving high school students who used social media to assist others who were learning English as a second language. The authors found that students viewed their experiences as positive, students' perspectives about the world grew favorably, and students adopted empathy for individuals from other parts of the world. My study confirms Reimer and Reimer's (2012a) findings, and extends knowledge in the discipline to middle school students engaged in global collaborative projects that were undergirded by the principles of digital citizenship.

Students used a variety of social media tools for learning and sharing their knowledge with others in their local and extended communities. Based on a review of Wiki data associated with the global collaborative projects, students used a variety of technologies to demonstrate learning including cartoons, Wordles, and comedic scripts as

well as Powtoon, Prezi, iMovies, Google Docs, Google Presentation, Animoto, and

Flickr. Shepard (2012) shared that "Learners are creating podcasts, videos, interactive

presentations, and mind maps to demonstrate learning" (p. 128). These findings aligned

with Bhattacharya's (2011) study where graduate students used Wikis as a collaborative

learning tool and included cartoons, Wordles, and comedic scripts as part of their

learning (pp. 56-58). The examples demonstrated enhanced academic achievement and

digital citizenship as students learned to use technology new to them to demonstrate

learning. My study adds new knowledge to the discipline by extending the use of social

media to middle school students engaged in global collaborative projects.

Research Question 4

Research Question 4 asked what teachers' perceptions were regarding integrating

digital citizenship, social media, and global collaboration in the middle school

curriculum. The participants confirmed the overall impression found in the literature

regarding students' job preparation and future employability as it relates to students' use

of social media. For example, teachers spoke about job preparation and noted that

students should be afforded technology and global collaboration skills as international

competition is important for a strong global economy. Students were also made aware of

their online reputation in conjunction with digital footprints and the permanence of online

data. The literature contained three studies that might be useful when compared to my

study although they did not involve middle school students learning about digital

citizenship, global collaboration, and social media. The Cross-Tab Commission 2010

suggested that individuals' use of social media in their personal lives directly impacted

potential employers' opinions and perceptions of job applicants. Barczyk and Duncan (2012) and Hazari and Brown (2013) suggested that individuals' actions published on social media can negatively influence prospective employers should individuals fail to use social media in a reputable manner. My findings align with the literature with respect to preparing students to use technology in a responsible manner for vocational purposes and maintaining a positive digital footprint. My study extends the knowledge in the discipline by broadening the findings to middle school students engaged in global collaborative projects in which social media was used.

My study revealed that teachers held negative attitudes toward learning new technologies and demonstrated poor attitudes about using social media in their classrooms thus affecting teacher and administrator buy-in with respect to integrating digital citizenship, global collaboration, and social media in the middle school curriculum. This finding aligned with Chik's (2011) study in terms of teacher and administrator negative attitudes toward technology, but the literature did provide insight about how teacher and administrator buy-in affects integrating digital citizenship, social media, and global collaboration in the middle school curriculum. Additionally, the literature revealed that teachers' attitudes were found to influence students' use of social media both positively and negatively (Guo & Stevens, 2011) and Suwannatthachote (2012) found similar outcomes among preservice teachers. Poellhuber and Anderson (2011) found that the overall organizational climate, or institutional effect, influenced students' use of social media technologies (pp. 110-111). By comparison, teachers indicated that social media and technology are often presented in educational settings

using a negative perspective in terms of how technology is harmful but that a positive

perspective should be used to for the benefit of students. The results of my study

confirmed the findings in the literature but also extend the knowledge in the discipline

with respect to applying the themes to middle school teachers participating in global

collaborative projects using social media. If teachers do not buy into digital citizenship,

global collaborative projects, and social media; exhibit positive attitudes about the same;

and promote student buy-in for the same; then achieving student buy-in and positive

student perceptions of digital citizenship, global collaborative projects, and social media

may be challenging and global collaborative projects may very well not succeed.

The results indicated that open access to technology served as a barrier to

integrating digital citizenship, global collaboration, and social media in the middle school

curriculum. Blocked Websites, limited bandwidth, and device allocation were cited as

technology access barriers. The literature did not provide insight about open access to

technology as barriers to teachers using social media in educational settings or to teachers

integrating digital citizenship, global collaboration, and social media in the middle school

curriculum. My study extends the knowledge in the discipline by raising the issues as

barriers as well as by finding that the teachers and administrator encouraged pushing hard

to achieve open access to technology.

Teachers cited curriculum modification as a barrier to integrating digital

citizenship, social media, and global collaboration in the middle school curriculum.

Policies associated with blocked Websites, challenges presenting curriculum

modifications to school management, full curricula, time constraints, and curricula and

school systems tightly focused on testing and throw away assignments were cited as challenges to integrating digital citizenship, social media, and global collaboration in the middle school curriculum. Although the literature did not provide insights about curriculum modification with respect to integrating digital citizenship, social media, and global collaboration in the middle school curriculum, the topic of acceptable use policies (AUPs) provided an interesting parallel to my results. Designed to outline acceptable technology use, AUPs do not address digital citizenship, global collaboration, and social media holistically, and Hollandsworth et al. (2011) claimed that "acceptable use policies (AUPs) are not enough" (p. 46). I echo this sentiment with respect to not only educating students about how to use technology outright but also with respect to using technology to collaborate with others online demonstrating empathy as well as concern for the ethical and moral ramifications associated with using technology such as social media as a global communications medium. While applicable to my study, the literature did not relate directly to my research findings. My research findings confirm that AUPs are not effective instruments to promote digital citizenship. They extend the knowledge in the discipline by elaborating why curriculum modification challenges arise when integrating digital citizenship, social media, and global collaboration in the middle school curriculum, and by discovering that the teachers and administrator urged educators to push hard for curriculum and policy reform as well as changes in perspectives associated with integrating digital citizenship, social media, and global collaboration in the middle school curriculum.

Participants perceived that students found their global collaborative authentic audiences motivating. Teachers perceived students taking an interest in other cultures and the lives of their global collaborative peers, as well as finding motivation in taking a more academic approach to their work after learning that their work would be published online for a global audience. I could not locate any relevant studies related to authentic audiences as a motivational factor for students engaged in digital citizenship, global collaboration, and social media in the middle school curriculum. The results of my study extend the knowledge in the discipline as teachers could leverage motivational influences for positive outcomes for students taking on the roles associated with digital citizenship.

Limitations of the Study

Case study research is limited because it affords transferability but not generalizability. The former is "applied by the readers of the research" whereas the latter is "applied by researchers in an academic setting" (Barnes, et al., 1994-2012. p. 1). Additionally, Yin (2014) issued the following distinction associated with case study research "case studies, like experiments, are generalizable to theoretical propositions and not to populations or universes. In this sense, the case study, like the experiment, does not represent a sample, and in doing case study research, your goal will be to expand and generalize theories (analytic generalization) and not to extrapolate probabilities (statistical generalizations)" (p. 21). Therefore, academics and industry stakeholders interested in transferring the findings of this study to their own environments and situations may benefit if they are concerned about digital citizenship, global collaboration, and/or social media.

A limitation of this study was that only teachers and administrators were interviewed; students were not interviewed as a source of data. Student interviews may have provided additional clarification about how they took on the roles associated with digital citizenship, as well as about their perceptions on the global collaborative projects overall. Student interview data could provide additional insight making the study results transferable to a wider audience.

Another limitation of this study was that parents were not interviewed. Parents can influence their children's perceptions of digital citizenship, global collaboration, and social media use outside of classrooms. Without access to such perceptions, it is unclear how students were influenced by their parents as students participated in global collaborative projects in educational settings.

Recommendations for Action

The following recommendations for action are based on the participants' perceptions of students' development as digital citizens while participating in global collaborative projects using social media.

1. Established programs such as the Flat Connections Digiteen and Digitween Wiki Project can be used to afford students the opportunity to become digital citizens. Students need to be engaged in global collaborative projects with students from other parts of the world if they are to take on the roles of digital citizens in the information-centric and globally networked society in which we live.

2. School policy on digital citizenship needs to be established to outline the importance of digital citizenship in the middle school curriculum. Acceptable use

policies are no longer sufficient as mandates for appropriate technology use and must be supplanted by digital citizenship policies that outline a progressive educational model for appropriate technology use. Ribble's (2012) nine-element digital citizenship framework can be used as a starting point for policy reform.

3. Access to social media is essential to students becoming digital citizens. Schools administrators and teachers must be willing to unblock social media Websites so that students can collaborate globally if they are to become digital citizens. Teachers must be prepared to identify access limitations and pursue overcoming access barriers to social media and related Websites for global collaboration to take place.

4. Teachers need in-service training for strategies related to authentic assessment because they need to see the connection between project-based activity and a real-life task-oriented application of skills. Teachers need to think beyond traditional test designs, standardized testing, recall, and grades when using authentic assessment for project-based activity and learning. Incorporating digital citizenship into the middle school curriculum affords new and different types of assessment opportunities for students taking on the roles of digital citizens.

5. Educational reform is needed that includes provisions for digital citizenship and appropriate technology use. Acceptable use policies (AUPs) do not address digital citizenship appropriately if at all, but AUPs may be the only technology policy used by some school districts. New policies designed to promote digital citizenship education across the middle school curriculum are needed.

Educational reform is needed to promote modifying existing curricula as curricula were cited as full and difficult to modify. Educational reform that addresses the technical needs of industry is needed. Advancing middle school policy educational reform associated with digital citizenship and the appropriate use of technology would meet this need.

6. Professional development opportunities for teachers about integrating digital citizenship, global collaboration, and social media into the middle school curriculum are needed to promote teacher buy-in. Industry jobs now require digital citizenship skills including using technology to collaborate in a productive and respectful manner on global scale, and teachers need to see the relevance of digital citizenship to buy into integrating digital citizenship, global collaboration, and social media in the middle school curriculum.

Recommendations for Further Research

The following recommendations for further research are based on the participants' perceptions of students' development as digital citizens while participating in global collaborative projects using social media.

1. Qualitative research is needed to explore students' perceptions about digital citizenship and using social media for personal recreational use to determine how to bridge the gap between students' personal and academic uses of social media. Exactly how students' personal use of social media could help them transfer their personal uses of social media to educational environments for learning and collaboration in is unknown.

2. Qualitative research is needed to determine how to achieve student buy-in with respect to the application of appropriate digital security measures to ensure students' safety online. Although students employ digital security measures when class activities require them to do so, they do not often implement digital security measures otherwise. Future research could help students actively monitor their digital security settings by exploring students' perceptions about how much information they share about themselves and with whom, why they share their social media passwords with others, whether they are concerned about their digital footprints, and the extent to which are using digital security settings built into social media tools they are using online. Students' perceptions about digital security as a paradigm for online safety needs to be explored using qualitative research methods to discover why students do not take the topic more seriously than they do.

3. Teachers viewed curriculum modification as futile, and the administrator interviewed suggested that curricula were closed because they catered to standardized testing and outdated principles. Qualitative research is needed about teachers', administrators', and other stakeholders' mindsets about closed curriculums, standardized testing, and the need to transform curriculums to successfully integrate cutting-edge/21st Century skills such as those associated with digital citizenship, global collaboration, and social media to develop curricula that reflect contemporary skill sets.

4. Additional research is needed to determine how to integrate digital citizenship, global collaboration, and social media across curricula using an interdisciplinary approach. A qualitative case study of middle school teachers who have successfully integrated digital citizenship, global collaboration, and social media in the middle school curriculum is needed to determine strategies for a successful interdisciplinary integration approach. Middle school teachers who took an interdisciplinary approach to integrating digital citizenship, global collaboration, and social media across multiple subject areas could provide strategies about taking a holistic approach to integration. Such a study could help facilitate a change of teacher and administrator mindsets from those that treat digital citizenship as an encapsulated subject of study that is separate from other courses of study to mindsets that view digital citizenship as an interdisciplinary subject applicable to all areas of study.

5. Additional qualitative research on the social and emotional factors related to students' motivation derived from global collaborative projects using social media is needed to assist students with taking on the roles associated with digital citizenship. My study could be leveraged to derive initial motivational factors, but additional research is needed to formulate a motivational framework associated with students taking on digital citizenship roles.

6. Further qualitative research is needed to provide insight about how social media can be used in global collaborative projects in educational settings to facilitate special needs students' willingness to take on the roles associated with digital

citizenship. Students who experienced challenges collaborating with others or who were typically quiet in face-to-face settings took on leadership roles and demonstrated they had opinions and collaborative abilities when using social media. Additional qualitative research could explore the motivational factors that help special needs students excel academically, emotionally, and socially when engaged in digital citizenship studies using global collaborative projects and social media.

7. Additional qualitative research about how to assess student work created using global collaboration is needed as traditional grading processes do not always apply to the interactions, activities, artifacts, or outcomes associated with using social media in global educational settings. Qualitative research should be designed to explore how to assess collaboration, peer evaluation and critiquing, and learning and productivity that is collaboratively generated. A qualitative exploration of alternative methods for assessing student work in digital settings is needed, as letter grades and percentages are often insufficient for assessing learning that occurs in online social media spaces.

8. Future qualitative research about parents' perceptions about digital citizenship, global collaboration, and social media and how their perceptions influence their children's use of social media is needed. Parents could provide additional insight about how students use social media and related technology for recreational activities outside the classroom. Such perceptions could help

bridge the gap between students' personal and educational use of social media tools to help students take on the roles associated with digital citizenship.

9. Qualitative research is needed to account for male teacher perceptions about students taking on the roles associated with digital citizenship. Differences between male and female teachers' perceptions could reveal factors to be aware of and account for when fostering student digital citizenship in academic settings.

10. Additional qualitative research that includes teacher perceptions from additional countries is needed to determine the degrees of difference and in what ways, if any, educational practices, cultural differences, and geographic settings influence students taking on the roles associated with digital citizenship.

11. Further qualitative research using narrative inquiry or phenomenology from the perspective of students is needed to examine students' perceptions and experiences associated with students becoming digital citizens. Such perceptions could be used to better understand how and why students became digital citizens, the barriers students experienced and how they overcame barriers to digital citizenship, and how students' personal use of social media influences their academic use of social media. The results of such a study could be compared to the results of my study to compare and contrast student and teacher perceptions associated with middle students becoming digital citizens. Such a comparison could yield additional insight into as well as confirm how to ease students into taking on the roles associated with digital citizenship.

Implications

The administrator and teacher perceptions gathered and interpreted as part of this study may provide administrators and teachers elsewhere with insight about integrating digital citizenship, global collaboration, and social media in the middle school curriculum. If students are to assume the roles associated with digital citizenship, then educators need to include digital citizenship as an important component of the curriculum as well as be prepared to overcome barriers to students taking on the roles associated with digital citizenship. What follows is a discussion on the implications associated with social change, methodology, and recommendations for practice.

Social Change

Integrating digital citizenship, global collaboration, and social media in the middle school curriculum can bring about positive social change based on the results of this study. The findings of this study indicated that students took on the roles associated with digital citizenship as they used social media in global collaborative settings to learn about and practice digital citizenship behavior. Students became responsible users of technology and adopted perspectives that included taking responsibility for their world and for others. Students from around the world may find the same benefits if digital citizenship, global collaboration, and social media were integrated into the middle school curriculum.

A second implication for positive social change is that integrating digital citizenship, global collaboration, and social media in the middle school curriculum afforded students the opportunity to develop skills that are sought by employers.

Students garnered skills associated with communicating and collaborating online. Students learned to appreciate and respect differences among cultures as well as to leverage them in a positive fashion. They became proficient with using technology as a productivity tool in online settings. Digital citizenship equates to developing skills to participate in society using electronic means, and employers seek such skills. As students take on the roles associated with digital citizenship, they become prepared to enter the workforce as individuals possessing skills required by employers who operate in highly dynamic, networked, and technology- and information-centric societies. Society has become global due to the affordances of technology, and education must become global if students are to enter into and compete in a global society.

A third implication for positive social change affords teachers and administrators the opportunity to update curricula to be more reflective of the needs of industry. Such a reform could include updating or eradicating dated mandates and policies that rely too heavily on testing, grades, and disposable non-authentic assignments. Additional benefits could include integrating digital citizenship, global collaboration, and social media using a multidisciplinary approach that applies to all subjects of study. Teachers and administrators could benefit from this type of educational reform by taking on new perspectives associated with the appropriate and responsible use of technology in educational and industrial settings, on the benefits associated with digital citizenship education, and on global collaboration. By implementing this educational reform, teachers and administrators take on the roles associated with digital citizenship so that they can model appropriate digital citizenship behaviors for students.

A fourth implication for positive social change is that parents could become involved in students' learning about and taking on the roles associated with digital citizenship. Parental involvement could play a key role outside of educational settings as parents could take a more active role in students' use of technology to ensure that students uphold the principles associated with digital citizenship. Parental feedback could also help provide insight about how students perceive and use social media in their personal lives which, in turn, could help teachers and administrators bridge the gap between students' personal and academic uses of social media. Such parental involvement could spread digital citizenship skills to older individuals which could spawn additional digital citizenship outreach and education efforts to other areas of society.

Recommendations for Practice

Students are using technology such as social media at increasing rates both in and out of school. Students' misuse and abuse of technology is therefore of grave concern, but can be addressed and minimized through digital citizenship education. Such education could take the form of global collaborative projects that use social media to facilitate students taking on the roles associated with digital citizenship. Teachers, administrators, parents, and other stakeholders could use the results of this research study to make informed decisions about how to integrate digital citizenship, global collaborative projects, and social media in the middle school curriculum. The results of this research study have the potential to be transferred to elementary and senior high school curricula as well. Such a perspective was voiced by Participant 2 who advocated

an interdisciplinary approach to digital citizenship be used such that digital citizenship should be integrated in all courses of study at each grade level. The results of this research study could be used to guide educators on educational policy reform, curriculum enhancements, and professional development activities oriented toward integrating digital citizenship, global collaboration, and social media in middle school curricula.

Conclusion

Digital citizenship is a societal issue (Ribble, 2012) and plays an increasingly important role in world affairs given its pervasiveness and its infusion into society at increasing rates (ISTE, 2012a, ¶ 1). This phenomenon is of equal concern in educational settings given students' use of social media occurs at increasing rates (Davis et al., 2010; De Abreu, 2010) and given students' misuse and abuse of technology has been demonstrated to cause them harm (Cross-Tab Commission, 2010; Barczyk & Duncan, 2012; Hazari & Brown, 2013). Additional concern arises over the matter of teachers' lack of skills to combat students' misuse and abuse of technology (Pusey & Sadera, 2012; Sincar, 2011; Sincar, 2013) as well as teachers' confusion about social media as indicated by Participant 3, Participant 4, and Participant 5.

The findings of this study demonstrated that by integrating digital citizenship, global collaboration, and social media into the middle school curriculum, students who held narrow perspectives of their world transformed into students who became less ethnocentric, took an interest in and a responsibility for the welfare of the world, became global collaborators and sharers of knowledge, approached others online with empathy and caring, and became responsible users of technology in educational settings.

Transformative education can yield powerful and pro-social results in the lives of

students, communities, and societies. Barriers were encountered by students and

teachers, but were overcome with appropriate planning and communication. Curricula,

mandates and policies, and mindsets need to be refreshed and renewed with digital

citizenship coverage across all subjects as digital citizenship applies to all disciplines.

Educators should use the results of this study to take action that embraces change for the

benefit of all digital citizens, beginning with their students. Teachers should be included

in this effort in terms of professional development opportunities as they take on the

responsibility for preparing the workforce of tomorrow to embrace responsible uses of

technology, ethical and moral treatment of others in online spaces, and appropriate

management of social and information connections in an information rich and technology

centric global society. Hall and Hord asserted that schools are the primary unit for

change (2011, p. 9) and encouraged leaders to approach change as a process, not an event

(p. 8). As such, educators and administrators have a responsibility to prepare students for

their future as digital citizens, and such preparations should occur across the curriculum

throughout students' educational careers as a process rather than at a single point in a

single subject as an event. Participant 8 framed it equally well when describing where

change must start "I think the mindset needs to start with our teachers and

administration" and the time it takes to learn how to use social media appropriately "And

that doesn't take five minutes, it takes years."

To realize the potential of integrating digital citizenship, global collaboration, and

social media in the middle school curriculum, teachers and administrators can work

together as a team in the same manner as students who collaborate globally work together when building knowledge. The potential benefits span all levels of society including the micro or individual and family level, the meso or community level, and the macro or nation, region, or world level. The need for digital citizenship education is a global need, and the results of this study indicated that the need exists across three countries. I challenge teachers, administrators, students, parents, community members, and other stakeholders to invoke educational reform that advocates digital citizenship, global collaboration, and social media education in the curricula for the sake of students, communities, and global society. In doing so, we can aspire to transform mindsets and perspectives to embrace the proper use of social media and other technologies in educational settings and thereafter in industrial settings to ensure the digital safety of our children, our communities, and our global society now and in the future.

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Appendix A: Letter of Invitation

Dear [Teacher],

Because you and your students participated in the Flat Connections Digiteen and Digitween Wiki Project, you have special insights in the areas of digital citizenship, social media, and global collaboration. For this reason, I would like to invite you to participate in my research study about how digital citizenship, social media, and global collaboration can be integrated into the middle school curriculum to foster digital citizenship among middle school students. I am a doctoral student at Walden University and am inviting teachers who have participated in the Flat Connections Digiteen and Digitween Wiki Project. I am interested in discovering your perceptions about how your students developed as digital citizens as a result of participating in the Flat Connections Digiteen and Digitween Wiki Project digital citizenship project. We will use the telephone or Skype for a 45 to 60 minute interview.

By participating in this study you will help us discover how to help students become digital citizens in the highly networked world in which they participate. Your experiences with digital citizenship, global collaboration, and social media may help other teachers have positive experiences with their students. You may also benefit from this study by knowing that your efforts may make have a positive impact on others. You may also consider new ideas or reorient your perspective on digital citizenship, social media, and global collaboration as you reflect on your experiences during the interview. Such outcomes may help you adjust your existing digital citizenship program or may help you initiate new programs associated with fostering new digital citizenship programs in your school.

If you are willing to participate in my research study on integrating digital citizenship, social media, and global collaboration in the middle school curriculum, please respond with your intention to participate. I will then send you an informed consent form with additional details about my research study and your rights as a research study participant.

Thank you for your consideration and I hope to hear from with you soon!

Shane Snyder
Doctor of Education Student
Walden University
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Minneapolis, MN 55401
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Appendix B: Teacher Interview Protocol

Introduction and Background

Hello and good day. Thank you for meeting with me and agreeing to help me understand how your students developed as digital citizens as a result of participating in the Flat Connections Digiteen and Digitween Wiki Project digital citizenship project this year. Our interview is expected to take approximately 45-60 minutes of your time. Please know that all information will be kept confidential, and I encourage you to ask questions as you have them. As this study is voluntary, you may opt out at any point.

Do you have any questions for me at this point?

Permission to Record the Interview

For the purpose of transcribing our interview I would like to record our conversation. May I have your permission to do so? Excellent! Thank you for your cooperation.

[Initiate recording functionality.]

Time of Interview:

Date:

Method: Skype/Telephone

Interviewer: Shane Snyder, doctoral student at Walden University

Interviewee:

Interviewee Title: Teacher

Interview Questions

At this time let us focus on your experiences, ideas, and perceptions about your students.

[Research Question 1: What are teachers' perceptions about middle school students'

development as digital citizens when engaged in global collaborative projects?]

1. How would you describe your students' knowledge of digital citizenship and readiness to assume the roles of digital citizens at the beginning of the digital citizenship Wiki project?

2. What behavioral changes did you observe in students participating in the digital citizenship Wiki project?

3. How did students' perceptions of digital citizenship change after participating in the digital citizenship Wiki project?

4. How did students' willingness to become digital citizens change after participating in the digital citizenship Wiki project?

[Research Question 2: What are teachers' perceptions about strategies middle school students used to overcome barriers to taking on the roles associated with digital citizenship when engaged in global collaborative projects?]

1. Did the students face any barriers when collaborating with others in global projects? [If yes, use these follow-up questions]

   o Were any barriers too significant to be overcome?

     ▪ [If yes] Which barriers were insurmountable?

     ▪ Why do you think they were insurmountable?

   o How did students overcome the barriers faced when collaborating with others in global projects?

2. What did you do to try to help students overcome these barriers?

[Research Question 3: What are teachers' perceptions about the use of social media and global collaborative projects to enhance middle school students' digital citizenship and academic achievement?]

1. How did students use social media in the classroom?

2. How did students use social media out of the classroom?

3. How did students' perceptions of digital citizenship change when using social media for global collaborative projects?

4. How did social media and global collaboration enhance students' academic achievement?

5. How did social media and global collaboration enhance students' digital citizenship?

[Research Question 4: What are teachers' perceptions regarding integrating digital citizenship, social media, and global collaboration in the middle school curriculum?]

1. What did you find the benefits and challenges to be of integrating digital citizenship in the middle school curriculum?

2. How did your views on using social media in your classroom change as a result of this project?

3. How important is it to foster globally collaborative projects in education?

4. Describe the lessons you learned about students' perceptions of digital citizenship that might help you integrate digital citizenship into your school's curriculum in the future.

5. How did the digital citizenship Wiki project affect your students becoming

socially responsible digital citizens?

6. What else needs to be done?

Interview Wrap-Up

That concludes our interview and I thank you for your time and interest in helping with my research study. I envision that our combined efforts will help advance our understanding of how students can learn to be model digital citizens in our highly technological and networked world.

Do you have any final thoughts, suggestions, or questions you would like to offer or pose before we conclude this interview session?

Once again, thank you for your assistance today and I will be in touch regarding a de-briefing session.

Appendix C: Project Administrator Interview Protocol

Introduction and Background

Hello and good day. Thank you for meeting with me and agreeing to help me understand how students developed as digital citizens as a result of participating in the Flat Connections Digiteen and Digitween Wiki Project digital citizenship project this year. Our interview is expected to take approximately 45-60 minutes of your time. Please know that all information will be kept confidential, and I encourage you to ask questions as you have them. As this study is voluntary, you may opt out at any point.

Do you have any questions for me at this point?

Permission to Record the Interview

For the purpose of transcribing our interview I would like to record our conversation. May I have your permission to do so? Excellent! Thank you for your cooperation.

[Initiate recording functionality.]

Time of Interview:

Date:

Method: Skype/Telephone

Interviewer: Shane Snyder, doctoral student at Walden University

Interviewee:

Interviewee Title: Administrator

Interview Questions

At this time let us focus on your experiences, ideas, and perceptions about your Flat Connections Digiteen and Digitween Wiki Project digital citizenship project.

[Research Question 1: What are teachers' perceptions about middle school students'

development as digital citizens when engaged in global collaborative projects?]

1. As the organizer of the digital citizenship project, how would you describe teachers' knowledge of digital citizenship and readiness to serve as role models for digital citizenship at the beginning of the digital citizenship Wiki project?

2. How did teachers' perceptions of digital citizenship change after participating in the digital citizenship Wiki project?

[Research Question 2: What are teachers' perceptions about strategies middle school students used to overcome barriers to taking on the roles associated with digital citizenship when engaged in global collaborative projects?]

1. Describe the barriers teachers observed in students when collaborating with others in global projects.

2. Were any barriers too significant to be overcome?

    a. If yes, then which insurmountable barriers can be cited and why were they insurmountable?

    b. How did teachers help students overcome the barriers faced when collaborating with others in global projects?

3. Were students able to overcome barriers when collaborating with others in global projects without teacher intervention? If yes, then explain the strategies students used to overcome barriers.

[Research Question 3: What are teachers' perceptions about the use of social media and global collaborative projects to enhance middle school students' digital citizenship and academic achievement?]

1. As an administrator of the digital citizenship project, how did you perceive students using social media in and out of the classroom?

2. How did students' perceptions of digital citizenship change when using social media for global collaborative projects?

3. How did social media and global collaboration enhance students' academic achievement?

4. How did social media and global collaboration enhance students' digital citizenship?

[Research Question 4: What are teachers' perceptions regarding integrating digital citizenship, social media, and global collaboration in the middle school curriculum?]

1. As the administrator of the digital citizenship project, what did you find the benefits and challenges to be of integrating digital citizenship into the middle school curriculum?

2. What are your views on including social media in the classroom?

3. How important is it to foster globally collaborative projects in education?

4. How did the digital citizenship Wiki project affect students and teachers becoming socially responsible digital citizens?

5. What else needs to be done?

Interview Wrap-Up

That concludes our interview and I thank you for your time and interest in helping with my research study. I envision that our combined efforts will help advance our understanding of how students can learn to be model digital citizens in our highly technological and networked world.

Do you have any final thoughts, suggestions, or questions you would like to offer or pose before we conclude this interview session?

Once again, thank you for your assistance today and I will be in touch regarding a de-briefing session.

Appendix D: Wiki Analysis Protocol

Analysis of Wiki History Data and Artifacts

Research Question 1: What are teachers' perceptions about middle school students' development as digital citizens when engaged in global collaborative projects?

Wiki entries for perceptions of digital citizenship associated with:

- Collaboration

- Creation

- Modification

- Learning

- Demonstrating Digital Citizenship Skills

Research Question 2: What are teachers' perceptions about strategies middle school students used to overcome barriers to taking on the roles associated with digital citizenship when engaged in global collaborative projects?

Wiki entries for barriers associated with:

- Collaboration

- Creation

- Modification

- Learning

- Demonstrating Digital Citizenship Skills

Research Question 3: What are teachers' perceptions about the use of social media and global collaborative projects to enhance middle school students' digital citizenship and academic achievement?

Wiki entries for social media use regarding:

- Collaboration

- Creation

- Modification

- Learning

- Demonstrating Digital Citizenship Skills

Research Question 4: What are teachers' perceptions regarding integrating digital citizenship, social media, and global collaboration in the middle school curriculum?

Wiki entries for teacher feedback on:

- Collaboration

- Creation

- Modification

- Learning

- Demonstrating Digital Citizenship Skills

Appendix E: Confidentiality Agreement

AUTOMATIC SYNC
TECHNOLOGIES

Handling of User-Submitted Content

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