THE PERCEPTIONS OF DIGITAL CITIZENSHIP
IN MIDDLE SCHOOL LEARNING

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Abstract

Middle school students have the potential to have increased access to digital tools in the classroom. Given this opportunity, there is still limited research relating to the development of digital citizenship in middle school learning. The purpose of this qualitative case study was to investigate the impact of the Digital Driver’s License (DDL) Program had on perceptions of digital citizenship for school grades. The framework for this study included Ribble’s (2006) theory of digital citizenship, Siemens’ (2005) theory of connectivism, alongside theories of digital literacy. The research question addressed in this study was, “What are the perceptions of enrichment students and digital citizenship in the middle school classroom after engaging in the digital driver’s license (DDL) program?” Participants were made up from eight students enrolled in the gifted program and three faculty from the selected middle school. Interviews, surveys, and observational notes were used to collect data; coding was used to identify thick and descriptive themes. Findings showed the intervention program, increased positive perceptions regarding digital citizenship in middle school learning. Specifically, trends that emerged were grouped by three elements of digital citizenship: digital etiquette, digital communication, and digital literacy. Digital etiquette found enhanced awareness of digital footprint, adopted digital etiquette perspectives, and heightened interest in bias of ethnocentrism. Digital communication results indicated defined differences in types of digital communication. Finally, digital literacy themes found the need for open access to technology and curriculum modifications fully integrating G-Suite and the Digital Drivers’ License Program. In order to meet the needs and to increase digital citizenship skills, new attitudes from all stakeholders need to take on a positive approach to the increases in technology.

Keywords: digital driver’s license, digital citizenship, connectivism, digital literacy
Dedication

For as long as I can recall, I have been what many may consider an over-achiever, frequently putting unnecessary stress and arbitrary timelines on myself. As I have gotten older, and consequently more mature, I have recently realized these self-mandated successes have merely been to prove only to myself what I was truly capable of accomplishing. Unfortunately, some (if not most) of these goals have come with momentary (or possibly extended) meltdowns, if you will. Given we are all only human, these times in our lives are bound to happen. I can assure you this journey toward obtaining my Ed.D. has been no exception. I would first like to dedicate this dissertation to my “Momma” and my “Daddy” for allowing multiple whoa-is-me and irrational moments without judgment, scolding, or making fun; instead they offered words of wisdom, encouragement, and even silence when needed to get me back to a level space. I would also like to dedicate this to my “Honey Bunny”, Chris, for his support and concern throughout this process and for his patience given the amount of fast-food consumed and the lack of laundry done during the last year and a half. Last, and definitely not least, this goes to Mamaw Lucy for inspiring my interest in writing and for keeping an eye on me from Upstairs; I always see your red birds flying around. While these words will never express the love, respect, and gratitude I hold for each of you-- Hugs and love!
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Chapter 1

Introduction

Since the invention of the alphabet, learning has occurred linearly. However, with the advent of digital technologies, learners have shifted to a more repetitive learning style (Havelock, 1986). Sekeres, Coiro, Castek, and Guzniczak (2014) reported students were no longer linear in their learning and thinking but, instead, more flexible and less recursive. Prior to the Millennial and Generation Z age groups, student learning simply involved paper and pencil activities and merely reading from left to right (Coiro, 2012; Havelock, 1986). While technology in its most basic form was a staple within classrooms for a century, its inclusion in the curriculum did not have the same societal impact of today’s digital technology capabilities (Erstad, 2013).

Background of Study

The availability of digital technologies in public schools has varied from district to district and even from school to school within the same district. Some schools and districts have incorporated multiple avenues such as providing a 1:1 initiative for their students, while others may not yet have any substantial type of technology in the classroom. The 1:1 initiative was implemented to have one laptop, or similar device, per every student in the building for students to have more access to Internet capabilities. The costs of computers and means of access to technology were reported to be constantly decreasing, and the opportunity to truly engulf students was no longer limited to only a 1:1 setting, but instead created a one to world experience (Penuel, 2006). This type of instruction has been an increasing reality for many school districts (November, 2013; Penuel, 2006).
Adams Central Public Schools (2016) best described one to world instruction as an initiative that provided students with the tools and skills sets to increase active learning and student engagement. Proficiency under the one to world model included skills like communication, problem-solving, and collaboration within a digital platform that encompassed vertical alignment and differentiated instruction to meet the needs of all students. Essentially, refocusing from merely having a device to focusing on understanding the device provided the potential for teacher empowerment and student engagement that could design true learning community (November, 2013). Adams Central Public Schools (2016) suggested the result of one to world experiences catered to academic achievement, student involvement in learning, and a customizable learning community that prepared students to thrive in a media-driven and technology-based culture where effective citizens can simulate functional and critical thinking in both information and digital literacy.

**Research Problem**

According to Fisher, Frey, and Hattie (2016), a strong educational foundation could set the stage for meaningful learning. Teachers needed to be mindful of students’ starting points in the learning cycle. Initial surface learning set the necessary foundation for deepening knowledge and developing transfer that would come later. The authors also stated up to 90% of the instructional time was devoted to conveying facts and procedures. For students to deepen their knowledge, they needed their learning made visible to them through feedback, questioning, and self-regulation. The goal of deep learning should be to foster self-regulation and self-talk. Transfer learning was defined as a goal for learning and a mechanism for propelling learning, meaning students began to take ownership of their learning as they deepened their knowledge.
The transfer was also described as a mechanism for learning when students acquired, consolidated, and deepened their knowledge as they continued to learn.

As districts adopted 1:1 initiatives, it was only natural to encompass these learning styles in a digital world to understand how students learn. The understanding of how and what students need to learn has changed; therefore, schools must adapt to the new models that have been integrated into modern technology (Erstad, 2013). Because of the introduction of new technologies, the definition of literacy evolved from simply decoding paper text to meaningfully interacting with technology, and this definition continues to evolve (Coiro, 2003). Based on this knowledge, educational leaders must take responsibility for implementing and integrating the elements of digital citizenship so that stakeholders can productively move schools into a digital age. Larson, Miller, and Ribble (2009) indicated if digital citizenship skills were properly embedded in the curriculum of students in middle school grades, then gains in the classroom may be possible.

**Purpose of Study**

There were several important skill-sets students must develop, including creating environments that foster collaboration, discussions, and allowing students to engage in face-to-face skills that required building credible arguments, a negation of others’ opinions, and effective presentations. Students must also be provided with authentic learning experiences because authentic opportunities allowed for personalized learning for the students (Coiro, 2016).

Dotterer, Hedges, and Parker (2016) suggested the prominence of digital resources available to many gave the false assumption that younger generations knew more about technology and were masters of these learning experiences. Their report also stated that the basis of technology was far more in-depth than using the newest social media or getting the highest
score on the trendiest app-based game, meaning digital natives still needed guidance. As introduced by Prensky (2001b), digital natives were those learning and interacting differently than older generations due to use of the Internet and electronic games.

True computer literacy involved an understanding of how to navigate tools that help produce quality work for all purposes. Everything from proper Internet searches, cloud-based storage, technology-based vocabulary, and electronic collaboration were considered the basis of this type of knowledge and could potentially impact students when weaved into core curriculums and applied to life applications (Larson, Miller, & Ribble, 2009). Furman (2015) proposed educators be informed of these needs and have access to research supporting these needs as they were stated within the International Society for Technology in Education (ISTE) standard framework. Furman’s (2015) argument also stated ISTE advocated all K-12 students be prepared to meet the following indicators regarding technology: creativity and innovation, communication and collaboration, research and information fluency, critical thinking, problem-solving, decision making, digital citizenship, and technology operations and concepts.

Without a firm foundation of understanding of technology, a one to world initiative was considered ineffective for students because learning would not increase by the sheer presence of more technology. The understanding itself must start with teachers being properly trained and educated regarding the effectiveness of a device to produce a fundamental change of culture in teaching and learning. Ultimately, vertically aligned goals across the curriculum could result in increased learning and digital citizenship (November, 2013). This concept was more appropriately termed as digital citizenship, an opportunity in which educators and parents fully understand how students should appropriately engage and utilize technology. Proficient knowledge of digital citizenship allowed users to embrace the norms of acceptable and
responsible use of all aspects of technology because the focus was both how to use properly and appropriately (Ribble, 2017b).

Research Question

The question for research was based on the researcher's background, the problem statement, and the purpose of the study to gain an understanding of digital citizenship regarding middle schoolers. The data gathered from the research methods for this plan were analyzed and answered the following question:

What are the perceptions of enrichment students and digital citizenship in the middle school classroom after engaging in the digital driver’s license (DDL) program?

Rationale for Study

Reportedly, as technology integration continued to increase in our society and the educational arena, it was paramount that teachers possess the skills and behaviors of digital-age professionals. The ISTE Standards for Teachers identified several benchmarks that should be integrated into teaching to motivate and engage students: modeling digital-age work and learning, promoting and modeling digital citizenship and responsibility, and engaging in professional growth and leadership by participating in global learning communities (Furman, 2015). Educators must balance technology and its long-term possibilities to identify gaps to grow a shared vision of technology in the classroom (Larson, Miller, & Ribble, 2009). As clear visions were established to connect students to a world of resources, the biggest task would truly be shifting the responsibility of technology use while still creating opportunities for authentic and meaningful work that could prepare students for accomplishment (November, 2013).

As the number of devices increased, crafting a vision wherein digital devices correlated to achievements beyond pencil and paper was essential for learning (November, 2013).
Research and educational reports suggested there were multiple platforms from which this form of instruction could be introduced; however, a substantial amount of research indicated Google provided educational settings with a multitude of free tools that were beneficial from kindergarten to collegiate level learning to maximize the understandings of digital citizenship. In addition to the number of tools available, Google has continuously improved their search engines and their applications to keep them as user-friendly and as simple as possible. This provided a larger focus on the core of the project rather than placing emphasis on formatting and navigating the tool (Rochelle, 2016). Given Google’s presence in education alongside other Web 2.0 technologies and learning opportunities, it was suggested digital citizenship, if properly implemented, could be learned quickly and appropriately as new features were made available to users (Ribble, 2017a; Rochelle, 2016).

Ribble’s (2017b) concepts regarding the elements of digital citizenship help guide the expectation of appropriate and responsible behaviors when using technology, while Siemens’ and Downes’ (2005) theory suggested technology redefined how people live, learn, and communicate by conceptualizing technology and connection-making under the realm of learning activities in conjunction with previously defined theories of digital literacy and Ribble (2006) alongside Siemens and Downes (2005) guided the framework for investigation.

**Background of Researcher**

At the time of the study, the researcher was a middle school media specialist located in the eastern part of Tennessee. She holds certifications to teach grades K-12 and Special Education. The researcher chose middle school library for more than the age range; rather, she holds a true passion for exposing students to the digital world. By incorporating Tennessee State Standards for technology, the researcher created a curriculum that is fully immersed in digital
citizenship. In doing so, she exposed students to research skills and STEAM, or Science, Technology, Engineering, Art, and Mathematics, allowing students the opportunity to be fluid in a variety of technologies in which vertical alignment was taking place and students were experiencing meaningful learning.

This topic was of interest to the researcher for multiple reasons. Not only did she want students to experience an abundance of exposure to the digital world, but she also wanted students to have the ability to master computer literacy skills by way of authentic and meaningful learning. The researcher endeavored to investigate the relationship between these technologies and becoming a successful digital citizen. By understanding what students know and how they utilize technology, the researcher will be able to address students' needs and interests through a one to world approach by using vertical alignment techniques to restructure curriculum with Web 2.0 advances and online learning communities to produce digital citizens for the future.

Definition of Terms

Terminology referenced in this study applies to the classroom and other educational settings. The following list of terms and their respective definitions were included to provide relevance to the study:

1:1 initiative. A 1:1 initiative is the idea in which an environment can provide students with computing devices to learn at any place and at any time. Within this environment, the focus is not the technology, but instead the shift in how instruction is presented to promote student creation, enthusiasm, and ownership of learning (InCare Technologies, 2017).

Accessibility. Accessibility to technology refers to the applications, devices, materials, and environments that enable access and content of educational activities for all learners (U.S. Department of Education, 2017).
**Bring your device (BYOD).** The bring your device concept allows students to bring their devices, such as smartphones, tablets, or laptops, into the classroom to enrich and supplement the learning experience (Washington State School Directors’ Association, 2014).

**Computer literacy.** In its simplest form, computer literacy is the basic knowledge and abilities a person exhibits when using computers and technology efficiently (Liao & Pope, 2008).

**Equity.** The equity of technology refers to the increase of all students’ access to educational opportunities with the focus to close achievement gaps (U.S. Department of Education, 2017).

**Digital citizenship.** Digital citizenship encompasses all technology and online opportunities that leave users safe, ethical, responsible, and informed of specific skills within the digital community (U.S. Department of Education, 2017).

**Digital use divide.** The digital use divide refers to the separation of students using technology to transform their learning and students who merely use tools to complete activities (U.S. Department of Education, 2017).

**Digital native.** The term digital native refers to young people who have grown up around digital technologies and instinctively understand (Dotterer, Hedges, & Parker, 2016).

**G-Suite for Education.** Formerly referred to as Google Apps for Education, or GAFE, is a set of free productivity tools for classroom learning and collaboration (Rochelle, 2016).

**One to world initiative.** A one to world initiative is the process of incorporating technology into curriculums and instructional practices to involve students in active learning and to increase skills in communication, problem-solving, and collaboration (Adams Central Public School, 2016).
Online learning community. An online learning community is a group sharing common academic goals and attitudes to communicate updates through forums fostering interactions, collaborative learning, socially constructed meanings, the sharing of resources, and support and encouragements (Katherman, 2017).

Project-based learning. Project-based learning, PBL, is the implementation of 21st Century skills, including creativity, collaboration, and leadership when working through critical thinking and real-world challenges (U.S. Department of Education, 2017).

Personalized learning. Personalized learning refers to instructional content at a pace and with a style of learning that is optimized for the needs of individual learners (U.S. Department of Education, 2017).

Vertical alignment. Vertical alignment occurs when students are learning and preparing for what will come next because the teaching is purposeful and logically sequenced, so learners acquire knowledge progressively while preparing them for higher-level skills (The Glossary of Education Reform, 2013).

Web 2.0. Web 2.0 is the current understanding of online technology in which collaboration among users and content is the most significant difference from the traditional World Wide Web (Rouse, 2017).

Summary

Effective instructional strategies were used to develop proficiency for different avenues of information and communication technologies (International Reading Association, 2002). By combining traditional teaching strategies, students should be able to think creatively, enhance student ability to work collaboratively with other students, improve the ability to apply digital tools to gather and utilize the information they obtain, conduct research, manage projects, solve
problems, and demonstrate fluency in technology concepts (Furman, 2015). Additionally, using online learning, the platform of technology, computer literacy, independence, and collaboration, the preliminary research concluded that better performance in student work might be possible when exposed to digital citizenship. The reasoning behind the use of technology and computer literacy has been more pressing than ever for the survival of future educational and social successes for everyone but especially stakeholders within the educational realm. The proposed research introduces these concepts by embedding a rigorous curriculum encompassing core skills and digital citizenship. Data were collected and analyzed to determine if there is a relationship between digital citizenship and the performance in classes for middle school students. The purpose of research is used to consolidate newly gained knowledge, to discover new educational issues, and to develop new strategies and teaching methods (Manfra, 2009).
Chapter 2

Review of Literature

Literature synthesis of peer-reviewed content, trusted educational articles and postings, research studies, and technology-based publications were used to explore the history and evolution of technology in the classroom as well as the need and the presence of technology. The variety and application of technologies within the realm of the classroom were also considered. By creating a solid understanding of the relationship between technology and learning, teachers can provide a better foundation for supporting learners with the integration of technology in the classroom. While appropriate technology integration, such as G-Suite for Education and other meaningful Web 2.0 platforms, has proven essential and successful in today’s classroom, research also showed it was crucial to understanding the balance between effective instruction and meaningful technology instruction along with the history of these technologies. Gathered references implied that with these understandings, students could become better learners as they gained interest and motivation. Consequently, students also engaged and embraced the learning process making them model digital citizens, proper users of Web 2.0 capabilities, practitioners of computer literacy skills, and believers of the one to world ideology.

The purpose of the qualitative study was to gain student and teacher insight concerning digital citizenship in a middle school setting. This review of the literature provided the foundation of understanding for the study by exploring the following: the history and evolution of technology use including its integration into the classroom, and connectivism as a lens to view digital literacy and digital citizenship. These integral components led to empirical evidence which confirmed the significance of designing a case study to explore the perceptions of digital citizenship and middle school learning.
The Evolution of Technology in the Classroom

Having a well-equipped classroom in the 21st Century may be described as including the basic technological equipment required for teaching and learning. The research stated this included the tools to serve a diverse group of learners and to redefine the best practices of teaching (Boss, 2011). An EdTech Magazine (EdTech Staff, 2016) online posting also expressed the importance of the history and transformation of technology over the past century and a half as these changes evolved into learning digitally. Additionally, the understanding and definition of technology have drastically changed and evolved (Teach Thought, 2014).

Marcinek (2015) stated it was educators' responsibility to inform students in the non-digital classroom so that students could better understand the digital world they are active in developing. The culture of learning through means of technology started in the primitive classroom and had grown into an era where students are provided multiple technological devices for learning making technology's impact more evident than ever. More importantly, resources noted these new educational opportunities were being created, changing, and growing daily because of the technological innovations starting in the primitive classroom (EdTech Staff, 2016).

The primitive classroom. The colonial era of the classroom served students with Horn-Books, or wooden paddles, with printed lessons; these were primarily used to learn verses from scripture (Purdue University, 2017). Approximately 200 years later, the ferrule was incorporated as a means of implementing corporal punishment to decrease undesired behaviors (Dunn, 2011).

The one-room schoolhouse, where one teacher would teach the basics of learning to several grade levels, began in 1860 (EdTech Staff, 2016). By 1870, technology had begun to advance, and magic lantern was created. This device served as a primitive model of a slide
projector by displaying images that were printed on glass plates (Purdue University, 2017). The school slate was invented in 1890, as well as the chalkboard (Dunn, 2011; Purdue University, 2017).

**The pre-computer classroom.** By 1900, the pencil and the chalkboard were readily available. In 1905, the stereoscope was invented by Keystone View Company; the device served as a three-dimensional view tool popular for illustrating points addressed during lecture (Dunn, 2011). By the end of World War I, close to 8000 magic lanterns were in use in Chicago Public Schools alone. During the 1920s, New York City’s Board of Education was the first to bring the radio into education. On-air classes could be heard by any student within listening range to engage in lessons (Purdue University, 2017). The film projector was also invented during this decade. The overhead projector was introduced in 1930. A decade later the ballpoint pen gained popular recognition in the classroom. In 1940, the mimeograph was invented allowing teachers to make hand-cranked copies (Dunn, 2011).

The 1950s were a prominent decade for advancements in technology and education. The year 1950 brought headphones into the classroom providing listening stations, also termed language labs. The same year slide rules were introduced; this device was most commonly used as a calculation tool in science and engineering (Dunn, 2011). The following year, videotapes arrived as a new and exciting instructional method was implemented (Purdue University, 2017). In 1957, the reading accelerator and the Skinner Teaching Machine were released. Both devices allowed students to work at independent paces; however, the Skinner Teaching Machine produced a system of teaching and testing, allowing for correct answers to advance to the next lesson (Dunn, 2011; Purdue University, 2017). In 1958, educational television was invented.
The photocopier, also known as Xerographic office photocopying, debuted in 1959 courtesy of Xerox.

The next twenty years continued the trend in advancements with the invention of Liquid Paper and whiteboards in 1960 (Dunn, 2011; EdTech Staff, 2016). Five years later, the filmstrip viewer was introduced for students to watch filmstrips at their pace independently. The 1970s introduced the handheld calculator and the Scantron Machine, both of which gave the potential of stream-lining instruction.

**The advancing classroom.** The mid-seventies into the 1980s made great stride with the invention of the smaller desktop computer. Apple 1 desktops were donated to schools by Apple Inc. in 1975; however, the year 1980 provided public schools the PLATO Computer, which was the most-common early computer in the classroom (Dunn, 2011; EdTech Staff, 2016). One year later, IBM released its first portable computer to the public market. Apple introduced its Powerbook in 1984 (Purdue University, 2017). In 1985, the CD-ROM drive was invented, playing video and audio through a single device. The same year, the handheld graphing calculator was created (Dunn, 2011).

In 1990, the World Wide Web and HTML were developed. By 1993, the use of the Internet became public creating new methods of research and communication. In 1993, Apple created the first Personal Digital Assistants (PDAs). The interactive whiteboard was first released in 1999 (Purdue University, 2017).

**The 21st Century classroom.** The next 20 years brought continued improvements to these devices, and by 2003 the first generation of social media, MySpace, was introduced (EdTech Staff, 2016). YouTube was launched in 2004, and in 2005 the interactive clicker was made available for classroom use (Teach Thought, 2014). In 2010, the Apple iPad and other
tablet devices were created opening more possibilities to the world of education, research, and the Internet (EdTech Staff, 2016). By 2013, mobile apps were being used in the classroom as another method of supporting instruction (Teach Thought, 2014).

The history of Web 2.0. The presence of Web 2.0 technology must first be defined by its predecessors, the World Wide Web and the Internet. The Internet originated in 1969 as a link up of four computers stationed at the University of California on the Los Angeles and Santa Barbara campuses, the Stanford Research Institute, and the University of Utah (Van Sluyters, 1997). The World Wide Web was comprised of HTML, URI, and HTTP; these items were used to create browsers and servers for the Internet. The World Wide Web was created by Tim Berners-Lee, and by 1993, it had been made available to the public for use. While Berners-Lee did put the pieces together for the World Wide Web to become a possibility, the research and bits of information were established almost 50 years earlier in 1945 (World Wide Web Foundation, 2017). To transmit and to receive information, an Internet Protocol and a Transmission Control Protocol was present in the software of a computer, and these protocols still exist. These protocols allow disk drives, destinations to the computer, and routers to work seamlessly to create a meaningful format for users almost instantaneously. As long as a user had an Internet Service Provider, the other actions took place automatically. Since the Internet serves as a 2-way connection between remote sites, the World Wide Web links the users so that connections to pages and sites can be reached automatically (Van Sluyters, 1997).

The early web community, in conjunction with the Internet, revolutionized thinking even beyond the technology sector. Most importantly, consensus for universal standards was established so that the World Wide Web was equitable for all users. Freedom of censorship and surveillance began because there was no permission needed to interact. The birth of net
neutrality was born, meaning that if two parties are paying for service, then both parties had access to communicate. Since all computers needed the same components to communicate, universality regardless of culture or belief was possible. The writing of code expanded from a small group of experts to encouraging patrons to participate in experimentation (World Wide Web Foundation, 2017). These possibilities were what established access to e-mail, list servers, file transfers, URL browsers, web pages, search engines, and hypertext links within the World Wide Web (Van Sluyters, 1997; World Wide Web Foundation, 2017).

Moving forward, the World Wide Web defined an Open Web Platform to ensure that developments enabled interactive experiences, extensive data storage, and availability on any device. Under this movement, the following indicators evolved into Web 2.0 for both developers and users: 1) web design and applications, 2) web of device, 3) web architecture, 4) web of data, 5) XML technology, 6) web of services, and 7) browsers and authoring tools (W3C, 2017). The most critical difference between Web 1.0, or the World Wide Web, and Web 2.0 is that a user is no longer a consumer of content, but also a creator of content. The consumer-driven nature of the World Wide Web still exists for many. Web 2.0’s ability to click, connect, comment, and create has impacted all Internet users creating and engaging in new social applications by allowing popularity and circulation to quickly increase as well as the number of peer to peer interactions (Cormode & Krishnamurthy, 2008).

**Connectivism, Digital Literacy, and Elements of Digital Citizenship**

Before the introduction of the digital classroom, students were simply separated by rooms in a school building and would attend class for daily instruction. Marcinek (2010) indicated that even with the new era of technology most learning still occurred traditionally. In a 2009 survey, students indicated that the Internet provided positive learning opportunities in the classroom.
This study examined how teachers used technology to enhance instruction. Findings showed the use of technology to be highly beneficial for student learning. Students demonstrated an increase in motivation, attention, and engagement. The researchers concluded increases were due to a positive correlation between students’ attitudes toward learning and their successes in both online and offline texts (Coiro, 2012). Marcinek (2010) determined it was important to understand the benefits of virtual learning where learning was essentially limitless. According to his report, these types of learning environments encompassed Web 2.0 skills, network building, and the responsibility of social media, all of which required digital citizenship. When ultimately presented with these opportunities, students connected to the entire world by taking down the four walls of a classroom.

The International Society for Technology in Education (ISTE) was identified as a standards-based organization that emphasized the knowledge and values students needed to flourish in a digital world. In 1998, ITSE implemented new methods of learning technology in the classroom, and in 2007, the organization restructured to implement the use of technology to learn. In 2016, the paradigm finally evolved into transformative learning with technology (2017). With updated student standards, ISTE (2016) created a set of indicators for students to be successful in an evolving technological society. These indicators focused on students becoming 1) an empowered learner, 2) digital citizen, 3) knowledge constructor, 4) innovative designer, 5) creative communicator, and 6) a global collaborator. Specific student standards were listed as follows:

- Students leverage technology to take an active role in choosing, achieving, and demonstrating competency in their learning goals, informed by the learning sciences.
• Students recognize the rights, responsibilities and opportunities of living, learning, and working in an interconnected digital world, and they act and model in ways that are safe, legal, and ethical.

• Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts, and make meaningful learning experiences for themselves and others.

• Students use a variety of technologies within a design process to identify and solve problems by creating new, useful, or imaginative solutions.

• Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.

• Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats, and digital media appropriate to their goals.

• Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally. (ISTE, 2016, p. 2-8).

Additionally, the organization detailed effective methods to design, implement, and assess learning experiences (ISTE, 2008). Teacher standards were listed as follows:

• Facilitate and inspire student learning and creativity

• Design and develop digital age learning experiences and assessments

• Model digital age working and learning

• Promote and model digital citizenship and responsibility
• Engage in professional growth and leadership (ISTE, 2008, p. 2-5).

The literature above embedded purpose behind the research study. George Siemens’ and Stephen Downes’ (2005) theory of connectivism and the concept of digital literacy alongside Mike Ribble’s (2006) nine elements of digital citizenship provided a theoretical framework for exploring literature that would inform and create understanding of digital citizenship. The knowledge behind the evolution of technology, the purpose of the significance of technology in the classroom, Web 2.0 technologies, 1:1 and one to world initiatives, and professional developments all played critical roles in defining the urgency for digital natives to be exposed to digital citizenship curriculums in the classroom.

The theory of connectivism. Siemens (2005) developed connectivism to meet the needs of 21st Century learners. In the 20 years before his theory, Siemens noted technology redefined how people live, learn, and communicate. He also reported technology was rewiring how the brain operated. Siemens felt that behaviorism, cognitivism, and constructivism were no longer consistent within learning environments. By including technology and connection-making under the realm of learning activities, learning theories had entered the digital age. The theory of connectivism was defined as the integration of the principles of chaos, network, and complexity and self-organization theories. This pedagogy was meant to understand and explore learning in a digital age through social interactions and networks of people, places, and media (Wang, Chen, & Anderson, 2014). Kop and Hill (2008) proposed knowledge did not come from one specific location but instead from information presenting itself due to many people inquiring about common interests and providing one another feedback. Knowledge needed to be connected with the right people in the right context for learning to occur (Siemens, 2005). By denouncing behaviorism, cognitivism, and constructivism, actionable knowledge, the understanding of
finding new knowledge became more important than answering what the knowledge itself encompassed (Duke, Harper, & Johnston, 2013). Siemens' (2005) theory stated the following 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. (Siemens, 2005, p. 25).

Siemens (2005) further explained that the beginning point of connectivism was an individual. Independent knowledge was made up of a network which fed into an organized institution, which would end up back into the network, and would continue to provide knowledge. Therefore, information and knowledge served as a foundation for continuous learning and access to information.

**The theory of digital literacy.** The development and advances in digital technology created for users the opportunity to operate in digital environments; this concept was known as digital literacy (Eshet-Alkalai, 2004). This type of literacy evolved from practices such as web
surfing (Blackburn, 2010). Additionally, digital natives had exposure to digital technologies and embraced the digital world; therefore, they reportedly thought and worked differently. The idea of digital literacy was considered critical since digital natives were now in the classroom. At a time when students were learning to use technology at the same time as teachers, misunderstanding of how technology could be used caused divides in the classroom (Ribble & Bailey, 2005). These divides in learning were incited by outdated methods of instruction that did not meet student needs (Kivunja, 2014).

Digital literacy has been defined by both technical and procedural skills as well as cognitive and emotional skills (Aviram & Eshet-Alkalai, 2006). With a variance in definition, digital natives were not learning in a linear, paper-based fashion (Kivunja, 2014). Eshet-Alkalai (2004) provided a more specific framework for understanding how learners operate in digital environments. Listed below were the concepts within the framework:

- Photo-Visual Literacy: The Art of Reading Visual Representations,
- Reproduction Literacy: The Art of Creative Recycling of Existing Materials,
- Branching Literacy: Hypermedia and Non-Linear Thinking,
- Information Literacy: The Art of Skepticism, and

By redesigning the understanding of digital literacy, this framework provided educators better guidelines for creating effective digital environments for their students. Research from Kivunja (2014) stated it was critical for educators to embrace digital immersion in the classroom, reorganize classroom instruction, and provide digital natives with a digital workplace. Educators had to accept that technology should be incorporated as valuable, scholarly instruction
(Blackburn, 2010). Ultimately, digital literacy became a skill for survival requiring real-time thinking because of information processed so quickly in the digital era (Eshet, 2012).

**Digital citizenship.** Historically the term *citizenship* was associated with the steps of social decision-making. These steps typically required the fundamentals of reading, writing, and arithmetic, the fundamentals that allowed students to survive the demands of the public eye. The technology of the 21st Century, however, shifted the scope of citizenship to a media-based demand. Therefore, basic skills for digital literacies required assembling knowledge, evaluating information, and searching and navigating in a non-linear fashion (Simsek & Simsek, 2013).

Ribble (2017b) organized the concept of digital citizenship as a set of expectations regarding appropriate and responsible behaviors when using technology. Furthermore, Hobbs and Jenson (2009) defined digital citizenship as a mixture of skill-sets and knowledge needed to be effective in social media environments.

As more schools have 1:1 ratios with technology, the need to educate stakeholders about digital citizenship has also increased (Swan & Park, 2015). Additionally, the focus on teaching technology skills and closing the gap among stakeholders was highly elevated. Reportedly disconnects limited the learning process (Hobbs & Jenson, 2009). For effective instruction when teaching digital citizenship, the framework included extensive awareness, guided practice, modeling and demonstration, and feedback and analysis (Ribble, 2009). Instruction consisted of Ribble’s (2017b) nine themes of digital citizenship:

- **Digital Access:** full electronic participation in society.
- **Digital Commerce:** electronic buying and selling of goods.
- **Digital Communication:** electronic exchange of information.
• Digital Literacy: process of teaching and learning about technology and the use of technology.

• Digital Etiquette: electronic standards of conduct or procedure.

• Digital Law: electronic responsibility for actions and deeds.

• Digital Rights & Responsibilities: those freedoms extended to everyone in a digital world.

• Digital Health & Wellness: physical and psychological well-being in a digital technology world.

• Digital Security (self-protection): electronic precautions to guarantee safety.

(Ribble, 2017b, p. 2-10).

Ribble (2017b) aligned the elements of digital citizenship with the principles of respect, educate, and protect. By following these principles, stakeholders would focus on an individual's use of technology and the responsibility for an individual to do the same for others. Ribble's (2017b) principles were outlined accordingly:

• Respect Your Self/ Respect Others
  • Etiquette
  • Access
  • Law

• Educate Your Self/ Connect with Others
  • Literacy
  • Communication
  • Commerce

• Protect Your Self/ Protect Others
Ribble (n.d.) advocated technology leaders must instill a vision for intelligent use of technology for stakeholders. If students were expected to interact in a civilized technological society of the 21st Century, digital citizenship had to be a priority in a public education.

The Significance of Technology in the 21st Classroom

The vision of new age technology in the classroom began in the 1960s, with Seymour Papert, a professor at the Massachusetts Institute of Technology (Boss, 2011). Even half a decade prior, Papert descriptively spoke of students using computers as learning devices to enhance creativity and innovation and to solidify computational thinking. According to his online biography, while other scholars laughed at Papert, Papert was conducting long-term, meaningful research in which every child could potentially have access to an inexpensive personal computer (Papert.org, n.d.). His research led to the Logo programming language, in which students could be active learners on their own devices. Such activities included writing and debugging programs that controlled a moving turtle robot. In 1970, Papert reportedly said by using computers in the classroom, teachers would be able to intersect fun things with educational things to keep students internally motivated (Boss, 2011).

Since Papert's vision, the tools and the technology-based learning in the classroom grew more useful and more available, while the limitations to access were reported to decrease significantly. Boss (2011) suggested the modern classroom had more tools than imaginable, ranging from an interactive whiteboard to a personal device with the capability to access the array of Web 2.0 possibilities. Supporting these findings, a study conducted by Hansen (2008)
documented technology inspired creativity in early childhood classrooms through developing ideas, making connections, inventing, collaborating, communicating, and evaluating. Within this resource, additional studies that also explored the use of technology for reading and writing, found that children who used word processors produced compositions of better quality than did students who used pen and paper. These indicators also proved that students were more motivated to read and write when computers were available.

When computers were first introduced in schools, there were computer labs, followed by learning pods, followed by notebook programs, followed by the 21st Century initiative- 1:1 mobile technology (McClean, 2016). The Partnership for 21st Century Learning (2016), another organization established to ensure student success and learning in an ever-changing world, determined that as knowledge and skills of technology operations were combined with standards based curriculum, instruction, and assessments, students were more engaged in the learning process. For learning to become meaningful for students, the collaboration within technology and media-driven environment must be purposefully accessible to an abundant and rapidly changing amount of information.

The latest publication of the National Education Technology Plan, a national vision plan for instruction through technology, outlined how to engage and empower learning through teaching with standards of technology. By focusing on personalized learning opportunities for students, 21st Century competencies should be weaved throughout learning experiences by collaboration and project-based learning, using multiple digital literacies. These learning tools were reported to offer more flexibility, customization, collaboration, and vertical alignment (U.S. Department of Education, 2017). These recommendations aligned with the 21st Century
Standards for Teachers. The suggested elements were defined accordingly (Partnership for 21st Century Learning, n.d.):

- 21st Century Standards
  - Focus on 21st Century skills, content knowledge and expertise.
  - Build understanding across and among academic subjects as well as 21st Century interdisciplinary themes
  - Emphasize deep understanding rather than shallow knowledge
  - Engage students with the real-world data, tools, and experts they will encounter in college, on the job, and in life--students learn best when actively engaged in solving meaningful problems
  - Allow for multiple measures of mastery

- Assessment of 21st Century Skills
  - Support a balance of assessments, including high-quality standardized testing along with effective classroom formative and summative assessments
  - Emphasize useful feedback on student performance that is embedded into everyday learning
  - Require a balance of technology-enhanced, formative and summative assessments that measure student mastery of 21st Century skills
  - Enable development of portfolios of student work that demonstrate mastery of 21st Century skills to educators and prospective employers
Enable a balanced portfolio of measures to assess the educational system's effectiveness at reaching high levels of student competency in 21st Century skills (Partnership for 21st Century Learning, n.d., p. 11-12).

The U.S. Department of Education (2017) also reported not only do most schools have access to Internet, but most of those classrooms have broadband connections for reliable use. Additionally, the prices of devices for school use were reportedly available at an all-time low, and the number of students and teachers that are understanding the responsibility of digital citizens was on the rise. The report stated new technologies allowed students to communicate and collaborate with peers through a digital means. As of 2016, Generation Z youth were considered digital natives, meaning they more naturally understood how the digital world operated. Further research by Prensky (2001b) suggested, however, even though children were considered digital natives, they still required guidance. Boss (2011) proposed for this learning to take place, it was important to understand the purpose of learning in a digital classroom. Furthermore, Boss (2011) indicated the simple act of making technology available was not enough, but also the need for challenging activities within the realm of technology was essential. Her research determined technology should be used for ambitious learning goals to develop an understanding of thinking skills, creativity, and research design. Through these learning experiences, students should experience engagement, collaboration, real-world connections, and the tools to gain new knowledge.

Dotterer, Hedges, and Parker (2016) indicated by making technology in the classroom present and purposeful, it was ensuring that students not only knew how a device operated but also how to properly use the device as a tool and a learning experience. According to Jose Bowen, the access to knowledge has not made students smarter, and a smart device was not
smart unless it was used appropriately (The Wall Street Journal, 2015). There was still a digital use divide between learners using technology in active and creative ways and learners who use technology for passive consumption (U.S. Department of Education, 2017). Sharp and Hunt (2011) also suggested by powering digital learning opportunities in appropriate ways, students gained aspects of computer literacy that could affect their school community. Based on information from the U.S. Department of Education (2017), however, even with the many initiatives and the increase of equity and accessibility, schools across the nation were not using technology effectively to improve the impacts of digital citizenship and student learning.

The Wall Street Journal Online (2015) stated there were currently, millions of students using a variety of technology to research, complete assignments, communicate with teachers, and collaborate assignments. Blair (2012) implied technology's evolution had made leisurely playing games and sharing turns interacting on a whiteboard no longer adequate to engage students in learning. She also proposed learners demanded efficient access to new information, forcing the role of technology to be re-envisioned in the classroom. Students must master more than core content for a successful transition into secondary and postsecondary establishments and the professional workplace.

**Technology usage in the classroom.** In 1900, United States high school enrollment was only at 10%; by 1992 enrollment was reported at 95%, according to the U.S. Department of Education. Similarly, the number of college students grew from one million in the 1930s to 21.6 million in 2012 (Purdue University, 2017). These numbers have appropriately reflected the need for changing instructional methods and advancements in technologies to meet the new ways of student learning and communication.
A special report by Azzam (2006) concluded U.S. children were using information technology about achievements, well-being, and opportunity, as well as civic participation. These findings were based on reviews of existing literature, analyses of survey data, and the 2003 U.S. Census Bureau's report. According to the report, U.S. children were taking advantages of technology and showing gains from these opportunities. The report identified 57% of students completed class assignments more than half of the time, and 53% of teachers were incorporating technology in the classroom. Additionally, virtually all schools nationwide were connected to the Internet at that time, and 88% of public schools maintained a website. Based on data, 40% of children ages 7-17 were using some word processing or publishing at home. Another 40% were staying connected with their local communities via the Internet. Findings from the report also suggested children from low-income backgrounds showed higher percentages of Internet usage to enhance opportunities. An additional indicator reported information technology had the potential to aid children with vision and hearing impairments. Villapaz (2014) outlined usage of the Internet had grown even more, as indicated by the capabilities provided by Google. According to the study, G-Suite had reached an estimated 30 million students, faculty, and staff with its free services; this number would be upwards of 55 million if all informal Google users were being counted. The free applications were often the first experience with which most students interacted, allowing them to realize the almost limitless capabilities available through Google. Information from Google furthered evidence of growth stating G-Suite for Education was upwards of 60 million (G Suite for Education, n.d.). Per updated Internet statistics, there were 3,739,698,500 documented Internet users worldwide (Internet World Stats, 2017b).
Web 2.0 in the classroom. Zainuddin and Halili (2016) concluded the impacts of technology have influenced the shifts in pedagogy of instructional technology and have essentially replaced the use of the blackboard. The researchers found traditional classroom lectures, labs, homework, assessments, and other activities had begun to evolve into Web 2.0 technology, allowing students access and interaction from anywhere. Additionally, students were no longer limited to consuming information; they were also publishing content and making a network of connections at a global scale (An, Aworuwa, Ballard, & Williams, 2008). This was due to Web 2.0's ability to provide diverse applications such as media production, graphic tools, and online office tools, all free or at a minimal cost (Pritchett, Pritchett, & Wohleb, 2013). An, Aworuwa, Ballard, & Williams (2008) also determined laptops, computers, and smartphones were all technology of the 21st Century influencing the instantaneous access to information. In education, Web 2.0 technology has allowed collaboration, coaching, and mentoring through social platforms to build relationships. This was the result of the integration of technologies such as blogging, social networking, and tagging.

Zainuddin & Halili (2016) believed when incorporating different types of digital devices and distance learning, learners must understand how to work both, independently and collaboratively before ever entering the classroom. Luckily, many students were considered digital natives with increased Web 2.0 technology already present in their daily lives (An, Aworuwa, Ballard, & Williams, 2008). Additionally, Abdelmalak (2015) found for this type of environment to be successful students also needed to be provided with a mix of technology, social interactions, and subject-specific content.

An, Aworuwa, Ballard, & Williams (2008) examined the benefits of using Web 2.0 in the classroom, potential barriers, and best practices. This was a qualitative study that was collected
from a web-based survey. Most of the participants agreed that Web 2.0 technologies allowed a greater sense of community in the class and increased interaction and communication among students and the instructor. Half of the participants felt that Web 2.0 gave them the opportunity to be creators of content. One-third reported that Web 2.0 tools were easy to use and provided flexibility. Only a small number of participants reported they were uncomfortable with the openness, technical issues, and time it took to learn Web 2.0 technologies. An action research study by Abdelmalak (2015) was used to evaluate Web 2.0 technology for developing learning communities. Web 2.0 technologies that were included in the study were Twitter, Google Docs, Skype, and blogs and wikis. The study was based on an online master’s course, and these tools were used throughout the course in hopes of forming a sense of community among the class members. The data that were collected indicated students felt that all tools, except Skype, provided a learning community. Teachers were interested in promoting online learning communities needed to use a variety of Web 2.0 resources so students could be made aware of various technologies supporting digital communication. Additionally, a study conducted by Wicks et al. (2015) was used to evaluate overall collaboration of online learning using Web 2.0 technology. This study found online learning allowed students to have more focus on tasks and skills and could lead to better learning. The study had one group with low collaboration efforts and a second group with high collaboration; this was to determine if more student collaboration led to more self-regulation, planning, and reflection of assignments. This was accomplished by using Google tools. The group that had low collaboration efforts made minimal use of discussion forums. The differences between these two groups were determined by measuring student grades, peer evaluations, pre-tests and post-tests, and surveys. While there were various determinations with the results, it was concluded that student knowledge of the course was
increased with and without high collaboration. The study also proved collaborative learning had benefits, regardless of whether the efforts were web-based or not. Ultimately, all studies showed evidence of a noticeable trend in positivity about the assignments when online collaborative efforts via Web 2.0 technology were available to students for learning purposes (Abdelmalak, 2015; An, Aworuwa, Ballard, & Williams, 2008; Wicks et al., 2015).

Additionally, Blair (2012) determined Web 2.0 technology allowed student work to be viewed by more than just the teacher. Technology resources have created the opportunity for not only authentic learning but also authentic audiences. Authentic audiences meant student work was worth accomplishing and being seen by multiple audiences, giving students the confidence to apply their abilities and strengths to learning experiences. An, Aworuwa, Ballard, and Williams (2008) reported, however, Web 2.0 as an independent strategy did not guarantee more effective teaching or authentic learning. Instead, innovative teaching strategies should be adapted to incorporate clear goals and meaningful instruction.

**G-Suite for Education.** Google Apps for Education was launched in the mid-2000s, and its vision was to help teachers and students innovatively learn in the classroom. According to Google for Education’s Director of Product Management, the vision evolved to transcend the modern definition of an app. In 2016, Google Apps for Education, or GAFE, was rebranded to G-Suite for Education. Under this name, it was reported the same set of apps were available, but G-Suite better reflected the collaborative nature of their tools (Rochelle, 2016). G-Suite for Education (n.d.) documented the free core services available were Gmail, Calendar, Classroom, Contacts, Drive, Docs, Groups, Sheets, Slides, Hangouts, and Vault. New design features made it easier for teachers and students to work together (Rochelle, 2016).
**Informal case studies: G-Suite.** Case studies from schools within the United States proved Google’s vision for innovation and collaboration. In 2014, Bloomington Public Schools reported that Google Applications had made such an impact on their school system. By using Chromebooks, the school system felt time was not being wasted on training teachers and students how to use the resource because it was essentially using the Internet. Bloomington Public Schools prided itself in being an innovative leader in technology by always advocating for early adoption. With their choice to move to 1:1, the school system noted an increase in the use of technology for co-collaborating with other students; this collaboration led to more effective group work for their students (Google for Education, 2014). In 2015, Arlington Independent School District expressed its concern for students to have more access to research-based technology. The district already used several student devices, but the devices were not being utilized to their fullest capacities. To supplement the existing equipment, Chromebooks were purchased to maximize usability of devices within the schools. With this increase in technology and a shift in technology standards, Google became the expectation for all students and faculty across the district (Google for Education, 2015). In 2016, Chicago Public Schools facilitated the use of a single email system for the students and the faculty. The use of student and faculty Gmail accounts allowed the system to integrate Google Classrooms into daily learning and eliminated the concern of digital storage (Google for Education, 2016).

G-Suite for Education (n.d.) reported 60 million students and teachers were using G-Suite for Education due to their successes. G-Suite for Education was dedicated to protecting student data and privacy, compliance regulations, and security. Google signed the Student Privacy Pledge. Updated information stated that Google did not assume ownership of student work and
that the core services offered complied with, both the Family Educational Rights and Privacy Act and the Children’s Online Privacy Protection Act.

While informal case studies were considered to illustrate the potential provided by G-Suite for Education, further research investigated specific benefits of using G-Suite as a classroom learning tool.

*Research-based studies: G-Suite.* A study conducted by Railean (2012) explored possibilities provided by Google. In this study, descriptions were given for university courses, as well as kindergarten through twelfth-grade educational settings. There was specific focus given to science, math, and technology proficiencies in conjunction with collaborative learning among peers. Reportedly, there was a correlation between the use of Google Apps and the development of meta-systems thinking, meaning that students could turn actual subject-related data into knowledge and skills sets. By appropriately utilizing these skills, students were also developing socially by working together with the collaborative tools and taking personal responsibility for learning. The researcher concluded by Google offering everything from student-based email to file sharing, students were forming the ability to work from anywhere at any given time. While these possibilities provided great hope that Google could be a turning point for student performance, other factors could still ultimately determine student development with Google as a learning tool. The factors included were student cognitive style, experiences, the culture of the learning environment, and learning variables such as complexity and difficulty.

A study by Godzicki, Godzicki, Krofel, and Michaels (2013) implemented multiple interactive and digital resources, including G-Suite that were incorporated within the use of different platforms. Results indicating with the use of digital resources, 67% of students voted teachers related material to student interests, and 75% agreed they were more likely to engage in
classroom activities. Overall motivation increased by 9% over four months by simply incorporating Google into core class content. In study by Brown and Hocutt (2015), survey results were used to gage student perceptions of GAFE, now termed G-Suite, as first year college students. The study’s questions evaluated the ease of interaction with the Google platform, how students ranked the usability of the platform, and how students felt about free access to Google’s technology. The research indicated students felt Google was easy to use and that the ability to collaborate was appreciated, giving researchers confidence that GAFE was considered a useful tool in the college classroom. These results showed not all students were initially aware of these features provided by Google. Once informed, however, students reported Google provided quality materials to use for educational purposes. Kobayashi (2015) organized a study investigating Google Hangouts, specifically. The researcher indicated positive results toward using mobile learning as a tool. The focus of the study was to investigate the usefulness of Google Hangouts and to determine the ease of use as an instructional and learning tool by using student surveys and qualitative data. The data determined while Google Hangouts could be a useful instructional tool, it was not easy to use. The study still suggested, however, Google Hangouts could be integrated into online classrooms.

Zhou, Simpson, and Domizi (2012) specifically evaluated effectiveness of Google Docs when used for an out of class collaborative writing activity. Over a six-week period, 35 students were required to complete two assignments, one using Google Docs to collaborate and one face to face collaboration. The use of Google Docs did not affect the assignment grades. The following data proved Google Docs was an effective method of collaboration: 93% of participants considered Google Docs a useful tool when collaborating with peers and half of the participants reported they would use Google Docs for future assignments. Another study by
Suwantarathip and Wichadee (2014) involving the effects of a collaborative writing activity using Google Docs on student writing abilities, was used to determine additional opportunities provided under the G-Suite umbrella. The study emphasized determining if file sharing via Google was more effective than face to face collaboration. Two groups were formed for this study; one group used Google Docs and one used more traditional methods to completing group work. After data were analyzed, the group using Google scored higher on the assignments. In addition to a better score, the same group of students had a more positive attitude toward the collaborative writing activity. The collection of data also concluded Google Docs was an easy tool to learn to use.

Google (Coolbook@google.com, 2016) conducted a study to publish a magazine. It’s Lit: A Guide to What Teens Think is Cool, further indicated the impact of the company's presence in the digital age, as it reported digital natives were dependent on Google to provide quick search returns, reliably. Because of digital native dependence, Google partnered with Gale to ensure trustworthy digital content that was relevant and authoritative. The database could now be accessed from Google Classroom and Google Drive; this ability eliminated the need for teachers to print or email scholarly materials (Foote, 2016). An additional article further supported Google’s efforts by stating Google was all about providing the tools to find information. Google integrated Advanced Search, Books, and Scholar to offer users high-quality search returns with minimal response time (Hopkins, 2017). As of 2015, it was reported Google handled more than 40,000 search queries per second and over 3.5 billion searches daily to provide information to teachers and students (Internet World Stats, 2017a).

**One to world in the classroom.** While the implementation of the computer lab has been proven effective in the past, researchers have argued for technology to make a meaningful
impact on students, students needed access more than once or twice a week. Therefore, the idea that every student needed a portable computer with updated software and Internet access for completing academic tasks evolved (Penuel, 2006). Initiatives were putting classroom as 1:1 began in the 1990s and had continued to grow rapidly (Doran & Herold, 2016). The idea of a 1:1 initiative simply placed a device in every student's hand and instilled an illusion that student learning would increase. Without fundamental change in the culture of the classroom, however, significant improvements would go unseen (November, 2013).

The one to world initiative, on the other hand, set a clear focus on curriculum goals that would empower and engage students in a learning community (November, 2013). According to Harper and Milman (2015), the overall outcome and influence of 1:1 technology were based on classroom environment, including deeper learning experiences, instructional strategies, and student and teacher interactions. Innovative teachers have redesigned lessons by shifting from teacher-centered to learning-centered approaches and utilizing the advantages of digital tools to re-envision learning environments for students (Montrieux, Vanderline, Schellens, & De Marez, 2015).

McCLean (2016) explained there were two provisions for shifting schools into 1:1 learning. The first implementation was school-provided devices that were to remain on campus. Issues reported for this method included costs and infrastructure for maintaining devices. The second implementation for 1:1 in the classroom was for students to be responsible for obtaining their own devices. This was termed as bring your device, or BYOD. Under this model, schools would not pay for devices. Research by Sung, Chang, and Liu (2016) noted, however, 1:1 instruction was no longer limited to laptops and tablets; mobile phones have also gained interest as a potential learning tool due to their computing abilities, portability, and wireless access.
With mobile phones being included in BYOD, users had the flexibility to choose the best devices to meet their need to be more productive (Olalere, Abdullah, Mahmod, & Abdullah, 2015). Sung, Chang, and Liu (2016) also noted mobile technology was typically utilized for lower-level cognitive skills.

According to Penuel (2006), studies have shown evidence supporting teacher attitudes and beliefs had to influence on 1:1 implementation programs due to a shift from supplemental use when in the computer lab to more consistent use with 1:1 devices. Montrieux, Vanderlinde, Schellens, and De Marez (2015) found teachers were still the facilitators of learning and the adaption of materials, new methods of teaching, and changing beliefs powered such innovations in the classroom. Additionally, research from Harper and Milman (2015) showed 1:1 integration could change relationships between teachers and students through classroom learning. Classes that had access to 1:1 devices and that used them regularly had different classroom organization and students used communication more often and more effectively.

Montrieux, Vanderlinde, Schellens, and De Marez (2015) indicated pre-training for the devices used as teaching and learning tools was critical. Penuel (2006) also concluded researchers believed frequent in-class technology provided equitable access, which could improve learning opportunities and student outcomes. Research from Harper and Milman (2015) suggested 1:1 could impact student achievement regardless of background or ability. Additionally, the researchers reported 1:1 devices were typically used for specific learning activities to enrich the learning experience. These changes reportedly empowered students and gave them a sense of accomplishment. The research also indicated greater ownership, learning, engagement, and motivation were evident in 1:1 settings.
Doran and Herold (2016) emphasized laptop efforts were having positive impacts on test scores for language arts, writing, math, and science based on long-term data. It was noted, however, standardized tests were not a tool to determining benefits of 1:1. Instead, the focus should be on the movement from instructive to constructed teaching so students could become 21st Century learners. Findings determined the Technological Pedagogical Content knowledge should enhance learners rather than solely present information in a digital format (Montrieux, Vanderlinde, Schellens, & De Marez, 2015). Vaughan (2014) revealed one to world activities should consider action and collaboration, student interactions with teachers, levels of academic difficulty, educational experiences, and a supportive environment to enhance learning. Montrieux, Vanderlinde, Schellens, and De Marez (2015) also indicated 1:1 learning should create new contexts for authentic learning, as well as integrate technology in a meaningful direction that broadens knowledge and communication skills. Additionally, the U.S. Department of Education (2017) stated these types of technology should also integrate learning beyond the classroom and incorporate limitless learning opportunities from local libraries to museums around the world for students to connect globally and increase global awareness. Virtual learning systems, games, and simulations were also recommended, giving students options for social role-playing in leadership and teamwork.

Penuel's (2006) research suggested there were several factors to consider when moving toward one device per student in the classroom. Most importantly, the U.S. Department of Education (2017) indicated the initiative should have a primary focus for implementation, such as closing gaps in achievement, increasing equity and accessibility, reducing the digital divide, or transforming the quality of instruction by way of project-based learning and the use of higher order thinking. The importance of the physical layout of a classroom was also established,
determining spaces must be organized in a fashion that best facilitates collaboration among
digital tools, while still supporting whole class, flipped and blended, project-based, and
also concluded types of implementations should be determined before purchase and there should
be an adaptation stage in which traditional teaching strategies incorporate independent and small
group use of technology tools. Reportedly, if implemented properly, as shifts in classroom
environment took place, evidence of student motivation and student achievement would emerge,
and project-based learning could then take place.

**Flipped learning.** Arnold-Garza (2015) defined the concept of flipped learning as more
than allowing students access to work on self-paced lessons via technology learning. Instead,
this type of teaching truly flipped the method of learning and applied a student-centered
approach to learning (Arnold-Garza, 2015; Zainuddin & Halili, 2016). Under this model,
students received lecture-based materials at home rather than traditional homework, meaning
class time would be reserved for practical applications of learning. Additionally, the key factor
in flipped learning was that students gained more active responsibility for learning, which could
also lead to catering to more student diversity. As noted, many considered this a better use of
time, and allowed for more one-on-one instruction with the teacher as needed (Arnold-Garza,
2015). According to Zainuddin & Halali (2016), the instructor served as a facilitator to learning
by motivation, guidance, and feedback. In conjunction to facilitating learning, creating podcasts,
online learning modules, and web tutorials also proved beneficial through flipped learning, as
students could spend more time focusing on higher level cognitive experiences (Arnold-Garza,
2015; Zainuddin & Halili, 2016). Also, as lower level assignments of the cognitive domain were
completed outside of the class, technology time spent in the classroom should never be meant to
provide unstructured or inactive learning experiences (US Department of Education, 2017; Zainuddin & Halili, 2016). Ultimately, all components of flipped learning supported job preparation and applied concepts to real-life situations based on assigned responsibilities through this type of learning. (Arnold-Garza, 2015).

**Blended learning.** Sparks (2015) reported blended instruction was no fundamentally different from traditional classroom learning, as effective practices were still essential and online learning alone did not yield better results. It was simply a combination of web-based and face-to-face instruction, giving students some control over the time, place, path, and pace of learning while maximizing technology, teacher efficacy for face-to-face facilitators, and providing equity in access to a quality curriculum (Sparks, 2015; Thompson, 2015). Blended learning should incorporate the best features of online learning along with the best attributes of in-class learning, to provide independent learning opportunities (Vaughan, 2014). Davis (2015) suggested blended learning opportunities were incorporated into classrooms in different ways and under different sets of conditions. Thompson (2015) reported by providing the capacity and support of faculty collaboration, allowing freedom to fail and learn, engaging student experts to serve as peer supports and encouraging advocacy of students and teachers to take charge of learning would allow even reluctant teachers to implement blended instruction. To properly implement blended learning, extensive planning and training should come before relying on technology as an effective teaching strategy. Once implemented properly, blended learning should offer more personalized education to meet the needs of every student (Davis, 2015). Coiro (2016) impressed, however, that balance is imperative with this type of instruction because if implemented poorly, 1:1 type initiatives could limit student human interaction due to headphones, cubicles, and a separation from peers. Also, the effectiveness of blended learning
was dependent on how it is implemented and the degree to which it was providing students with what they needed (Sparks, 2015). Thompson (2015) determined blended learning was meant as a combination of digital tools to be balanced between the digital world and interactive classroom learning; it was not meant to be all digital, all the time.

**Professional development for teachers.** The National Staff Development Council (NSDC) defined professional development as an intensive and comprehensive approach that would improve teacher and principal effectiveness in raising student achievements and improving instructional methods (2007). These trainings were intended to serve as on-going efforts integrated into the classroom and incorporated experiences consistent with teachers’ goals and evidence-based learning strategies that could transfer new knowledge and skills in a learning environment. (National Staff Development Council, 2007; Quattlebaum, 2012). Kodama et al. (2016) showed, however, this was not always the case. Instead, professional trainings were often an introduction to new programs without any opportunity for following-up or coaching. The NSDC (2007) stated opportunities should align with state achievement standards and engage educators with continuous cycles of improvement. Ultimately, professional developments were geared toward influencing teachers in how and what to teach to improve student performance (Penuel, 2006).

The NSDC (2007) established the following standards for effective training and developments: content knowledge through quality teaching, research-basis, collaboration, diverse learning needs, student learning environments, family involvement, evaluation, data-driven design, and teacher learning. Additionally, Guskey (2002) indicated five critical levels of evaluating the effectiveness of professional learning opportunities: participants’ reactions,
participants’ learning, support and change of the organization, participants’ use of new knowledge and skills, and student learning outcomes.

Further research based upon Guskey and Yoon’s (2009) findings described effective professional development as follows:

- No improvement effort has ever succeeded in the absence of thoughtfully planned and well-implemented professional development.
- Educators at all levels need just-in-time, job-embedded assistance as they struggle to adapt new curricula and new instructional practices into their unique classroom contexts.
- Effective professional development requires considerable time, and that time must be well-organized, carefully structured, purposefully directed, and focused on content or pedagogy or both.
- Those responsible for planning and implementing professional development must learn how to assess and evaluate the effectiveness of what they do critically. (Guskey & Yoon, 2009, p. 497-500).

Professional learning for teachers has developed into a type of continuing education for teachers (Quattlebaum, 2012). By evaluating the information provided during trainings, the overall success of professional developments could increase (Guskey, 2002). According to Killion (2016), better teacher training led to better instruction, which yielded better student learning. Similarly, Green and Allen (2015), found high-quality professional development designed as professional learning communities could provide higher levels of student achievement.
Professional development for the 21st Century classroom. Dahlstrom (2015) indicated roughly half of teachers felt lack of technology in their classrooms was attributed to the lack of professional training. Pritchett, Pritchett, and Wohleb (2013) also suggested teachers would be more inclined to use technology if properly trained. Additionally, many teachers thought they could be more effective in the classroom if they were better educated on how to integrate technology into their curriculum, due to a lack the knowledge and skills for implementation (Dahlstrom, 2015; Pritchett, Pritchett, & Wohleb, 2013). It was also reported teachers receiving nine hours, or more, were more likely prepared to properly use computers and the Internet for instructional purposes (Penuel, 2006). Killion (2016) revealed it could take up to 10,000 hours of practice to achieve expertise. Regardless of time, effective collaboration and professional learning required a commitment to cultural change. Larson, Miller, and Ribble (2009) proposed it was up to independent buildings, along with district personnel, to progress into the digital age. Shared visions, a new culture of learning, systematic improvements, and professional practices all determined action plans for digital learning.

For these professional learning opportunities to be relevant to the transition of more technology, professional trainings would require refocusing instructional techniques, practicing the use of new tools, and developing skill sets for application in the classroom (U.S. Department of Education, 2017). Innovation also took time to create new procedures, and new tools alone would not implement change (Killion, 2016; Malu, 2015). Professional growth required authentic professional development opportunities that aligned with the vision of the school (Larson, Miller, & Ribble, 2009). Additionally, to optimize the uses of technology effective training needed to align with teacher development goals for their classrooms and not be limited to standardized staff development (Dahlstrom, 2015; Quattlebaum, 2012).
The Partnership for 21st Century Skills (2009) also recognized the need for aligned and comprehensive changes in standards, assessment, curriculum and instruction, and learning environments were integral to effective technology-based professional development. Positive perceptions of knowledge and topic, as well as increased focus on classroom instructional practices, were reportedly the two biggest concerns for meaningful and purposeful professional learning activities (Glover et al., 2016). Therefore, meaningful technology training would ensure technology in the classroom was not another ineffective initiative, but was critical to curriculum (November, 2013). It was also noted effective change took time; research showed the application of new changes would occur around 25 times before the desired conditions of transfer were achieved in the classroom. The results of these changes would help teachers improve their teaching and help them structure new questions for student learning (Malu, 2015). Most importantly, professional learning opportunities were essential throughout the implementation of technology. These learning opportunities needed to be consistent and ongoing to provide skills and confidence to teach the new literacy of technology in the classroom (Larson, Miller, & Ribble, 2009).

Meaningful professional growth relating to technology increased what From (2017) described as pedagogical digital competence. This new pedagogy related the knowledge, skills, attitudes, and approaches corresponding to the learning of digital technologies. As teachers become more experienced, the more their pedagogical digital competence would develop. Prensky (2001a) suggested to meet the needs of digital natives, the technology development of teachers was critical, as they must learn new ways to implement the future of technology into the legacy of the past.
Digital Citizenship in the 21st Century Classroom

The idea of digital citizenship was almost unheard of in the early-2000s (O’Brien, 2010). Potential of technology, however, began to reportedly offer the possibility of learning beyond the classroom (U.S. Department of Education, 2017). For this type of instruction to be meaningful, a new taxonomy of media-based skills should be considered for students to become empowered and engaged in their learning. By learners basing their learning on consumption, they could then build on curation, creation, critiquing, and publishing to develop critical thinking skills in a digital world (Weisgrau, 2015). This shift in education called for students to understand what it meant to produce content on such a global level and how their work would be perceived as they entered digital learning (Marcinek, 2015).

Hollandsworth, Dowdy, and Donovan (2011) questioned which stakeholders were ultimately responsible for guiding students toward productive and safe practices in a technological society. In 2005, the National Center for Education Statistics (NCES) noted 66.1% of K-12 students used the Internet in the classroom. Reported in and out of school usage for 10-14-year-olds was at 69.5% and 15 and older at 79.5%. The U.S. Children's Internet Protection Act and the Protecting Children in the 21st Century Act emphasized it was individual school district’s responsibility to educate students about matters of Internet safety and usage (Swan & Park, 2015). Hollandsworth, Dowdy, and Donovan (2011), however, urged it was the entire K-12 professional community’s responsibility to advocate the use of technology in the classroom. Parents also needed to ensure safety for students, but it was ultimately the students’ responsibility to use technology ethically.

Rather than stakeholders continuing to misuse technology, Ribble and Miller (2013) suggested the nine elements of digital citizenship be utilized in schools to explore ways in which
everyone could live and interact as digital citizens in and out of the classroom. Alqahtani, Alqahtani, and Alqurashi (2017) stated optimal use of technology required an understanding of positive digital citizenship, involving comprehension, knowledge, and awareness. These elements would educate students on proper use, but also would build an awareness to respect other users and to protect themselves. Students were prepared to succeed in a digital and interconnected world when this type of learning occurred, making them effective citizens capable of critical thinking through means of information, communication, and technology literacies (Partnership for 21st Century Learning, 2016).

**Performance indicators for digital citizenship.** The International Society for Technology in Education (ISTE) defined the roles of administrators, teachers, and students as digital citizens to ensure learning was extended beyond the traditional classroom (2017). In conjunction, framework for the Partnership for 21st Century Learning (n.d.) prescribed student skills needed for success.

Effective administrators were expected to model and facilitate the knowledge and understanding of social, ethical, and legal issues and responsibilities regarding a growing digital era. Educational administrative indicators were established as follows (ISTE, 2009):

- Ensure equitable access to appropriate digital tools and resources to meet the needs of all learners.
- Promote, model, and establish policies for safe, legal, and ethical use of digital information and technology.
- Promote and model responsible social interactions related to the use of technology and information.
• Model and facilitate the development of a shared cultural understanding and involvement of global issues using contemporary communication and collaboration tools. (ISTE, 2009, p. 5).

Furthermore, teachers were to assume the responsibility of inspiring students to participate in the digital world effectively. Teacher indicators were detailed as follows (ISTE, 2017):

• Create experiences for learners to make positive, socially responsible contributions and exhibit empathetic behavior online that build relationships and community.

• Establish a learning culture that promotes curiosity and critical examination of online resources and fosters digital literacy and media fluency.

• Mentor students in safe, legal and ethical practices with digital tools and the protection of intellectual rights and property.

• Model and promote management of personal data and digital identity and protect student data privacy. (ISTE, 2017, p. 4).

Additionally, the 21st Century Student Outcomes were described as follows (Partnership for 21st Century Learning, n.d.):

• Content Knowledge and 21st Century Themes: Mastery of fundamental subjects and 21st Century themes is essential for students in the 21st Century.

• Learning and Innovation Skills: Learning and innovation skills increasingly are being recognized as the skills that separate students who are prepared for increasingly complex life and work environments in the 21st Century and those
who are not. A focus on creativity, critical thinking, communication and collaboration is essential to prepare students for the future.

- **Information, Media and Technology Skills:** Today we live in a technology and media-suffused environment with:
  - access to an abundance of information,
  - rapid changes in technology tools, and
  - the ability to collaborate and make individual contributions on an unprecedented scale.

To be effective in the 21st Century, citizens and workers must be able to create, evaluate, and effectively utilize information, media, and technology.

- **Life and Career Skills:** Today's students need to develop thinking skills, content knowledge, and social and emotional competencies to navigate complex life and work environments. (Partnership for 21st Century, n.d., p. 5-8).

By administrators and educators collaborating as model digital citizens, the following indicators would also instill the meaning and purpose of digital citizenship in students (ISTE, 2016):

- **Students cultivate and manage their digital identity and reputation and are aware of the permanence of their actions in the digital world.**
- **Students engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.**
- **Students demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.**
• Students manage their data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online. (ISTE, 2016, p. 3).

Based on the most updated U.S. Department of Education (2017) report, all technology initiatives should be vertically aligned with the ISTE and the Partnership of 21st Century Skills, both of which held a high priority for digital citizenship. Collectively, vertically aligning the knowledge and skills of meaningful technology allowed students to understand that being a digital citizen meant that online safety and operational skills were equally important (Waters, 2012).

The gravity of digital citizenship. The concept of digital citizenship was to empower, protect, and educate learners of the 21st Century (Isman & Canan Gungoren, 2014). Digital citizenship, as described by Alqahtani, Alqahtani, and Alqurashi (2017), was bound by the rules, regulations, standards, norms, ideas, and principles followed to yield meaningful and positive results from the use of technology. Furthermore, digital citizenship meant the ability to use technology competently to interpret, understand, and think critically about digital content and its credibility (Isman & Canan Gungoren, 2014). The concept of positive digital citizenship was integral in the digital era due to the opportunities to engage in media and communicate digitally with regularity and effectiveness (Alqahtani, Alqahtani, & Alqurashi, 2014; Isman & Canan Gungoren, 2014). Dotterer, Hedges, and Parker (2016) suggested the elements of digital citizenship could be applied by anchoring digital literacy in a moral construct, thus helping students consciously step into the digital world and educating parents to raise responsible digital natives.
O'Brien (2010) determined digital citizenship was becoming part of the culture in and out of school. It was the responsibility of educators to help students determine right from wrong in the 21st Century digital world. Digital citizenship was an essential tool because of the misuse and abuse of technology (Ribble & Bailey, 2005). Schools seemed to be combatting these misuses with acceptable use policies that outlined what was allowed on school devices or school Internet connections. Said policies protected the school and the students from possible legal issues. Schools also installed filtering software to curb Internet abuse (Siegle, 2010). Bell (2002) noted acceptable use policies and filters, however, were not educating students to utilize technology properly. Acceptable use policies were not the best solution for establishing appropriate uses of the computer and the Internet. She also suggested stakeholders may not be fully aware of the policy. Instead, students should be informed of their rights and responsibilities and be held to the consequences. Education regarding the appropriate and inappropriate uses of technology was critical (O'Brein, 2010).

An investigation by Siegle (2010) and Dotterer, Hedges, and Parker (2016) advised that by guiding students to make responsible choices regarding issues such as cyberbullying, privacy, and appropriate usage they would become more empowered. Providing an intensive curriculum for acceptable usage also helped teachers manage students' online presence to facilitate digital classroom learning. Becoming a digital citizen was more than dealing with potential hazards; it was about developing safe spaces and online communities, as well as being Internet savvy (O'Brein, 2010). According to Siegle (2010), educators played an important role in developing students' understanding of consequences and poor decisions in the digital world.

**Linking digital citizenship to previous research.** A firm understanding of technology's history, as well as its gradual integration and evolution into the classroom about digital
citizenship, were established first within the first portion of this review of the literature. Further review of the literature was conducted to examine previously designed methods of research relating to digital citizenship and 21st Century learning to guide instrumentation for this qualitative research design to answer the following question:

What are the perceptions of enrichment students and digital citizenship in the middle school classroom after engaging in the digital driver’s license (DDL) program?

Given that Ribble's (2017) work based on digital citizenship catalyzed framework, as well the point of interest for the study, his original research was used for investigation. The motivation behind his investigation was due to the misuse and abuse of technology by both students and adults. Therefore, an extensive study aimed at research, develop, test, and validate the need to compose a handbook specifically about digital citizenship for technology leaders. By thoughtful analysis of literature, the definition of digital citizenship and its nine elements emerged (Ribble, 2006).

Ribble’s (2006) research and development design followed seven steps in validating the need for a technology leader’s handbook, which included a needs assessment, proof of concept, product development, preliminary field testing, product revisions, main field testing, and final revisions and circulation. Ribble (2006) used informal interviews and a proof of concept questionnaire among experts to begin construction of the preliminary product. Such research and development determined how digital citizenship could be effectively integrated into education. Through development of The Technology Leader’s Guide to Implementing Digital Citizenship in Schools, Ribble (2006) concluded the following: literature was lacking for implementation of digital citizenship in schools; educators would benefit from quality resources; digital citizenship
had important implications for education, and a resource guide was helpful with the integration of digital citizenship in schools.

Now that Ribble (2006) had created a credible framework for digital citizenship, continuing advancements in research could now take place. Boyle (2010) conducted quasi-experimental research adds to the limited research guided by digital citizenship and to measure the influence a digital citizenship curriculum had on the use and misuse of technology. The study was designed by convenience sampling and consisted of two control groups consisting of secondary students. One group was exposed to the curriculum, while the other was not. A digital driver's license activity was the instrument used as pre- and post- methods of data collection in hopes of identifying the cause and effect relationship between exposure to a curriculum and proper use of technology through normative behaviors of the participants. Those who were exposed were delivered a two-week curriculum. In addition to the pre- and post-test, students were assessed by daily work and oral presentation rubrics. Based on the data collected the following results detailed individual elements of digital citizenship. Digital etiquette, digital communication, digital literacy, digital commerce, digital law, digital rights and responsibilities, and digital health and wellness all yielded significantly better results from students participating in the curriculum. Findings showed that there was no difference between groups regarding digital access or digital security. On the study's average, the group not receiving treatment could only identify with 50 percent of elements. Boyle's (2010) study indicated a need for students to engage in a digital citizenship curriculum actively.

Chambers (2011) designed a quantitative study evaluate principals’ perceptions of their teachers’ instructional implementations of 21st Century skills. This study specifically looked at secondary principals in and urban setting and produced stratified results. There was a total of 40
principals invited to complete the survey, and 26 chose to participate. Data were collected by a
digital survey based on 21st Century skills and Marzano’s Right Work Model. Survey responses
were limited to very important, somewhat important, and not important. All participants (100%)
reported critical thinking was very important. The importance of creative skills was viewed as
very important by 80% of participants. Results found 76.9% of participants chose very important
in response to the importance of global awareness. Only 68% of participants felt the importance
of collaborative work skills was very important. Additionally, only 57.7% of participants
considered the importance of innovation skills as very important. Chamber’s (2011) data
reported principals needed to develop school culture to enhance critical thinking skills for 21st
Century students.

Lyons (2012) investigated differences among grade levels and genders concerning digital
citizenship, personal safety, cyberbullying, and parental involvement using an ex-post facto
study. Quantitative data were collected from 1851 5th, 7th, 9th, and 11th graders from state and
district surveys. The findings indicated the gender of students had a significant effect on
personal safety and abuse of digital citizenship; males were more at risk. Findings stated grade
level also had significant effects on digital citizenship abuse and personal safety risks; both
increased with grade level, while parental involvement decreased with grade level. Parental
involvement was not significantly different between males and females. When looking
specifically at cyberbullying, percentages increased from 5th to 11th grade from 7.46% to 19.03%.
According to Lyons (2012), collected data from the study and supplemental research indicated
digital risks increase with age.

Oyedemi (2012) explored digital citizenship in South Africa by collecting data from 10
universities to determine Internet penetration by using qualitative design. Oyedemi’s (2012)
definition of digital citizenship came from Mossberger, Tolbert, and McNeal and was described as fulfilled rights to flexible Internet access, skills to use the Internet, and regular use of the Internet to participate in all aspects of society. The collection of data came from student surveys, surveys, government agency interviews, studied policies, and digital skills experiments. Data concluded South Africa suffered from social and generational inequalities, skewing Internet access for the country. The result indicated digital citizenship was compromised for many people, as they were deprived adequate resources to engage.

Quantitative research conducted by Suppo (2013) examined the relationship between educational leaders’ beliefs and implementations of digital citizenship curriculums within their districts and the extent to which digital citizenship was incorporated at various schools. Surveys served as the instrument to collect responses from 125 superintendents, curriculum coordinators, and technology coordinators. The findings suggested there was no strong relationship between leadership beliefs and digital citizenship curriculums. The age, gender, type of administration, and geographical factors did not influence beliefs relating to digital citizenship. Additionally, data showed greater emphasis was placed on digital citizenship in high school curriculums. Participants rated the nine elements of digital citizenship in order of importance from greatest to least: digital rights and responsibilities, digital literacy, digital security, digital law, digital access, digital etiquette, digital communication, digital commerce, and digital health and wellness.

Miani (2015) investigated perceptions of the influence of Catholic Identity in conjunction with digital citizenship. A survey assessed Catholic educators and their familiarity with digital citizenship and the domains of Catholic Identity. The survey collected demographic factors and Likert scale responses from 445 participants. Their responses indicated over 50% believed their
faith affected how they modeled digital citizenship. Additionally, 60% reported their faith was an important factor on how they promoted digital citizenship. When all data were collectively analyzed, there was a moderate, positive correlation between the influence of Catholic Identity and the ability to promote and model digital citizenship.

Ashmeade (2016) used mixed methods to examine the relationship between certified staff perceptions of digital citizenship and the impact upon professional development. The purpose of the study was to offer professional developments opportunities relevant to digital citizenship so teachers could more effectively implement technology in the classroom. Data were compiled from lesson plan observations, survey responses, informal interviews, and focus groups. The pre- and post- surveys were completed by 22 participants. The term digital citizenship grew in understanding from 50% to 95%. Of the 22 participants, 90% incorporated digital citizenship into their lessons. The ability to teach aspects of technology to others and the confidence to implement instructional technology independently grew 15%. To indicate there was a need for professional development to support digital citizenship in the class, the need for support reportedly dropped 30% after the training opportunities. Communication among staff also improved by developing a learning community with the common goal to effectively use and implement technology in the classroom.

Critical discourse analysis by Mattson (2016) extensively reviewed and coded the curriculums from Netsmartz, Digital Citizenship in Schools, and Common Sense Media. The analysis investigated ways the term digital citizenship was conceptualized, assumptions regarding teenage students and their uses of technology, and way in which digital citizenship aligned with the traditional understanding of citizenship. Netsmartz’s curriculum related closely to the traditional understandings of responsible citizenship, gearing students to interact in similar
ways in digital society. It did not, however, explore the positive opportunities of global society and even suggested technology as a harmful tool, rather than a realm of possibility. The curriculum from Ribble, *Digital Citizenship in Schools*, focused on attributes that should also reflect offline behavior. This evidence suggested Ribble's curriculum was not preparing students to become participatory or justice-oriented digital citizens. Additionally, Ribble's curriculum illustrated technology as a potential distraction rather than encouragement of new ways to use technology as learning opportunities. Common Sense Media's curriculum differentiated online and offline ethics. Their curriculum was built on the premise of responsibility and personal responsibility. By educating students of regulations, students were informed some power and privacy might be lost in exchange for the benefits of engaging in technology. Additional findings disclosed the differences between personally responsible citizenship, participatory citizenship, and justice-oriented citizenship. Mattson (2016) also determined the following: a digital citizen was safe, ethical, and respectful when online; lessons about digital citizenship correlated to the definition of traditional citizenship; and digital citizenship recognized various aspects of governmentality.

A qualitative case study designed by Payne (2016) evaluated cyberethics, cybersafety, and cybersecurity as methods of teaching students about digital citizenship. Data were collected from eight volunteer teachers' initial and follow-up teacher interviews, classroom observations, and lesson plans. After coding several themes emerged: participants were unaware of the urgency of a digital citizenship curriculum and the participants discussing digital citizenship in their classrooms, none were teaching as an ongoing process. Recommendations included updating technology standards to more accurately reflect digital citizenship, technology skills
should not be taught in isolation, acceptable use policies should be revamped, and 21st Century skills required teaching students to be moral and ethical in practices of technology.

Snyder (2016) conducted a qualitative research method to study teachers’ perceptions of digital citizenship in middle school students. Teacher and administrator interviews and artifacts were collected as data and came from a sample size of eight participants. Findings from the research determined by integrating digital citizenship, global collaboration, and social media into middle school curriculums, students took more interest and responsibility in becoming global collaborators and responsible technology users.

While the research of digital citizenship has grown to study several interesting topics since the development of Ribble's (2006) handbook, there were still many gaps leading to the potentials of further interest and discovery. The researcher appreciated Mattson's (2016) and Payne's (2016) roles as librarians and their dedication to serving their patrons with knowledge of digital citizenship. This was a strong driving force behind the decision to explore digital citizenship. Furthermore, Ribble (2006), Boyle (2010), and Mattson (2016) discussed the use of a digital driver's license; the concept of a digital driver's license used as a curriculum was of interest to the researcher from the early stages of organizing research. Studies from Chambers (2011), Miani (2015), Ashmeade (2016), and Snyder (2016) all pertained to the perceptions of digital citizenship in some faucet. The idea of studying perceptions did not come until later in the investigation, and these studies confirmed the possibilities of using perceptions.

These studies collectively gave promise for investigating an updated version of the digital driver's license program to gauge perceptions of digital citizenship in middle school learning. There was no evidence from research based on an updated model of the digital driver's license. Additionally, there was no documented research including enrichment students and selected
faculty as participants. By selecting focusing on only three elements of digital citizenship, using students enrolled in the gifted program and selected faculty, and testing a new digital driver's license program, the researcher hoped to gain new insight for improving curriculums and instructional methods in the library and to add to the expansion of digital citizenship research.

**Digital citizenship and DDL program: Investigation for case study.** Ribble (2017b) defined the norms of appropriate and responsible use of technology by the categorization of nine themes. Access, commerce, communication, literacy, etiquette, law, rights and responsibilities, health and wellness, and security were all considered key components to the elements, or themes, of digital citizenship. By incorporating the framework of the nine elements of digital citizenship, the possibility to instill the appropriate use of technology and create good digital citizens could become a reality for all stakeholders (Ribble, 2010).

Findings from a preliminary study by Levin, Arafeh, and Richardson (2002) showed students using the Internet regularly were using it for communication and learning purposes, as well as entertainment. There was, however, a reported disconnect with higher level skills and knowledge students had for such usage. Another study constructed by Kennedy et al. (2006) indicated similar results, finding the most common computer-based activities for students were sending and receiving email (94%), creating documents (88%), playing digital music (84%), searching for general information (83%), searching for school-related content (76%), and communicating via instant messaging (80%).

Based on the lack of user knowledge reported from Levin, Arafeh, & Richardson (2002) and the similarity of reported usage from Kennedy et al. (2006), digital communication, digital etiquette, and digital literacy were the three elements of digital citizenship chosen to investigate for this study.
**Digital communication.** Digital communication occurs when electronic information is exchanged (Ribble, 2017b). Communication available in the 21st Century was said to have been offered in multiple ways--email, text messaging, online shared spaces, and instant messaging. With these tools, people were able to stay in communication and could collaborate with anyone from anywhere and at any time. Given this opportunity, students needed to be taught appropriate means of communication when given a variety of digital communications options. For example, sensitive, personal, or negative information should always be communicated face-to-face. Electronic communication should only be used to relay basic information for efficiency and effectiveness (Ribble & Bailey, 2004). When used properly, social media communication allowed students to stay connected by posting pictures and exchanging new ideas (Dotterer, Hedges, & Parker, 2016).

These types of communication reportedly had the potential to interrupt class time and accommodate cheating during tests (Ribble & Bailey, 2007). McKenzie (1998) reported cheating had been increasing for nearly two decades due to the ability to copy and paste. Other outcomes of poor digital communication skills resulted from the shorthanded digital communication. These shortcuts produced poor grammar, slang, and bad habits in formal writing (Ribble, Bailey, & Ross, 2004). Issues resulted in instant construction of emails, phone calls, video conferencing, instant messaging, blogs, and wikis. Additionally, it was reported too often these types of communications were distributed before ever considering any long-term consequences (Ribble & Bailey, 2007).

To effectively and safely communicate as a digital citizen, students needed to be able to manage information to keep information secure, have a solid understanding between synchronous and asynchronous communications, and distinguish between personal and
professional online presence (Waters, 2012). According to Dotterer, Hedges, and Parker (2016), students should be educated to double check communication and how digital texts and images could be manipulated. Villano (2008) urged the imperativeness of teaching students the proper skills to digitally communicate by protecting their privacy and transferring information without putting themselves at risk. Educators could use critical thinking to enhance communication among social media use and informal engagements. Additionally, social media communication could foster cross-cultural exchanges for students (Dotterer, Hedges, & Parker, 2016).

**Digital etiquette.** Digital etiquette refers to standards and conduct when dealing with electronic procedures (Ribble, 2017b). The terms *netiquette* and *e-politeness* also unveiled that digital etiquette was more than appropriate behavior within a particular group. Instead, digital etiquette required an understanding of all online cultures to become successful communicators (Farshad Nia & Marandi, 2014).

Ribble, Bailey, and Ross (2004) stated if students saw adults misusing technology, students assumed it was the norm, which led to inappropriate use of technology for the students. Additionally, modeling digital behavior made all stakeholders role models for student digital etiquette. It was also indicated students could use technology for negative purposes such as forming digital cliques to exclude students. Unfortunately, Ribble (2017a) posed students were not always aware of potential outcomes once they digitally published comments and information. Sullivan (2006) reported users tended to forget even if a message was deleted, it was typically backed up in some capacity that could be accessed in the future. Additionally, the use of social media could affect students’ futures even when posts were set on private (Dotterer, Hedges, & Parker, 2016).
Given the negative implications, technology leaders should be expected to set the example for appropriate digital etiquette (Ribble & Bailey, 2004). Instead of banning the use of technology, or relying on rules, regulations, and policy, students must be taught the appropriate behaviors of digital etiquette in the 21st Century. Properly using social media and technology were methods that could self-regulate digital etiquette in the classroom. Skills such as choosing appropriate screen names and email addresses could instill the value of digital etiquette. (Dotterer, Hedges, & Parker, 2016). Teaching students about plagiarism, personal conduct, and privacy were other issues to consider when educating students about proper digital etiquette (Waters, 2012).

While the issues involved in digital etiquette were considered broad, the sooner they were addressed, the sooner students could begin to understand their importance and apply them to real-life situations (Villano, 2008). By teaching digital etiquette to students, teachers could also shield them from potentially dangerous digital interactions, as well as protect online integrity and facilitate manners (Dotterer, Hedges, & Parker, 2016).

**Digital literacy.** The concept of digital literacy was the not only the process of teaching and learning about technology but also the uses of technology (Ribble, 2017b). Regarding this definition and others, Jun and Pow (2011) identified indicators of digital literacy. The branches of digital literacy were explained in the order below:

- The ability to collect, evaluate, analyze and synthesize multimedia digital text
- The ability to create multimedia artifacts
- The ability to carry out online communication
- The awareness, attitude and ability to use digital technology (including digital tools, facilities, and resources) appropriately
o Legally
o Ethically
o Safely
o Responsibly (Jun & Pow, 2011, p. 59).

These technologies should not only be provided, but instruction should be given on how they should be used. Allowing students access and equipping them with devices did not make technology effective because the 21st Century demanded immediate information and processing skills by using technology appropriately and having information literacy skills (Dotterer, Hedges, & Parker, 2016; Ribble, 2017a).

Dotterer, Hedges, and Parker (2016) advocated teaching basic digital literacy skills was merely the foundation for effective use of technology. McKenzie (1998) suggested part of this digital literacy was the understanding of different levels of research. Students needed to know the differences among finding different facts, understanding other user's ideas, and synthesizing information to create new ideas. Teachers needed to think about if and when students were accessing the Web, how often, to what extent, and what perceptions their students had of their proficiencies navigating the Web (Sharp, 2014). By guiding students with basic skills, students could grow as proficient digital citizens with the capability to collaborate, create content, and conduct in-depth research skills (Dotterer, Hedges, & Parker, 2016).

Digital natives as classroom learners were reportedly expert multi-taskers, but they still needed vertical alignment to move out of their comfort zones and to break the barriers of self-proclaimed sufficiency (Sharp, 2014). Research designed by Tang and Chaw (2016) showed the effects of a curriculum including these literacies offered higher rates of participation, instant discussion and sharing, active learning, and increased sense of student autonomy. Other benefits
of proficiency in digital literacy were collaboration, interpersonal skills, leadership skills, and ability to adapt accordingly. The researchers indicated students were highly motivated to learn and expressed interest in media literacy curriculum. Additionally, the study found students also strengthened critical thinking skills, creativity, communication, and collaboration.

*The digital driver’s license (DDL) program.* Noonoo (2014) reported digital citizenship regarding student safety and appropriate methods of research was being overlooked too often in the classroom. Research by Alqahtani, Alqahtani, and Alqurashi (2017) showed ethical rules and fundamental principles were also at stake. Teaching students to become good digital citizens required an extensive curriculum that provided students the proper tools and ethical codes to interact in the digital world (Meyer, 2016). Ribble (2009) suggested schools advocate and practice responsible use of technology; keep a positive attitude regarding technology and collaboration; demonstrate lifelong learning, and exhibit leadership for digital citizenship as the first steps of action when breaking the barriers of 21st Century technology.

Additionally, Dotterer, Hedges, and Parker (2016) addressed these barriers and recommended the following for the integration of digital citizenship:

- Design a robust digital citizenship curriculum.
- Counsel students that “what goes online stays online.”
- Craft an empowering acceptable use policy for students.
- Teach students their digital rights.
- Advise parents on new social media and online trends.
- Provide an easy-to-understand guide to online behavior.
- Equip teachers and parents with programs and practices to manage children’s Internet use. (Dotterer, Hedges, & Parker, 2016, p. 21).
Rather than designing a curriculum from scratch, the implementation of the digital driver's license seemed appropriate for K-12 students. The concept of the digital driver's license was inspired by the work of Ribble (2006), and the course was constructed in the same fashion as a driver's education course. It prepared students for the potential hazards of operating in the digital world. After the completion of the curriculum, students could take a paper and pencil test demonstrating new knowledge. In 2011, an online digital driver's license was launched as free and simple-to-use resources that schools could use to teacher of measure proficiency levels of digital citizenship. The license was created from the elements of digital citizenship to build student knowledge (Noonoo, 2014).

Noonoo (2014) suggested the online DDL program's design could empower independence by educating students to become citizens of the digital world. Districts have chosen to use the digital driver's license by both engaging classroom conversations and requiring students to complete the courses independently. In doing so, students have received customizable licenses, safeguards for use, proficiency in digital citizenship, and social media skills. Additionally, teachers have become more prepared to implement technology in the classroom by incorporating the digital driver's license component (Swan & Park, 2015).

The digital driver’s license concept was intended for students to learn the essential skills associated with digital citizenship before driving in the digital world. More importantly, the digital driver’s license was not created to limit students’ possibilities in the digital world or to attempt to make students do everything in the ways presented (Afshar, 2013). NooNoo (2014) highlighted the digital driver’s license course to include eight grade-level appropriate scenarios covering the issues of digital citizenship. Students registered independently and worked through the material. When students felt they had mastered a topic from practice-its, a prove-it quiz was
administered. Scores 80% and higher passed the quiz. The idea of the program was that students owned their paths to obtaining their digital driver's licenses by making responsible, safe, and ethical decisions when navigating a digital society.

As of 2015, more than 150,000 users from all 50 states and ten additional countries have gone through the program. As stakeholders have needed to educate students on how to use technology appropriately, the use of the digital driver's license as a component of instruction has provided readily available software with thoughtful design. This program has encouraged collaboration among stakeholders to provide an appropriate direction for digital natives to become good digital citizens in an era of rapid technological change (Ribble, 2010; Swan & Park, 2015).

**Summary**

A framework based on the theories of connectivism and digital literacy, in addition to the elements of digital citizenship, guided this investigation by establishing the history of technology, as well as the importance and understanding of digital etiquette, digital communication, and digital literacy through research studies and relevant field material.

Technology’s presence in the school systems of the United States has dramatically increased since the invention of the first desktop computers. Additionally, decreasing costs and an increase in equity and accessibility have allowed 1:1 initiatives to become more feasible (Penuel, 2006). From 2013-2014 alone, schools purchased more than 23 million devices for student and teacher use (Doran & Herold, 2016). This procurement has allowed Web 2.0 technology integration into the classroom to provide interactive and customized learning where collaboration and global opportunity prepare students for the future (An, Aworuwa, Ballard, & Williams, 2008).
An, Aworuwa, Ballard, and Williams (2008) also indicated unless learning was maximized by equity, access, and the limitless potential of Web 2.0, the benefits of technology in the classroom was not guaranteed. According to the U.S. Department of Education (2017), technology should be used as a learning tool to increase the access to learning opportunities for all students and was more effective when adults and peers interacted with the learning process. By collaborating, relationships among all stakeholders were strengthened. When access was equitable, the gaps between the digital divide could transform opportunities for all learners. The research also determined there could be great success when incorporating Web 2.0 technologies into the classroom, as students felt more satisfied with how the content was presented and the ability to work with other students.

In a study conducted by Google (Coolbook@google.com, 2016), data suggested digital natives relied on Google Chrome because it was fast, reliable, and easy to use. Additionally, digital natives associated the term Google with descriptors such as innovative, awesome, and information efficient, making Google both fun and functional. This report reinforced G-Suite’s presence as a Web 2.0 platform in the classroom, as it was used for its collaborative learning power and its continuous updates, keeping it current with the latest learning trends (Cortez, 2017).

Integration with effective implementation, professional development, and student and teacher buy-in of use, promised technology could implement proactive changes in the classroom (Harper & Milman, 2016). The nine elements of digital citizenship helped stakeholders define issues with technology that were affecting students (Ribble, 2005). Previous studies were also evaluated to determine to mean a purpose for this qualitative case study.
Issues such as lack of digital communication, digital etiquette, and digital literacy could be addressed for students to function effectively in the digital age (Jun & Pow, 2011). Additionally, Ribble (2006) believed all stakeholders held the responsibility to guide digital natives toward the use of technology in a responsible fashion. The use of the updated digital driver’s license gave the potential to provide this guidance for students.

The methods for research design for the perceptions of digital citizenship in middle school learning from teacher and student feedback are discussed in the following chapter.
Chapter 3

Methodology

The purpose of this qualitative case study was to gather perceptions of digital citizenship in middle school learning. This chapter discusses the methodology and research design of the study with the following components: descriptions of qualitative research, action research approach, study participants and setting, data collection procedures, ethical considerations, and data analysis procedures.

The researcher identified these methods to be practical because the research and the data focused on a real classroom setting, so data could be used to consolidate newly gained knowledge, to discover new educational issues, and to develop new strategies and teaching methods (Manfrea, 2009).

Description of Qualitative Research

According to Yin (2011), qualitative research has become mainstream in professions such as education, as qualitative research allowed fluidity of relevance depending upon specific disciplines and professions.

Wyse (2011) described quantitative research as research used to quantify variables such as attitudes, opinions, and behaviors. Qualitative research, however, was explained as the understanding of variables such as underlying reasons, opinions, and motivations. Furthermore, Yin (2011) stated qualitative studies enabled researchers to conduct in-depth studies within a broad scope of topics, yielding the ability to research topics of interest. Yin (2011) also determined qualitative research presented the opportunity to be flexible in the design of research. This flexibility provided the possibility of multiple interpretations of a single event. These adaptable qualities of qualitative research allowed studies to understand the meanings of people’s
lives, represent all perspectives of participants, cover contextual conditions within the lives of the participants, contribute new insight to existing research, and use multiple sources of evidence.

According to the University of Southern California Libraries (2017), purposeful case studies were often chosen because of the amount of authentic information that yielded illuminative results from the events of the study. Additionally, Zainal (2007) defined the use of a case study as a method allowing researchers the ability to examine collected data within the scope of a specific context. Case studies allowed exploration of real-life phenomenon of participants through detailed analysis of a limited occurrence of events. If case studies were an in-depth examination of a single event over an extended period, they were considered to be single-case study designs. The University of Southern California Libraries (2017) suggested the use of a holistic perspective when designing a single-case study design to focus on the complex interdependencies of the participants and the setting that could not be described linearly.

Based on these understandings, this single-case study required the use of quality-based qualitative research and holistic perspective to determine the perceptions of digital citizenship in middle school grades by interweaving the theories that inspired the research (Yin, 2011). Baxter and Jack (2008) suggested case studies were used for explanatory purposes when attempting to explain links between the implementation and the effects of a given program. The researcher chose to use the digital driver’s license as a catalyst for the study with the intention of finding positive connections between middle school learning and digital citizenship.

Description of Action Research Approach

Action research was the specific approach used for this qualitative case study. This type of research was defined as exploration by and for the researchers taking action (Sagor, 2000).
Methods involving action research referred to evaluation, investigation, analytical research to cite problems and weaknesses, and help researchers develop practical and efficient solutions. The object of action research could essentially be anything within the realm of educational performance or improvement. (The Glossary of Education Reform, 2015).

Sagor (2000) also described action research as research by a single teacher, group of colleagues, or entire faculty, where the primary purpose for engaging research was to help those researching improve or refine current actions. This type of research involved a seven-step process, which would result in an endless cycle for the inquiring teacher: selecting a focus; clarifying theories; identifying questions for research; collecting and analyzing data; reporting results, and taking informed action. Pillars (2012) also suggested action research was a proactive method rather than reactive a method.

According to Sagor (2000), there were three approaches when organizing a study involving action research. The first approach was meant to build a reflective practitioner; the second was to ensure schoolwide priorities were making progress, and the third approach was to build a professional culture. Current teaching practices at this time of this study, the implementation of one to world, and the review of literature regarding the theories for this qualitative case study led to a specific research question in which the qualitative data related to student learning. School systems unwilling to invest in 21st Century practices such as action research would have a difficult time providing their classrooms with teachers willing and capable of taking on the challenges of the digital native classroom (Prensky, 2001a; Prensky, 2001b; Sagor, 2000).

Given these purposes and the call to action for 21st Century learning, an action research approach was chosen so the researcher could ultimately design and improve her teaching
practices even though action research was considered less formal and did not always provide conclusive data (Pillars, 2012; Sagor, 2000). The researcher was able to take informed action by redeveloping curriculum and refining practices in ways that met all learners. Action plans will change as student needs evolve, but the foundation of studies allow a cycle of inquiry for the researcher (The Glossary of Education Reform, 2015).

**Description of the Study Participants and Setting**

The researcher selected 6th through 8th graders inclusively from one eastern Tennessee school district, specifically from a single middle school within the district. The research took place the first nine-week grading period, and a week into the second, of the 2017-2018 school year. This time frame gave participants time to complete the designated intervention, collect data from students and faculty, and complete data analysis.

**Background of selected setting.** During the 2015-2016 and 2016-2017 school years, 85 Chromebooks were purchased for student use as a starting point for a one to world initiative. The 2017-2018 school year brought funding from both federal and district means to place 220 more Chromebooks in students’ hands. There were also 25 Apple iPads available for student use making the school fully integrated for 1:1 use in the classroom.

**Participants’ demographics.** The selected setting for the study served approximately 330 students equally distributed among the grades levels. The ratio of girls to boys was adequately even. Coming from low-income homes, most students at the selected school had a similar socio-economic status. Special education services were offered to approximately 25% of the student population, eight of whom received gifted and enrichment opportunities. Additionally, there was little difference in ethnicity within the population, as most students were classified as White/ Non-Hispanic.
The faculty from the selected setting was comprised of one principal, one part-time assistant principal/teacher, one guidance counselor, five 6th grade teachers, four 7th grade teachers, four 8th grade teachers, four related arts teachers, and four special education teachers. Of the 24 faculty, nine held a Masters degree, and four held an Ed.S. degree. All but three teachers resided in the county of the chosen district and school.

**Purposive sampling.** For this study, homogeneous purposive sampling was chosen. Crossman (2017) explained this type of sampling as a non-probability sample based upon certain shared traits of a given population and the overall objective of the study. The eight students placed in the gifted program based on appropriate measures of testing served as the student participants in the study. Additionally, their caseload manager, the guidance counselor, and the school principal participated in the study. The rate of participation for both the faculty and the students was 100%.

**Limitations, delimitations, and assumptions.** According to Simon (2011), by recognizing deficiencies and shortcomings in research design, the researcher was empowered to adjust accordingly by defining limitations, delimitations, and assumptions for the research.

**Limitations.** Limitations were described as any issue out of control of the researcher that posed a potential weakness for the research (Simon, 2011).

This qualitative study posed three immediate limitations. Faculty involvement was the biggest concern, as faculty did not wish to take plan time or professional learning community time unless necessary. To address the issue, only three faculty were chosen to participate. Another concern was spending appropriate time with the sample to collect data properly. The study was limited to four weeks of data collection from students and faculty. Additionally, the researcher did not want any results to suggest bias given her background. To avoid the potential
for such bias, the researcher chose to conduct member-checks, a technique used by the researcher
to compare understandings of what an interview participant meant to ensure accurate
interpretation during interviews to produce more authentic data (Wang, 2011).

**Delimitations.** Delimitations were depicted as characteristics that created the scope and
boundaries of the study to keep the researcher in control (Simon, 2011).

For this research, there was no work for participants to complete outside of school. All
necessary curriculum, surveys, and interviews were completed throughout the school day. Due
to time and scope, this study was purposeful in its sampling to limit data to detailed and in-depth
understandings of the eight students and three faculty.

This study was based on perceptions of digital citizenship as a whole with specific
emphasis on digital etiquette, digital communication, and digital literacy. G-Suite for Education
was also a strong point of interest since the chosen district was a Google district, therefore, G-
Suite was used in conjunction with the digital driver’s license program to collect data.

**Assumptions.** Assumptions were not limited to information the researcher assumed.
Instead, all assumptions would be justified (Simon, 2011).

The following assumptions were the foundation for this qualitative case study to be
authentic and relevant:

1. Faculty answered honestly and to the best of their abilities the survey questions
   regarding perceptions of digital citizenship.

2. Students answered honestly and to the best of their abilities the interview
   questions regarding perceptions of digital citizenship.

3. Students fully engaged in the digital driver’s license program.

4. Faculty and students were knowledgeable of the elements of digital citizenship.
5. Faculty and students used technology in personal settings outside of the case study and the classroom.

All student assumptions were held as truths because the researcher expressed the anonymity and the confidentiality of the study. There were no ramifications regarding grading, and the purpose of the study was to prepare them for the future better. All teacher assumptions were presumed true by also preserving anonymity and confidentiality, not taking up class time or excessive amounts of planning time, and expressing the potential for all students in the school to be impacted by the results of the study.

**Ethical Considerations**

Students in the selected school district were required to have signed documentation only if they were not allowed parental consent to online learning. This documentation served as the district’s acceptable use policy. All student cloud-based storage was kept confidential unless a student gave direct reason for a staff member to access the assigned G-Suite account. This meant if students used this privilege responsibly on school property all material was secured from anyone having additional access.

While students were encouraged to collaborate using the provided tools of the study, they were not allowed to directly email one another. This block was implemented by the chosen district as a means of minimizing any cyberbullying. For this study, the restriction of email collaboration was upheld. Additionally, students used the digital driver's license program as a free learning resource. Students used their assigned email addresses to participate; per G-Suite for Education (n.d.) access to all G-Suite Applications were protected under the Family Educational Rights Privacy Act (FERPA) and the Children’s Online Privacy Protection Act (COPPA).
**Institutional review board.** Before conducting any study involving human subjects as participants, the researcher had to request approval from the principal of the selected school. This approval was granted, and the letter stated district board policy did not need to provide further approval. The researcher then sought and obtained institutional review board (IRB) approval from the Carson-Newman University's IRB. All IRB practices were followed—including voluntary informed consent, risk assessment, participant equitability, and assurance of confidentiality. Minimal risk to students and faculty was expected since issues of gender, religion, culture, or other sensitive issues were of no relevance to this case study. As the Common Rule for Human Research Subjects did not allow exemption for interviews, surveys, and observations for children, expedited review was requested given this study was of minimal risk to the children (Health Sciences Institutional Review Boards Knowledge Base, 2010).

The digital driver’s license program was created for schools to use, therefore, permission to use the online program for research was not required. Additionally, the use of G-Suite was granted through the school district as the district became a fully integrated G-Suite for Education system in the summer of 2017.

**Confidentiality and privacy.** Yin (2011) advised all researchers needed to delicately signify and implement strategies that shield the researcher participants from potential harm. All names of participants were kept confidential throughout the study by assigning numbers to participants. A confidentiality agreement (Appendix A) was provided to student participants and guardians as well as faculty participants. Oral permission to record was requested at the time of interviews as well. Additionally, all participants received a notice of privacy from the digital driver’s license program (Appendix B).
Data Collection Procedures

The collection of data for this qualitative study was based on a purposive sampling of eight students and three faculty members. To collect data regarding the perceptions of digital citizenship in middle school learning, a student interview protocol, a faculty survey protocol, and an observation protocol were used to achieve triangulation. In developing procedures for participation and data instrumentation, the literature review served as the infrastructure for brainstorming and constructing protocols. By having pre-organized procedures relating to the literature review for each collection method, the researcher operated on a mental framework to guide the collection of data and ensuring all protocols were relevant to the study.

Procedures for participation. Student participants were selected and recruited based on their enrollment in the gifted and enrichment program at the selected middle school. A student letter of invitation (Appendix C) to include parental consent (Appendix D) was mailed to students/guardians before the first week of school. This letter outlined procedures for the study and voluntary participation. Students were also requested to sign a student assent form (Appendix E). Signed documentation from participants and guardians was requested within the first five business days of the new school year.

Faculty participants were selected based on leadership roles within the selected middle school. A faculty letter of invitation (Appendix F) with an attached consent form (Appendix G) was emailed to chosen faculty the first day of in-service for the new school year. This email was less formal than the student letter of invitation but still included all pertinent procedures regarding the study and voluntary participation. The request for participation responses was dated one week from the date of receiving the letter of invitation.
The consents from both the faculty and the students gave the researcher an opportunity to engage with participants in the planning, the purpose, and intentions of presenting findings from the study. Additionally, incentives for participation included a pizza party at the conclusion of the study for students and a drawing for a gift card for faculty. Permission for this study to take place, letters of invitation, and incentives were all approved by the principal before any data instrumentation being constructed. These variables were also disclosed in the IRB approval document. Upon final approval of the dissertation, student participants and guardians, as well as faculty participants were explained findings and conclusions from the study.

**Student interview protocol.** The first data collection method was based on interviews conducted with student participants. To construct the student interview protocol (Appendix H), semi-scripted questioning, conversational interactions, and open-ended questions were used to collect qualitative data. This type of interview helped better understand participants and their meanings of digital citizenship. The following research question was considered:

What are the perceptions of enrichment students and digital citizenship in the classroom after engaging in the digital driver’s license (DDL) program?

By interviewing student participants, data were gathered about students’ perceptions of digital citizenship in middle school learning. Additional data were gathered regarding impressions and understanding of the use of technology, teachers’ use of technology, classroom barriers, the digital driver’s license program, and the use of G-Suite for Education. All students were asked to participate in the interview process which lasted for 20-45 minutes and took place over several days so students would not lose interest or focus. Data were collected by face-to-face interviews, and data from interviews were collected only by the researcher. These interviews were recorded and transcribed in Google Docs. Verbal permission
was obtained before recording or conducting any portion of the interviews. Students performed member-checks by reviewing the shared Google Doc transcription, and any clarifications to the Google Doc were made. Individual Google Docs were only shared with the corresponding student providing the feedback. Students were instructed not to share results with other participants or peers until the completion of the study.

The interview protocol outlined the basic script of interview questions associated with the research question. These questions provided the student participants the opportunity to engage and expand on relevant information throughout the interview. Open dialogue and working through thought process, without the researcher prompting ideas, was encouraged. The researcher did, however, probe for additional information when responses reflected the potential for additional relevant information. Additionally, these questions served as the mental framework and were not always asked verbatim. These questions were meant to guide the researcher through the student interview process (Yin, 2011).

**Faculty survey protocol.** The second data collection method was established as digital surveys completed by faculty participants. To create the faculty survey protocol (Appendix I), open-ended questions were used to collect qualitative data. Based on faculty responses, the researcher could generate additional questioning. Yin (2011) suggested surveys often lent to quantitative data instead of qualitative data. Due to the selected school's faculty availability, the researcher determined an open-ended digital survey would provide more detailed information. An initial survey created using Google Forms was sent to the teachers. The researcher requested detailed feedback. The survey provided a description of digital citizenship and clear instructions before posing any questions. The following research question guided these survey questions:
What are the perceptions of enrichment students and digital citizenship in the classroom after engaging in the digital driver’s license (DDL) program?

Data were gathered to understand perceptions of the use of technology, students’ use of technology, classroom barriers, use of G-Suite for Education, and professional developments regarding technology. All teachers were asked to participate in the survey process, which was available for one week. Data were collected from results compiled in Google Forms, and data from surveys were only viewed by the researcher. These interviews were reviewed and transcribed in Google Docs along with follow-up questions based on faculty responses. Once faculty answered additional questioning, a shared Google Doc transcription of survey data were provided for teachers to finalize any additional feedback. Any resulting clarifications were made in the Google Doc. Individual Google Docs were only shared with the corresponding faculty providing the feedback. The researcher requested faculty not share survey results with other faculty or students until the research study and dissertation were approved.

The interview protocol outlined the initial survey questions as they pertain to the research question. These questions provided the researcher and the faculty the catalyst for expanding opinions and knowledge during the period of this survey. Thoughtful contributions and authentic insight were requested.

**Observation protocol.** The use of participant-observation was the third method of gathering data. Participant-observation was most relevant to this study because, given the setting, the researcher was acting as an observing participant and as an observer who was also participating. While observing, the researcher noted student participants’ gestures, interactions, and actions throughout the study. Additionally, the researcher observed the pace and completion of activities while using the digital driver’s license program to notate the progress of the study.
To reduce the bias of observation, the researcher chose to observe frequently throughout the study. In doing so, the researcher was able to gather equitable data from all student participants. The researcher documented all days, times, and locations of the observations and concluded all observations with a summary notation. The researcher also allowed students to share first-hand accounts of experiences throughout the study but did not consider second-hand or third-hand information as credible sources of observation.

The researcher created a Google Doc to report all observations. The document was organized to include data, time, location, a specific event or participant, as well as ample space to record notes and a summary of the observation. Google Docs was chosen over handwritten evidence because the researcher was able to type faster than write. Additionally, the researcher could keep information in clear and purposeful order, highlight and make additional comments to field notes, and expand or clarify ideas without making a mess of documentation.

**Organization of interviews, surveys, and observations.** All protocols were managed by Google Docs and were stored in the researcher’s Google Drive in a folder entitled *Field Notes*. Documentation of interviews, surveys, and observation notes was ordered chronologically from the beginning of the study. By using Google Docs, no information could be misplaced or raise risk for issues of privacy or confidentiality. In addition to this organization, four efforts to further enhance field notes, as suggested by Yin (2011), were utilized in conjunction with the respective protocols. First, the researcher immediately filed documentation in an organized fashion within the *Field Notes* folder. Second, the researcher reread all documentation from interviews, surveys, and observations while coding embellishments in a different color. Third, the researcher made comments within the collection of organized Google Docs, and these comments were added to a reminders list. Last, field notes
were reviewed on a daily basis to begin categorizing according to themes and answers related to the research question; this was accomplished more efficiently with coding. Coding was accomplished by the highlighting of information in different colors; a color-code key was created to keep trending themes organized and visible.

Additionally, the researcher filed all protocols, letters of invitation, signed consent documents, confidentiality agreements, and privacy documents from the digital driver’s license program in the Field Notes folder. All hard copy evidence was shredded immediately after placing in Google Drive. All electronic files were stored in the researcher’s Google Drive with password protection for the period as designated by Carson-Newman University. After the appropriately designated time, all files will be permanently deleted.

**Data Analysis Procedures**

Since the research was action-oriented, it was best to use content analysis to determine the results of the data (Hsieh & Shannon, 2005). Observations, teacher survey responses, and student interview responses allowed the researcher to use the data qualitatively to truly understand how digital citizenship skills were perceived in middle school learning.

Data that had been previously organized throughout the study were compiled to create a database for analysis. Open coding, which served as the preliminary phase for data analysis (Hsieh & Shannon, 2005; Holton 2010), was used to break data into organized groups of information so coding could be clustered by substantial themes of evidence collected. After these steps were completed, the organized data were clustered to view and interpret the perceptions of digital citizenship. Extensive data analysis was achieved throughout this process by continuous comparisons of supporting and disconfirming evidence from the collection of interviews, surveys, and observations until findings were fully supported (Brod, Tesler, &
Christiansen, 2009). The cyclical nature of analysis allowed the researcher to conclude from the evidence (Yin, 2011).

The coding analysis toolkit (CAT) was used to cycle the researcher’s database into organized interpretations by connecting coded information from the broadest scope to specific themes and patterns allowing the researcher to propose conclusions from the study. Open codes were guided by the use of line-by-line responses (Holton, 2010) from faculty and students. By using word-for-word open coding as a preliminary measure, the researcher was able to then employ selective coding to relate data through saturation of categories (Holton, 2010). Selective coding established the organization of data into three elements of digital citizenship: digital etiquette, digital communication, and digital literacy.

Content analysis was considered summative, which meant the data were interpreted to find additional underlying meaning to the results of the study (Hsieh & Shannon, 2005). Underlying meanings prompted the researcher to begin taking corrective action at the conclusion of data collection and data analysis procedures (Pillars, 2012).

Trustworthiness. The researcher considered possible ethical constraints for this study to instill research integrity, meaning the study portrayed truthful positions and statements (Yin, 2011). To avoid bias, since the researcher was the single data collection instrument, the researcher did not separate herself from the research. The personal lens a researcher should be used to ensure interpretations do not result from personal perspective but instead from the authentic views of the participants (Brod, Tesler, & Christiansen, 2009). To manage the personal lens, the researcher chose to practice reflexivity throughout the process by acknowledging and considering how she might influence the outcomes of her findings. The researcher also reflected upon interviews, surveys, and observations to gage the vision of the study. Reflexivity and
reflection collectively had potential to produce excellent qualitative research (Ryan, n.d.). Data were also checked for content validity by way of a peer de-briefer to ensure there was no bias throughout the case study.

**Credibility.** Yin (2011) best-described credibility as the preciseness of descriptions and interpretations that lead to appropriate conclusions and explanations. To achieve credibility for this study, the researcher used triangulation, rich and thick descriptions, and member-checks. These methods were not limited to the findings and conclusions of the study, but instead, they were used throughout the entire research process to ensure accuracy throughout the field study when collecting different methods of data.

**Triangulation.** According to Yin (2011), triangulation occurs when three means of data corroborate descriptions and evidence of a study. For this particular qualitative case study, the researcher chose student interviews, faculty surveys, and observations as the means of data collection for studying the perceptions of digital citizenship in middle school learning.

**Rich and thick descriptions.** Rich data, with multiple layers of details, provided the researcher with intricate and varied data to ensure data collections were fully addressed during data analysis (Fusch & Ness, 205; Yin, 2011). Thick data provided the researcher with an extensive amount of evidence from student and faculty participants (Fusch & Ness, 2015). Thick descriptions also allowed the researcher to draw conclusions that could be transferable to other settings and circumstances (Cohen & Crabtree, 2006). By incorporating both, the researcher had the quantity and quality of research needed to compensate for the smaller purposive sample size (Fusch & Ness, 2015). Without the quantity and quality of data, researchers have the potential to encounter superficial accounts, or thin descriptions, which would not allow accurate conclusions to be drawn (Cohen & Crabtree, 2006).
Member-checks. Yin (2011) referred to member-checks as respondent validation. Using this method, participants had the opportunity to provide feedback from previewed field notes to reduce potential misinterpretations of interviews, surveys, and observations. The researcher felt by providing member-checks, participants would invest in the study to provide more authentic and meaningful results.

Content validity. Content validity of this study was used to determine if or whether the pieces of evidence collected throughout the study were related to the conceptual framework and provided relevant response opportunities throughout the survey. By aligning the framework with the interviews, surveys, and observations, the data were appropriate and meaningful for gathering data. Additionally, it ensured the means of measurement consistently reflected the perspectives and experiences of the participants. Sufficient data were collected for the theme of the research study to the point of conceptual saturation, at which point all properties, dimensions, and variations of digital citizenship were addressed (Brod, Tesler, & Christiansen, 2009). The point of data saturation was reached reasonably quickly, as this was a smaller study; however, the researcher felt enough data were collected to replicate the study if the opportunity to obtain new data were possible. Since the research consisted of only eight students and three faculty participants, it was crucial all pieces of evidence provided depth for the study (Fusch & Ness, 2015).

Summary

The methodology for this qualitative case study defined qualitative and action research and also outlined the research design used to gather perceptions of digital citizenship in middle school learning. A description of the participants and setting provided thorough information about the background of the selected school, participants, and demographics. Purposive
sampling was defined, and limitations, delimitations, and assumptions for the study were expressed. The methods of data collection were explained by giving descriptive evidence regarding procedures for participation and interview, survey, and observation protocols, as well as the organization of field notes for the longevity of the study. Ethical considerations were discussed which included the issues of the institutional review board, privacy, and confidentiality. Steps for analyzing data were determined so the researcher could interpret and conclude findings. The final heading of this chapter examined issues of trustworthiness, credibility, and content validity through triangulation, thick descriptions, and member-checks. The proceeding two chapters will discuss in-depth the findings from the data and conclusions to the study.
Chapter 4

Presentation of the Findings

This qualitative study was conducted to evaluate the perceptions of digital citizenship in middle school learning. This was achieved by using the Digital Driver's License (DDL) program as a catalyst for intervention to gauge student awareness of the responsibilities of interacting in a digital society. The case study explored both student and teacher perceptions of digital citizenship as they related to in-class learning. To better equate an understanding from participants, Ribble's (2006) elements of digital citizenship, Siemen's (2005) theory of connectivism, and theories of digital literacy were all considered as the theoretical framework.

The presentation of findings was organized by the following: research question, setting, demographics, collection of data, analysis, credibility of the study, results organized by specified elements of digital citizenship, and a summation of data.

Research Question

One research question prompted the investigation of teacher and student perceptions of digital citizenship for middle school-aged students:

What are the perceptions of enrichment students and digital citizenship in the middle school classroom after engaging in the digital driver’s license (DDL) program?

Setting

Student intervention using the DDL program was conducted in the library of the specified school chosen for this case study. All eight student participants engaged in the intervention at the same time. Additionally, all observational notes were collected during 5th period keeping the intervention time the same throughout the study.
Student interviews were completed independently in the library’s study room. One-on-one questioning occurred during 1st period and 5th period over the course of three days. Student interviews lasted around 25 minutes with one student discussing digital citizenship for 55 minutes. By conducting independent, open-ended questioning, feedback was more authentic and was not influenced by other participant responses.

Faculty surveys were administered via Google Forms. Each faculty participant had one week to respond to the digital format. All three participants returned the open-ended survey within the week. No known issues of accessibility or use of the G-Suite application were reported. Additionally, the researcher was unaware of any potential influences that may have presented as bias in responding to survey questions.

**Demographics**

All faculty served in the designated middle school and were chosen based on leadership roles within the school. Of the three faculty, one participant was a middle-aged male, one participant was a middle-aged female, and one participant was a younger female. The three participants had open lines of communication with all students at the school.

- Faculty Participant 1 was female and served as the middle school principal with her Ed.S. degree. She had 20 years of experience, 15 of which were dedicated to serving the current population. This was her 6th year as principal.
- Faculty Participant 2 was male and served as the gifted students’ caseload manager. He held his master's degree and had been teaching special education for eight years.
- Faculty Participant 3 was a female and serving her third year as the guidance counselor. She started courses at the beginning of the 2017-2018 school year to pursue her Ed.S. degree.
All student participants were enrolled in the talented and gifted program at the middle school. All but three of the students came from middle-class homes; one student came from upper-middle class, and the other two came from low income. One student was raised by a single grandparent while three others came from split parent homes. Three students came from a two-parent household. The eight student participants were compiled of three sixth grade students, two seventh grade students, and three eighth grade students. Four student participants were male, and four student participants were female.

- Student Participant 1 (Fandoms Unite) was a 6th-grade female. In addition to exemplary academics, she was on the basketball team.
- Student Participant 2 (Golf Guy) was a 6th-grade male. His extra curriculars included golf and rock music.
- Student Participant 3 (TN Vols Girlie) was a 6th-grade female. She did not have any interest in physical activities, but she loved reading.
- Student Participant 4 (Videogame Nerd) was a 7th-grade male. His grades reflected his devotion to video and online gaming.
- Student Participant 5 (Alliepaca) was a 7th-grade female. She was enrolled in Algebra I, and she was the BETA Club’s President-elect.
- Student Participant 6 (Ghostbuster) was an 8th-grade male. He was enrolled in Algebra I, but he said math was his least favorite subject.
- Student Participant 7 (Trend Trinity) was an 8th-grade female. She was also enrolled in Algebra I and was interested in attending concerts.
Student Participant 8 (Unicorns Forever) was an 8th-grade female. She was enrolled in Geometry at the high school next door and was focused on completing tasks that would help her become an engineer.

**Data Collection**

IRB approval was granted on 08/15/2017. After receiving approval, the researcher mailed a letter of invitation (Appendix C), a parental consent form (Appendix D), and a privacy notice for the DDL Program (Appendix D) on 08/16/2017. Only two consent forms were sent back within the first week. At which point, the researcher explained to students during their designated gifted time the option of this case study and its relevance. One week later, the researcher still had not heard from any other parents. In a final effort to utilize students from the enrichment program, the researcher sought the help of the caseload manager. The caseload manager was able to reach out to parents and further explain the significance of the study and the option to participate. By 09/15/17, all eight parent consent forms had been returned. The same day, the researcher reviewed the student assent form (Appendix E) and had all students sign. Additionally, the researcher sent home a confidentiality notice (Appendix A), the student assent form, and the researcher’s signed portion of the parental consent document. These documents were scanned for the researcher’s records to a personal and password protected Google Drive account and were only accessed from the researcher’s home.

Students participated in the intervention from 09/18/2017 to 10/06/2017, giving them three weeks to obtain their Digital Driver's License. All eight students completed their designated tasks independently, and all were awarded a Digital Driver's License by 10/06/2017. Six of the eight students finished the intervention on 10/04/2017, one student finished on 10/05/2017, and the last student finished on 10/06/2017. During this three-week span, the
researcher kept observational notes of student gestures, overall impression of interest in the program, and first-hand accounts that were reported by students. These notes were taken on a personal laptop at the school and were stored in a personal and password protected Google Account.

A faculty letter of invitation (Appendix F) was emailed to the guidance counselor, the caseload manager, and the principal on 09/22/2017. All faculty participants responded back by 09/25/2017 and consented to participate. The researcher provided them with hard copies of the faculty consent (Appendix G) as well as the notice of confidentiality (Appendix A) on the same day. All consents and confidentiality agreements were scanned for the researcher's records and were saved in a personal and password protected Google Drive account.

On 10/02/2017, a Google Form survey was administered to all participating faculty. It was requested that faculty answer in complete sentences and provide as much feedback as possible regarding their perceptions of digital citizenship in middle school learning. The survey contained 17 open-ended questions for faculty to respond. Participants had until 10/06/2017 to complete the survey; however, one participant completed the questions the first day. The other two participants completed their responses on 10/05/2017. On the morning of 10/06/2017, the researcher compiled individual responses in a Google Doc and shared them with participants to conduct member-checks. The researcher requested they review the document and share any feedback with her by the end of the school day. All participants responded back with no discrepancies; no other information was provided from member-checks. The Google Form was created using a school Google Drive account, however, as soon as responses were received, the researcher saved the data in a personal and password protected Google Drive account.
Additionally, all member-check documentation was created using the researcher's personal Google account. The only person each document was shared with was the specified participant.

Student interviews began on 10/16/2017 and were completed on 10/18/2017. By giving students time to process questions and not cramming questions into one setting, students were able to provide more thoughtful responses. Students were also given the opportunity to come up with personal code names to encourage buy-in. The student interview (Appendix H) was made of 17 open-ended questions and allowed for additional commenting and feedback throughout the interview. Before beginning the interviews, the researcher reviewed the student assent form (Appendix E) with each of them; this allowed any final questions for students before beginning the interview process. The interviews were recorded to a school-owned iPad. As interview segments were completed, files were immediately pushed to a personal and password protected Google Drive account and deleted from the iPad. As an extra means of confidentiality, the researcher put a temporary passcode on the iPad. Interviews were only viewed at the researcher's home. In addition to recording the interviews, notes were taken using Google Docs on a personal laptop and were saved in a personal and password protected Google Drive account. On 10/19/2017, the researcher compiled interviews into individual responses using Google Docs. These notes were only shared with individual participants, and they were stored in a personal and protected Google Drive account.

Data Analysis

From the three forms of data collected, the researcher was able to analyze and code themes and patterns based on participant feedback and an observational protocol. Observational notes, directly quoted responses from faculty surveys and student interviews, and their respective member-checks and reflections were used to define themes from the study. After open coding
was complete, themes emerged from the data. Using theoretical framework from Ribble’s (2007) digital citizenship, Siemens’ and Downes’ (2005) connectivism, and theories of digital literacy, the themes were then grouped into a more broad scope of digital citizenship: digital etiquette, digital communication, and digital literacy.

- Digital Etiquette: *enhanced awareness of digital footprint, adopted digital etiquette perspectives, and heightened interest in bias of ethnocentrism*
- Digital Communication: *defined differences in types of digital communication*
- Digital Literacy: *open access to technology and curriculum modifications fully integrating G-Suite and the Digital Drivers’ License Program*

Codes were completed over multiple settings to organize data cohesively and unbiasedly, and themes were then defined. A peer de-briefer was used to identify partial themes or trends and to establish fully emerging themes from collected data. Additionally, the de-briefer reviewed data for discrepancies and bias. Neither of these issues was reported for this case study.

**Credibility and Content Validity**

Both credibility and content validity were addressed throughout the data collection period and the data analysis period to ensure this qualitative case study held to standards of trustworthiness.

**Credibility.** To achieve credibility and accuracy for this study, triangulation, rich and thick descriptions, and member-checks were used throughout the longevity of the qualitative research study.

**Triangulation.** During research, data were collected from eight student participants and three faculty participants. The student participants were observed during the Digital Driver's
License (DDL) intervention period of research. Observational notes were taken to better reflect on student gestures and interest as well as to document first-hand accounts as stated by students over the course of the intervention. Student participants also provided data by way of on-on-one interviews to discuss perceptions of digital citizenship. In conjunction with student participant data, faculty participants yielded data by answering an open-ended survey regarding aspects of digital citizenship at the middle school level. These multiple sources of investigation and inquiry enhanced the ability to interpret valid and dependable findings.

**Thick and rich descriptions.** Thick and rich descriptions provide multiple layers of data and extensive evidence. Such descriptions from observational notes, student interviews, and faculty surveys provided sufficient quantity and quality of data to determine commonalities and themes from this qualitative study.

**Member-checks.** By including member-checks after student interviews and faculty surveys, the researcher was able to obtain validation and correct any potential misunderstandings before beginning data analysis. Giving participants this opportunity allowed them to invest in the case study truly and provided thoughtful responses. These responses also produced authentic results for analysis.

**Content validity.** Content validity was achieved by collecting data to the point of saturation to provide depth to the study. After all data were collected and member-checks were completed, a peer de-briefer was consulted to ensure a reflexive approach was maintained to eliminate potential bias during data analysis. By using saturation, a de-briefer, and reflexivity, the researcher was able to remain objective throughout the study and, therefore, provided confirmability of the results.
Results by Elements of Digital Citizenship

The purpose of this qualitative case study was to identify faculty and student perceptions of digital citizenship. To develop themes, multiple interviews, surveys, and observational notes were conducted. The following themes surfaced and were grouped according to three elements of digital citizenship.

**Digital etiquette.** Ribble (2017b) described digital etiquette as the standards of electronic conduct or procedures. While coding and organized data from this qualitative case study, the following three themes were developed: enhanced awareness of digital footprint, adopted digital etiquette perspectives, and heightened interest in bias of ethnocentrism. These commonalities were shared by faculty and students and showed relevance regarding the implementation of digital citizenship at the middle school level.

**Enhanced awareness of digital footprint.** This first theme evolved from the data analysis of faculty surveys. All three faculty participants mentioned the digital footprint regarding student interactions with technology. After student interviews were coded, a commonality was present as well. To begin the exploration of the perceptions of digital citizenship in middle school learning, it is important to understand participants' understanding of a digital footprint before and after the intervention. There was evidence to support an increase in students' awareness of a digital footprint after participating in the Digital Driver's License program. Ghostbuster described his understanding:

I think the idea of a digital footprint is somewhat a concept of commonsense, but when you learn about digital citizenship as a whole—there is, for sure, like something to learn about your digital footprint. Your audience is endless, and things are never really private, and they never really go away. It's way different
than doing something at school because at school something can happen and
time is forgotten; when stuff happens online, people have access to it forever.
Additionally, Faculty Participant 1 and Faculty Participant 3 specifically related the digital
footprint to instances of cyberbullying. Faculty Participant 3 stated:

    Students at this age have little concept of the long-term effects of cyberbullying.
    Even if they think they are playing around with other students, they don’t
    necessarily understand how cyberbullying is worse than picking at another student
    at school. Hopefully, as we get more devices in the school and more students are
    aware of digital citizenship, we can begin to impress upon them the severity and
    the responsibility of a digital footprint.

Similar thoughts were shared by Fandoms Unite, Golf Guy, TN Vols Girlie, Videogame Nerd,
and Unicorns Forever. They all expressed a desire to be more aware of their digital footprints.
For example, Unicorns Forever reflected:

    I hadn't ever given something like this much thought. But you know, it does
    make a difference. What I do now has the possibility of following me around. I
    don't want someone even to mistake something I did online as cyberbullying. My
digital footprint in some ways is more expressive of my personality than, like,
when I'm at school or out in town with friends because actions speak louder than
words. Online actions can be very easily taken out if its, um, original meaning.

Alliepaca, Ghostbuster, Golf Guy, and Unicorns Forever also related these actions to
their access to social media. Alliepaca said, "social media can make or break the reputation of
your digital footprint. Ghostbuster mentioned, "It was interesting to learn social media can
determine opportunities in my daily life not just when using technology. I hadn't ever, like,
thought about it like that.” Unicorns Forever also added, ”social media is not our right as much as we would like it to be. It's like more of a privilege, and we shouldn't do things to get that taken away.” Golf Guy even stated, ”I'm just in 6th grade now. If I do dumb or thoughtless stuff online now, I’ll get in trouble with my parents and maybe even at school. I don’t want to do that because I don’t want people to get the wrong idea.”

Faculty Participant 2 also added the following regarding student digital footprints:

I think the idea of teaching students about digital citizenship is great. I think we get so caught-up in teaching core content that we forget about life lessons. The ideas of digital citizenship and digital footprints are a part of today's world, and we need to remember we have parents that won't talk with their kids about proper etiquette in the community much less etiquette concerning technology.

Fandoms Unite was also able to relate the digital footprint to a life lesson by commenting, ”Sure this may seem like commonsense but is like one of the things you don't always think about, but when you do, you're like ‘oh yeah' I need to think about this kind of stuff. TN Vols Girlie reflected, ”I guess I see now why you wanted to ask us about this stuff. It wasn't the most exciting thing, but it's like a skill we need to be aware of and master in and out of school.”

Students were able to become more aware of their digital footprint because they were able to see that choices they made behind the screen could affect them. They realized ownership of their footprint, and those realizations motivated them to responsibly display good habits of digital etiquette. An interest coming from all participants indicated the importance of a digital footprint and how individual footprints affect them in and out of the classroom.

**Adopted digital etiquette perspectives.** Data also showed a theme of adopting new perspectives regarding digital etiquette. All participants commented on some capacity about the
appropriate time to use various devices. Perspectives about digital etiquette were more positive at the end of the intervention period for students, and faculty acknowledged the importance of displaying good digital etiquette.

Interestingly, all faculty participants specifically mentioned the use of cellular devices during dinner. Faculty Participant 1 stated:

After reading the definition of digital etiquette, I realized how rude I am to my family. I always have my phone out at the dinner table. We are so busy, and the work day doesn't stop at 3:30 pm. I'm always replying to an email, sending a reminder text, or reading an article or blog before I forget my train of thought. There is so much to do and only so much time to get things done, but this was an eye-opener. I want to make sure I set a better example of digital etiquette for my kids at home and my students in the building.

Faculty Participant 2 shared similar thoughts:

I have two kids, a wife, coach softball, and we are extremely active in our church. With a busy schedule like that, it is very hard to disconnect. You feel like you are going to forget something or miss something if you don’t keep your phone glued to you. The reality is, though, dinner time doesn’t last for forever, and I need to make a point to talk to my wife about putting phones away when we are eating dinner with the boys. They are only in preschool now, but if we don’t make changes now, the habit will be even harder to break as they get older. We need to let the boys know there is more to life than having your phone out all hours of the day.

Additionally, Faculty Participant 3 shared:
I’m so used to having my phone right beside of me that I almost feel naked when I don't. I was raised at the height of everyone having a cellphone; it's like a staple, and your ensemble isn't complete with it. I guess I was aware but just didn't pay that much attention to the number of people -- myself included -- who had their phones out, even at dinner. I mean, we have people right in front of us when we are eating, but instead we are using our phone reaching out to other people. I need to hold myself more accountable and start the change among my friends and set the example for our kids at school.

Student participants were no exception to adopting new attitudes toward digital etiquette. Videogame Nerd related his new attitude to online gaming:

Videogames are my main interest in my free time. I used to get, like, super annoyed when people would smack-talk during a game. But now I think back, and I was, like, doing the same thing. Whether it is all in good fun or not, you have to be careful how you express what you say or do. It's not like those other people can see your face or see your expressions. So it's way different than when you're, like, at school and doing stuff together with people right in front of you.

Trendy Trinity, TN Vols Girlie, and Fandoms Unite expressed they noticed more adults than younger people using their phones when in the movies, but it did not bother them. They were merely more aware after going through the Digital Driver’s License program. However, Golf Guy stated:

I'm not really sure how often I actually noticed the number of people on their phones during the movies, but now, I feel like I notice everyone. I think I could.
like, respectfully ask someone to put their phone away if they were sitting near me in a movie, and it’s because I understand why it’s not cool to have your phone out all of the time now.

Other issues of etiquette awareness themed around proper usage in the classroom. All student participants made it clear they wanted to use more technology tools in the classroom. However, there was concern from Alliepaca:

I mean we are in middle school, and we have immature people in our classes. I think that being informed about digital citizenship is really important. In 7th grade, we have regular access to technology in math and in language and when we have library. If teachers want everyone to learn content specific information they need to take the time to explain digital etiquette. Otherwise, we have all these people who don’t take class seriously looking at everything on the device instead of paying attention to the instructions from your teacher.

Fandoms Unite also had a similar viewpoint, as she expressed her potential concerns about having daily access to technology:

It will be a super big responsibility when all of our Chromebooks get to our school. Most of us just now figured out how to get to class one time with all of our materials. Now we have to, like, remember to get our device, put it in our carrying case, and we are all expected to listen to our teachers with a computer right in front of us. I mean, I won’t have a problem, but I can think of at least five in every class that will.

Similarly, Faculty Participant 2 commented his initial lack of awareness regarding digital etiquette in the classroom:
Since I'm in special education, it never crossed my mind that it may be as simple as my students not listening to me during instructions. I need to demand that expectation of them and hopefully certain confusions will be limited. Of course, I know there will always be times when instructions don’t click. But, if I train my students to listen first and then act on technology, there is a chance students will be able to ultimately engage at a more independent level of learning.

Alternatively, Ghostbuster gave classmates more ownership by saying, “if we got in the habit of using devices in the classroom, we would innately know to follow instructions first from the teacher.” Trendy Trinity also commented, "technology use in the classroom is a plus for us; it isn't something teachers have to let us do. Hopefully, we would have enough sense to be respectful while our teachers gave instructions." Unicorns Forever did not seem as worried, either; however, her response was "if you listened in class before technology arrived, then you shouldn't have any problem listening when it gets here. We can listen in language class, and we listen in the library. What's the difference?"

Faculty Participant 1 and Faculty Participant 3 both expressed interest and positivity about modeling digital etiquette in the classroom. They both felt that providing these tools was more than engaging in technology and motivating students to learn. Faculty Participant 1 suggested, "students are excited about the technology coming into the school, and I definitely think teachers and students will have to take on more roles to ensure digital etiquette in our classrooms." Faculty Participant 3 also shared "if we can model these types of behaviors in the classrooms, our students will be more prepared for their futures, but they will also be more able to responsibly engage in social media and other technology based activities outside of the classroom."
The theme of adopting digital etiquette perspectives showed promise of students using devices in and out of school correctly and an understanding that having digital etiquette was as equally as important as showing respect without the presence of technology.

*Heightened interest in the bias of ethnocentrism.* This theme was developed by student responses during their interviews. Faculty did not relate to this as in-depth; however, Faculty Participant 3 did note:

> We have this unique opportunity to now engage with learners all over the world. I hope our students will be mindful of cultural differences as these activities take place. In class, teachers and other students know student quirks and can see facial expressions. When students are engaging with other students from other places, they need to be very thoughtful and mindful in those communications.

TN Vols Girlie shared what she had learned over the course of the intervention:

> It's like, you know, we are sitting here talking, so you can see me, and I can see you. But, if like, you had even asked us to answer these questions online, we may not have understood them, or you may not have understood our answers. It would be the same thing talking to, you know, people from different places. They may not understand what we mean by a certain phrase or something.

Fandoms Unite had a similar response, as she compared what she had learned about digital citizenship to a southern cultural phrase:

> So my mom was telling me that apparently "bless your heart" is basically like an insult in other places. That is just like what we are talking about here; slang is not
cool to use when collaborating with others. I don’t want someone thinking I’m judging them just because I’m using a phrase. I wouldn’t want to get that feeling from someone else either.

Ghostbuster even compared this potential bias to cyberbullying:

It's kind of like issues of cyberbullying without meaning it, you know? I mean the Internet and your screen are this big, scary mask. People can't always see you when you are communicating in a digital place. It's way important to make sure things like slang or shorthand don't come across the wrong way. We have access to limitless knowledge, so it's probably a good idea to educate ourselves on the realities of other cultures. Hopefully, that can limit some of these ideas we might have.

Videogame Nerd also added:

When I’m gaming, I need to do like a better job of making fun of how people talk. You know they are making fun of us, too. We could all probably have a better time if we were more open-minded about our differences. We could probably like learn other stuff too about different places and stuff.

Golf Guy and Unicorns Forever also shared similar thoughts. Unicorns Forever expressed, "it's like one of those things, you know you are different from other people in other places, but you don't stop to think how and why." Golf Guy stated, "I want to know more about people and places. I know I don't want to be judged, so why would I like try to judge them?"

Trendy Trinity’s reflection allowed her to “stop and think about all the people and places in the world that were accessible and they have to be different than us in this small town. Instead of making it like a bad thing, why not learn from it.” Alliepaca also commented, “I know I want
to go places when I get older and meet new people. I should learn as much as I can now so I can be prepared. I want to go to these new places without having the wrong impression, so I need to start taking on the world now.”

These findings proved that the digital citizenship intervention reduced ethnocentric views of different cultures. Students were able to differentiate their own cultures from the cultures of other around the world. These changes in awareness showed promise that students at a middle school level could be responsible with their online behaviors to appropriately engage in a one to world learning environment.

**Digital communication.** According to Ribble (2017b), digital communication is considered the exchange of information in any electronic form. The theme of this element that was present was defined differences in digital communication. Growth from students was evident from responses during interviews.

When discussing ways in which student participants engaged with peers in digital format, most student participants shared similar views. Student participants commented on short-hand, slang, incomplete thoughts, and emoji icons, memes, and gifs. Fandoms Unite stated, "you just want to like say something really fast, so you abbreviate words and use lots of emojis…most of the time they like know what you mean." Additionally, TN Vols Girlie got really excited and screeched, "EMOJIS…I use lots of emojis. My friends just know that's me." Videogame Nerd reported, "I don't like text that much because I can talk directly to people in my games, but when I do, I just type a little, and I use like memes and gifs. Ghostbuster was very descriptive in responding:

When I talk to my friends, I don’t want to have to type out every single word all of the way or make a complete thought. It’s like, they are my friends; they know
what I’m talking about. We don’t like write papers to one another. It’s usually about something we’ve already talked about at like school or something, so there’s no need for details. We usually speak in phrases and reference sayings and stuff.

Comments regarding how participants communicated with other peers were the main points of interest coming from these participants. However, when asked how they should communicate with people they do not know or adults, they were able to determine differences between the two types of communications. Fandoms Unite responded, "of course I wouldn't ever talk to a teacher like that in an email. It is one of those common sense things, but I didn't like to think about it until taking a digital driver's license quiz. Then I was like, duh." TN Vols Girlie said, "I guess I never thought about it, but I talk to my teachers and people I don't know differently than I talk to my besties. So, you know, I guess it makes sense that I would need to have, um, better digital communication too. Videogame Nerd stated, "it's just something we need to like remember to do. Our teachers wouldn't understand our responses if we used gifs and stuff, so it's probably a good idea to be more formal. Ghostbuster's response indicated a similar thought, "We haven't had the opportunity to email our teachers a whole lot, but it would make since, especially after what we learned, that we would sing to a fancier song."

Other student participants were able to provide more specific insight based on knowledge gained during the intervention of the Digital Driver’s License (DDL) Program. Golf Guy reported digital communication was one of the more interesting sections of the course:

I just recently got my own phone when I started 6th grade, and our Chromebooks will be here soon, so it's really important that I start now knowing how to properly communicate with other people in a digital way. I learned there are different
ways to communicate with others, and a lot of it has to do with how well you
know that person. For example, it is okay to, you know, send emojis, even to
people you don't know or something as long as they won't be taken the wrong
way. Slang and short-hand aren't a good idea when talking to people from
different places or talking to your teachers. It's like important to
make sure the other person knows exactly what you’re talking about.

Trendy Trinity reflected she had learned the reasoning behind a more formal tone when
communicating with certain people:

I knew even before taking the digital driver's license test that I should
communicate different with my teachers, but I didn't really know why besides
they were my teachers. Now I understand. Even if you joke around with your
teachers, they deserve respect in class and written form. They are the people
teaching us what we need to know for high school, so when you think about it like
that—I can better like understand that I need to take the time to show that I have a
complete thought and that I know how to express myself to my teachers. Digital
communication with your teachers is like really no different than turning in
homework and stuff.

Faculty perceptions also indicated there were differences in communication styles
between students and other faculty. Faculty Participant 1 stated, "I want our kids to know that
when I email my supervisor, I'm more formal than when I send a quick email to our staff. It's the
same thing." Faculty Participant 2 replied with, "we need to train students to be respectful and
professional in all types of communication, including online communications. That's what
workplaces in the community are looking for." Faculty Participant 3 shared:
I want kids to be kids and have fun picking out personal expressions and use things other than words to express what they mean, but it is extremely important they know when to do that and what types of communication are appropriate at different times. When students are emailing us, they need to focus on things like grammar and formatting. They need to express complete thoughts, so we know what they mean. This is also true when they are collaborating with each other. If they are working from home or in a collaborative document, complete thoughts and correct grammar are extremely important. They need to know those aren't situations where they are using their smiley faces and graphics.

Adding to Faculty Participant 3’s thoughts, Unicorns Forever commented on appropriate digital communication when collaborating in groups:

It’s kind of annoying because there is always one person in the group that thinks it’s funny to insert dumb stuff in a Google Doc we are all supposed to be working on for a grade. I’m sure it’s because they are just immature, but it’s like when are they going to realize text messages to friends and assignments for a grade are two totally different things. If we had the opportunity to teach everyone about digital communication, we could probably work together in groups.

Additionally, Alliepaca thought the digital communication involved in peer collaboration could be improved by all students participating in the Digital Driver’s License (DDL) Program. She stated:

I think if we realize the different ways to communicate with one another, then we could work better together in groups. We have to learn to work together
somehow, and since technology isn’t going away, we should learn how to properly communicate and collaborate through digital applications.

Student and faculty participant responses indicated a strong theme in differentiating ways in which digital communication occurred. Participants agreed that talking with friends was less formal than when dealing with teachers or people they may not know. Student responses suggested the Digital Driver’s License (DDL) Program broke down communication barriers and made it easier to understand the importance of clear communication, complete thoughts, and formatting were essential when communication was more formal. Additionally, ideas regarding digital communication when collaborating with peers for assignments were formed.

**Digital literacy.** Ribble (2017b) explained digital literacy as the teaching and learning of and the uses of technology. At the conclusion of the intervention, two themes relating to digital literacy were developed, (a) open access to technology and (b) curriculum modifications fully integrating G-Suite and the Digital Drivers’ License Program. These themes illustrated the need to be considered within middle school learning.

**Open access to technology.** Student participants vocalized the need to have more access to technology. Some participants focused on the need to have consistent devices available, while others mentioned the desire to have fewer filters through the school network. Regardless of the concern, students wanted the opportunity to engage with more technology. Trendy Trinity disclosed:

I mean I do have a phone, but I don't have access to another device or even a printer at home. We don't like have a real internet plan; we just use data on our phones. After finishing the Digital Driver's License (DDL), I realized that I'm lucky to, you know, have a phone, but I need something a little bigger and easier
to use when I'm trying to find credible information. That's why I like to use Chromebooks at school, but since I'm in 8th grade, we don't always get to use them. We have them in English class and in the library, but that’s all, you know?

Unicorns Forever also commented on the lack of consistency regarding access:

I wish we could just bring our own stuff, so we had it when we needed it. We can't have our phones out in class, and we have our tablets. So when we can't check out the Chromebooks, our only option is the computer lab, and those things are like so old, they never work. We spend more time trying to get them to turn on and load than we do getting anything done for class.

Ghostbuster also shared a similar opinion:

I guess after finishing up the driver's license stuff, I realized we are lucky to have access at school and stuff because some places don't have anything, but it would nice if we could use it in classes all the time. When we only get to use them from time to time, you have people in class that like don't even remember how to log in. If we could get in a routine, we could all be better digital citizens.

In addition to issues regarding access of physical devices, other students expressed concerns about access to credible sources. Alliepaca related this issue directly to the intervention program:

We have for sure gotten more Chromebooks at school since I was in 6th grade, but it's super frustrating when we have them, and we still can't get our stuff done because something is blocked. Even when we were doing our lessons for the digital driver's license, there were videos blocked and you like had to contact
technology and have them unblock it. It stinks we have access but can't be trusted to find and use credible stuff.

Golf Guy and Fandoms Unite also commented on missing questions on the driver's license quizzes because they did not know at first videos could be unblocked. Golf Guy said, "if I'm going to take time to do this program for you, I want to have all of the information to do it like right." Fandoms Unite also added, "I could have gotten 100% on those first two sections if I had known I could have you unblock the video. It stinks we don't have total access." TN Vols Girlie stated, I am able to find stuff at home since we don't have our Chromebooks in 6th grade, but it's like not everybody can.”

Videogame Nerd did acknowledge that he did not have complete access at school, but was not overly bothered. He stated, "I mean it's lame we can't do a lot of stuff at school, but I can just like go home and do it if I really need to."

Faculty participants reflected on the amount of technology available in the building over the last few years. Faculty Participant 1 stated, “I’m thrilled we have gone from 25 Chromebooks to 250 Chromebooks in only three years. I know we still need to grow, but I think it’s a good start. I hope our kids realize this opportunity.” Faculty Participant 2 also stated, “We still have kinks to work out so all students have equitable access, but we are ahead of a lot of schools, especially within our district.” Faculty Participant 3 provided a detailed perspective regarding access to technology in the middle school setting:

Our kids have even more opportunity than they realize with the amount of technology we have at the school, but I can see why they are frustrated. All they hear is how they should using devices in their classes, but not all of 6th grade have gotten their assigned Chromebooks, and 7th and 8th are sharing. If we are going to
give them a one to world experience, we need to make sure everyone really has
access. I know it has to be difficult for teachers, too, because sharing devices
doesn’t provide consistency in the classrooms.

Open access proved to be something every participant was interested in. Participants
agreed to facilitate meaningful learning with technology that students needed consistent access to
devices. Some participants even expressed a strong desire to have access to credible information
that was often blocked due to the county's Acceptable Use Policy (AUP). Overall perceptions
involved having more access to more information in the middle school classroom.

**Curriculum modifications fully integrating G-Suite and the Digital Driver's License**

*Program.* Participants were questioned about the importance of using a variety of programs in
conjunction with core content learning. While some participants suggested multiple mediums,
everyone agreed fully utilizing G-Suite for Education and incorporating the Digital Driver’s
License Program into the middle school curriculum would provide a solid foundation for
students becoming responsible digital citizens.

*Fully integrating G-Suite.* The school at which this case study was completed was a G-
Suite for Education school, but participant responses indicated G-Suite was not fully utilized by
students in the classroom. Faculty Participant 1 responded:

I’m embarrassed to say I didn’t even know students had a student assigned email
address until the beginning of last school year. Now suddenly, I’m behind the
curve because that email address attaches our kids to everything. I’m not sure we
are there, yet, as a faculty to fully use everything Google has to offer. I know
some of our teachers use some of the applications, but I think in order for our
students to be fully emerged in digital literacy there needs to be a bigger
motivation for our teachers and students to use these tools.

Faculty Participant 3 also acknowledged G-Suite was not fully utilized in the classroom:

I think our whole district is just a little behind. We are growing in the right
direction, but our technology department isn't adequately staffed, and so a lot of
information gets lost in translation. I think it's just going to have to be up to
building level personnel to make these changes happen. We definitely need more
professional development to make using G-Suite in the classroom meaningful to
our kids, but that may have to come from teachers in the building who already use
it and not wait around for the technology department to come and help us. G-
Suite is an excellent tool, and all of our students should know how to access and
navigate the applications.

Faculty Participant 2 recognized G-Suite had its place in a CDC classroom, and his students
could benefit from its uses:

In my classroom, everything moves at an extremely slow pace. There are
students in there who don’t know how to write, let alone appropriately use a
computer. But, a big portion of our curriculum is dedicated life skills. I think,
with diligence and patience, a lot of our students could learn to properly utilize
their G-Suite and bump their learning to the next level. I definitely feel our
regular ed classroom need to be exposed to these tools and be using them on a
daily basis. It may be tough until there are enough devices for everyone, but it’s
still doable.
Student participants also gave some interesting feedback dealing with the use of G-Suite in their everyday learning. Golf Guy said, “I didn’t know that there was so much I didn’t know. Everybody knows the term Google, but I guess I didn't really know how many features were available to me. Now that I do, I hope we use them all in class, and not just like Google Docs and Drive. There is so much more.” Videogame Nerd added, "it's like you can access this stuff from anywhere, so I hope we do a lot of it in school to like practice for when I get to high school. There's a lot of features, and I'm sure there will be way more added." TN Vols Girlie stated, "It's so cool that like everything is connected to one username and password. In elementary school, all we used that for was testing and that kind of stuff. I hope in middle school we can play around with more detailed stuff as we are learning." Fandoms Unite even said, "I guess I knew how cool Google was, but I never thought about using everything for school. I hope when the rest of our Chromebooks gets here, we like dive in and play around with it all to learn what all we can do with it. Trendy Trinity related this to going to high school next school year by saying:

I really hope we play around more with this stuff a lot before I go to high school. In computer class all we do is type. We do practice some of this in library, but we are only in there for nine weeks, and a lot of my friends are in band, so they don't even go to those classes. Knowing how to use all this stuff is like super important, and I think the teachers at the high school will just expect us to know what to do.

Ghostbuster was also thinking into the future when responding about the importance of G-Suite in the classroom:

I know Google is always doing things to change and improve their products. The idea of digital literacy, is again, what I consider to be common sense. I will say,
though, not everyone in my grade has common sense. I mean, if I could use this more I know I could personally dig deeper and play around to figure a lot of it help, especially if I had teachers to help me; but there are way too many kids that really need to see this like every day in every class just to get the basics.

Unicorns Forever added to the theme by stating, "I'm glad we're using Google more, and I want to keep using it. I can't say I've learned new stuff by using it more, but I am figuring out short-cuts and doing things easier without having to ask a teacher for help. That's kinda cool."

The data collected throughout student interviews and faculty surveys indicated a need to include G-Suite in the curriculum of middle school classes. Both, the students and the faculty, agreed it was in the best interest of the students to have this exposure. Students showed interest and ownership of properly using G-Suite in the classroom to increase learning. Faculty expressed a desire to implement these tools in classroom curriculums as well. By all participants agreeing on the impact of G-Suite for Education, it was important to report the commonalities as they related to digital literacy.

Digital Driver’s License Program. The theme of incorporating the Digital Driver’s License (DDL) Program proved to be extremely important for all participants. Faculty participants were potentially interested in any program increasing the ideas of digital citizenship and digital literacy for the students. Specific to the Digital Driver’s License Program, Faculty Participant 1 stated:

I’m interested in anything that can help our students be successful, but I do like this program specifically because it’s endorsed by a state department of education. I’m curious to see what our kids say. If they think this is helpful, I’d like to this incorporated into a related arts class like computer or library. Our students need
exposure to opportunities like this. I hope this ends up being a positive thing, and we can use it in conjunction with our 1:1 platform.

Faculty Participant 2 thought the idea of students obtaining a digital driver’s license was an excellent idea for middle school students:

This program sounds really neat, and it provides ownership to the kids. Instead of telling them all the cannots, this could give them a solid understanding that they can work through at their own pace; and in the end, they have something they have earned. I hope that we can find time to do something like this because I know core content is important but these types of teachable moments are also very important.

Faculty Participant 3 liked the idea of implementing the driver’s license into the curriculum to address responsibility and cyberbullying:

I think this program can really create self-accountability for our students. They need to be responsible for taking care of technology, using it correctly, and knowing how to access information. They also need to know how to communicate with each other. I would like to think if every student were required to get a driver's license in middle school, that fewer students would have to deal issues like cyberbullying. Hopefully, something like this would make the kids more responsible.

In addition to faculty showing interest in including digital citizenship into the middle school curriculum, student participants shared similar thoughts. Alliepaca explained, “this wasn’t, you know, the most entertaining thing, but I see now how this could be a good thing for everyone to have.” Videogame Nerd also stated, “I’m not going to like do this at home when I
could be gaming, but I’d be fine doing this stuff at school. There are like a few things we could learn from it and stuff.” Fandoms Unite said, “this wasn’t the most boring thing I’ve ever had to do. I can see like how this would help us in school and even with like social media.” TN Vols Girlie responded, “I would take the rest of the quizzes about the harder stuff. I mean, it stuff we need to know anyway.”

Other students commented about having exposure at an earlier age. Ghostbuster reflected:

A lot of this stuff was common sense but seeing it all together made sense. I could see if we like got started on all of this in elementary school. We'd probably be better at a lot of stuff and really understand digital citizenship. If we had the chance to review all of this stuff it may make us use class time better.

Golf Guy also said, “something like this could have been cool if we started this before sixth grade. We’d probably be more ready to use our Chromebooks and other stuff in class.” Trendy Trinity added, “if we got to practice this stuff when we were younger, we’d probably like not have as many people in our classes that don’t have a clue what to do. I think the digital driver’s license would be a good thing for everybody.” Unicorns Forever agreed, “it would have been nice to see this a few years ago. Doing this in middle school was okay, and I think we need it, but it’s like starting this in elementary school would have been nice, too.”

Comments relating to the Digital Driver's License (DDL) Program indicated a need for this program to be implemented within the curriculum. Participants felt this instruction was necessary to promote digital citizenship at the middle school level. Some students even expressed an interest to be exposed to this material at a younger age. The personal ownership of
a digital driver's license provided positive perceptions of students becoming responsible digital
citizens to properly utilize devices for classroom learning.

Summary

Chapter 4 discussed the data collection and the data analysis involved in the compilation of this qualitative case study. The research question, “What are the perceptions of enrichment students and digital citizenship in the middle school classroom after engaging in the digital driver’s license (DDL) program?” was answered through data collection and analysis. By re-establishing the setting and demographic population for this study, as well as the outlining the methods involved in collecting data, the researcher was able to ensure credibility and validity throughout the analysis process. The results were organized by three elements of digital citizenship as defined by Mike Ribble (2017b): digital etiquette, digital communication, and digital literacy. Digital etiquette unveiled the themes of enhanced awareness of digital footprint, adopted digital etiquette perspectives, and heightened interest in the bias of ethnocentrism. Defined differences in types of digital communication fully submerged under digital communication. The element of digital literacy offered the commonalities of open access to technology and curriculum modifications fully integrating G-Suite and the Digital Drivers’ License Program. These themes were developed and organized by coding and the use of a debriefer.

Findings from this study provided positive perceptions regarding digital citizenship in middle school learning from, both, the faculty and student participants due to an increased interest in one to world learning. Chapter 5 will discuss the purpose of the study, interpretations of the findings from this qualitative case study as they relate to other research, and
recommendations for action and further action-oriented research regarding digital citizenship in middle school learning.
Chapter 5

Interpretations, Recommendations, and Conclusions

This qualitative case study was constructed to better understand the perceptions of digital citizenship in middle school learning by using Siemens’ (2005) theory of connectivism, theories of digital literacy, and Ribble’s (2017b) elements of digital citizenship. In order to gauge these perceptions, students from the selected school’s enrichment program and selected faculty members were utilized. The Digital Driver’s License (DDL) Program served as a means of an intervention for students to share thoughts from before and after receiving the intervention. Students participated in interviews, faculty responded to surveys, and observational notes were used in order to provide insight regarding how and why digital citizenship plays a role in middle school learning.

Student participants acknowledged a more cohesive understanding of digital citizenship after completing the intervention. The idea of a digital footprint defining their online reputations shaped the idea that they, along with their peers, should demonstrate responsible use of technology. The ownership provided by the digital driver’s license enhanced the opportunity for students to display their skills as digital citizens in and out of the classroom. This opportunity also motivated teachers and students to become more knowledgeable about digital citizenship as more devices entered the classrooms of the selected setting of the study. By taking on more active roles of the elements of digital citizenship, classroom learning could become more productive.

Interpretation of the Findings

Interpretations of the findings were categorized according to the three selected elements of digital citizenship: digital etiquette, digital communication, and digital literacy.
Interpretations from data analysis correlated to previous research involving digital citizenship.

**Digital etiquette.** The element of digital etiquette proved to be an area where the Digital Driver’s License (DDL) Program increased growth and awareness for student and faculty participants. Students and faculty indicated an enhanced awareness of students’ digital footprints, where students were more interested in the long-term effects of their digital footprint. They expressed interest in the responsibility of becoming digital citizens and wanted to make sure they were appropriately interacting in a digital world. These findings aligned with Ribble and Miller’s (2013) publication which argued there should be concerns regarding lack of empathy and emotional connection when interacting online. Furthermore, Bell (2002) addressed this concern by stating not enough instructional time was dedicated to cyberethics; however, there was an increasing awareness and concern related to these behaviors.

The second theme addressed was adopted digital etiquette perspectives. In addition to understanding the relevance of a digital footprint, students and faculty discussed concerns about displaying better digital etiquette habits. Student participants reported by completing the intervention, they had a better understanding of why and how to become digital citizens practicing digital etiquette. These results aligned with Siemens’ (2005) theory of connectivism where citizens in a digital world could connect among multiple forms of communication to appropriately and respectfully share opinions, information, and knowledge in order for others to make informed decisions regarding technology use.

The final theme that emerged under this element was heightened interest in bias of ethnocentrism. Students admitted to bias and wanted to ensure going forward, those biases were not present when communicating with a variety of audiences. They recognized incomplete thoughts, local slang, and short-hand were not effective when communicating with people from
different areas. Instead, complete thoughts, carefully constructed correspondence, and standard formatting helped reduce potential stereotypes from both parties. Similarly, Snyder’s (2016) study also found as students participated in an intervention for establishing digital citizenship, their biases decreased. When this bias was diminished, students better accepted collaboration among peers and on a global level.

**Digital communication.** Digital communication unfolded the theme of defined differences of digital communication. Student and faculty participants discussed differences when communicating to different people. Students were able to differentiate communication styles between friends, peer collaborations, teachers, and people whom they did not know. Issues regarding digital communication were addressed in research by An, Aworuwa, Ballard, & Williams (2008) that determined collaboration as a result of the integration of technologies such as blogging, social networking, and tagging could increase appropriate digital communication. Additionally, Abdelmalak (2015) evaluated Web 2.0 technology for developing learning communities that included Twitter, Google Docs, Skype, and blogs and wikis. The study unveiled the need for students to differentiate between various forms of digital communication. By understanding different types of communication through different mediums and with different groups of people, students have a better opportunity to better understand the importance of respectful and appropriate digital communication. Additionally, Monteux, Vanderlinde, Schellens, and De Marez (2015) reported by interacting in digital learning that knowledge and communication skills were heightened.

**Digital literacy.** Under the element of digital literacy, the themes of open access to technology and curriculum modifications fully integrating G-Suite and the Digital Drivers’ License Program were fully emerged. Students voiced the desire to have more access to
technology and to credible information when in the classroom. Research from Harper and Milman (2015) suggested students having more accessibility had the potential to increase student achievement regardless of background or ability, especially if access to devices were used for specific learning and enrichment opportunities. Another publication from November (2013) reported by understanding how to use device teacher empowerment and student engagement could create a true learning community with more equitable access. Monteux, Vanderlinde, Schellens, and De Marez (2015) also indicated open access to technology created contexts for authentic learning, and could utilize technology for meaningful learning. Comparing research, it became evident that digital communication holds relevance in the middle school curriculum.

In addition to issues regarding open access, the data also showed a need to curriculum modifications were necessary in order to incorporate G-Suite and the Digital Driver’s License Program. Larson, Miller, and Ribble (2009) expressed the need for proper Internet searches, cloud-based storage, technology-based vocabulary, and electronic collaboration for students have the skills to tackle digital literacy, and these had the potential to impact students if properly implemented in core curriculums and applied to life applications. Meyer (2016) expressed the need to teach students to become good digital citizens, and this required extensive curriculums that provided students the proper tools and ethical codes to interact in the digital world. Additionally, Noonoo (2014) reported concerns that digital citizenship, student safety, and appropriate methods of research were not being adequately addressed in the classroom. By incorporating updated curriculums that properly utilize 21st Century skills, students are not only practicing habits of good digital citizenship, they are also equipped with digital literacy skills that will allow them to be success in the future.

Similarities to other studies and published research indicated the findings in this
Qualitative case study were meaningful and held relevance to the growing interests and demand for digital citizenship in middle grades. Ribble (2009) suggested stakeholders advocate and demonstrate responsible technology use. By keeping a positive attitude toward the increases in technology use, students can practice habits of lifelong learning and becomes leaders as digital citizens to break down the barriers of 21st Century technology.

In addition to commonalities among previous research, Interpretations made from the data collection and data analysis guided the recommendations for action in the field, as well the recommendations for further action-oriented research.

**Recommendations for Action**

The following list of recommendations are suggested based on student and faculty participant perceptions of digital citizenship in middle school learning:

1. The Digital Driver’s License (Program) should be implemented as a portion of the middle school curriculum in order to address issues regarding a digital footprint, understandings of barriers of communication between different groups of people, properly caring for and using technology, and understanding the benefits and responsibilities involved when engaging in technology.

2. G-Suite for Education needs to take on a more pressing role in classroom learning. Students and teachers need to understand and utilize the abundance of resources provide for Google, and those resources need to be a part of daily learning in the middle school classroom.

3. Digital citizenship should help mold Acceptable Use Policies (AUPs) rather than have AUPs limit student interactions and access to credible information. Policy reform should promote digital citizenship across the middle school curriculum.
4. Teachers need purposeful professional development to ensure digital learning is appropriately utilized in the classrooms. Such professional development should include, but are not limited to, G-Suite for Education Applications, Digital Citizenship, and integration of digital tools. Increased knowledge among faculty relating to the relevance of digital citizenship is needed to promote meaningful learning.

**Recommendations for Further Action Research**

The following list of recommendations for further action research are based on student and faculty perceptions as they relate to digital citizenship in middle school learning:

1. Additional qualitative research is needed to evaluate perceptions of digital citizenship beyond those of students in the enrichment program. By utilizing a more random sampling, additional perceptions may be noted and more themes may evolve.

2. Research including additional teacher perspectives regarding digital citizenship in middle school learning is needed to report teacher interest in digital learning in the classroom. There is a need to further develop curriculums that incorporate digital citizenship and meet the needs of digital native learning styles.

3. Research relating to student motivation and interest to learning by actively participating in the elements of digital citizenship is needed to develop additional research regarding digital citizenship as it relates to connectivism.
4. Other interventions specific to digital citizenship should be studied to evaluate their effectiveness on the middle school curriculums and perceptions regarding digital citizenship from teachers and students.

5. Further qualitative research about parent/guardian interests and knowledge and digital citizenship is needed to gain additional perspectives. Parent perceptions could play an integral part in students taking on active roles in digital citizenship.

6. A comparison study of this qualitative case study to another setting and demographic population given to the same intervention to compare and contrast results would provide additional perceptions and perspectives to gather more information about digital citizenship in middle school learning.

Conclusions

The use of technology for students in middle grades is rapidly increasing in and outside of the classroom. Potential gaps of understanding and knowledge can be limited through proper instruction of Ribble’s (2017b) elements of digital citizenship. Curriculums including the Digital Driver’s License (DDL) Program can be used to facilitate student learning and the responsibilities associated with interacting in a digital society. From this intervention, teachers and administrators could make action-oriented decisions regarding how to appropriately integrate digital citizenship and the use of technology into a middle school curriculum.

Results from this qualitative case study could promote stakeholders to advocate for curriculum needs and updated policy, promote awareness for professional development opportunities, and most importantly provide perceptions about the importance of digital citizenship as students take ownership throughout learning within a digital platform.
Additionally, the themes uncovered through data analysis from this case study could also be applicable to elementary curriculums.

The findings from this qualitative case study demonstrated by implementing an intervention for educating participants about digital citizenship, students grew as digital citizens and displayed an understanding for its importance at a middle school level. Fully emerged themes included enhanced awareness of digital footprint; adopted digital etiquette perspectives; heightened interest in bias of ethnocentrism; defined differences in types of digital communication; open access to technology; and curriculum modifications fully integrating G-Suite and the Digital Drivers’ License Program.

By adapting instructional practices, all stakeholders hold an opportunity to take action to change classroom learning through a one to world approach, fully encompassing digital citizenships across all core content. Teachers and administrators should utilize the results of this qualitative case study and evolve as digital citizens and promote digital citizenship to all students. These changes from educators’ vantage point need well prepared professional developments and access to continual knowledge in order to promote responsible uses of technology in the classroom. Additionally, these changes should be incorporated across all disciplines throughout the longevity of student learning and not just seen in isolation. The efforts of digital citizenship in the middle school setting must be a collaborative effort from all stakeholders. By working together, positive perceptions of digital citizenship can allow students to behave respectfully and responsibly when engaging in digital learning in and out of the classroom.
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Appendix A: Researcher Confidentiality Agreement

CONFIDENTIALITY AGREEMENT

Name of Participant: __________________________

Name of Guardian: __________________________
(if applicable)

During the course of this qualitative study in collecting data for this research: “Perceptions of Digital Citizenship in Middle School Learning” I, the researcher, will have access to information and record information, which is confidential and should not be disclosed. I acknowledge all information must remain confidential, and that improper disclosure of confidential information could be damaging to the participant.

By signing this Confidentiality Agreement, I acknowledge and agree that:
1. I will not disclose or discuss any confidential information with others, including friends or family.
2. I will not in any way divulge, copy, release, sell, loan, alter or destroy any confidential information except as properly authorized.
3. I will not discuss confidential information where others can overhear the conversation. I understand that it is not acceptable to discuss confidential information even if the participant’s name is not used.
4. I will not make any unauthorized transmissions, inquiries, modification or purging of confidential information.
5. I agree that my obligations under this agreement will continue after termination of the study that I will perform.
6. I understand that violation of this agreement will have legal implications.

By signing this document, I, the researcher, acknowledge that I have read the agreement. I agree to comply with all the terms and conditions stated above. If there are any further questions regarding your confidentiality throughout the duration of this study, please feel free to contact me at ________________________________.

Signature: __________________________   Date: __________________________
Appendix B: Notice of Privacy- Digital Driver’s License Program
Appendix B: Notice of Privacy - Digital Driver’s License Program

Privacy Statement for the Digital Driver’s License

Our Privacy Notice is fueled by our commitment to the following Privacy Principles:

1. We’re deeply committed to creating a safe and secure online environment for you.

2. We do not sell your personal information to third parties. We established ourselves as a not-for-profit organization so that our mission of education and your trust will not be in conflict with a for-profit motive.

3. We strive to provide you with access to and control over the information you give us, and we take the protection of your information very seriously.

4. We take extra precautions for our younger learners, including the ability to restrict access to sensitive, age-appropriate content.

5. We do not advertise. We use your information to provide you with a better learning experience, not to sell you products.

1. Types of Information We Collect

We collect two basic types of information – personal information and anonymous information – and we may use personal and anonymous information to create a third type of information, aggregate information. We collect the following categories of information:

- Registration information you provide when you create an account, including your first name and surname, username (usually email address) and password.

- Information you submit when answering questions in the cases presented in the DDL.

- Your device identifier or IP address, when you visit our sites.

2. How We Collect Your Information

We collect information you provide to when you register with us, log on, and participate in the completion of cases.
3. Use of Your Information

Your information is used to:

- Provide you with the content and services you request
- Communicate with you about your account or transactions with us
- Personalize content and experiences
- Optimize or improve our content, services and operations
- Detect, investigate and prevent activities that may violate our policies or be illegal

4. Sharing Your Information with Other Companies

We will not share your personal information to other companies, ever. Your information is only shared with the organization (e.g. school district and/or school) you connect your account to. At any time, you can change or remove that connection.

We will not process student data for any purpose other than providing, improving, developing, or maintaining the integrity of this service.

We have full expectations that a student’s school and/or district determines the best method of collecting parental permission for use of the content and services. We will not in any case process student data to advertise or facilitate advertising or to create or correct an individual or household profile for any advertisement purposes. We will not sell, disclose, or otherwise process student data for any commercial purpose. This privacy statement certifies, in writing, these guarantees.

5. Your Controls and Your Choices

We provide you the ability to exercise certain controls and choices regarding our collection, use and sharing of your information. You may correct, update your registration account and delete your registration account via email request. You are the owner of your data and determine who (e.g. school district and/or school) gets to see it.

6. Data Security, Integrity and Retention

The security, integrity and confidentiality of your information are extremely important to us. We have implemented technical, administrative and physical security measures that are designed to protect guest information from unauthorized access, disclosure, use and modification. From time to time, we review our security procedures to consider appropriate new technology and methods. Please be aware though that, despite our best efforts, no security measures are perfect or impenetrable, especially if the password you set is easy to guess or is compromised in any way. We will retain your personal information for the length of time needed to fulfill the purposes outlined in this privacy policy unless a longer retention period is required or permitted by law.
Appendix C: Student Letter of Invitation
Appendix C: Student Letter of Invitation

Date: ____________________

Dear [Guardian],

Because your student is enrolled in the Gifted Program, he/she has time each week to participate in enrichment activities. For this reason, I would like to invite your child to participate in my research study regarding digital citizenship. Digital citizenship is defined by Mike Ribble as “the norms of appropriate, responsible technology use.” Reference to this definition and more information about digital citizenship may be found at http://www.digitalcitizenship.net/.

I am a doctoral student at Carson-Newman University, and I am interested in learning and observing the perceptions of digital citizenship in middle school learning. By allowing your child to participate in this study, you will help me identify ways to make all students responsible digital citizens. You will benefit from knowing your child’s efforts may have a positive impact on the entire school. Outcomes from this study will adjust the library curriculum to adequately prepare students to act as model digital citizens.

Students will be interviewed and observed while participating in the Digital Driver’s License Program available at https://otis.coe.uky.edu/DDL/launch.php. Students will use their assigned email addresses to participate, which are protected under the Family Educational Rights Privacy Act (FERPA) and the Children’s Online Privacy Protection Act (COPPA).

If you are willing to allow your child to participate in this qualitative research, please respond with your intent to participate. Please review and sign the attached Student Consent Form; only the last page of this document will need to be returned. I will request your child to sign an additional form as I am giving verbal instructions before beginning the study.

When you and your child have granted consent, I will send a Confidentiality Agreement signed by me, the sole researcher of this design. You will also receive a Notice of Privacy regarding the Digital Driver’s License Program. Upon completion of this study, you will be notified of findings and results.

As an incentive, students choosing to participate will be awarded a pizza party at the conclusion of the study.

Thank you for your consideration, and I look forward to hearing from you! If you have any questions or comments, please do not hesitate to contact me.

Laura M. Holland
Doctor of Education Student
Carson-Newman University
1646 Russell Ave
Jefferson City, TN 37760
lmholland@en.edu
Appendix D: Parent Consent Form for Research
Appendix D: Parent Consent Form for Research

PARENT CONSENT FORM FOR RESEARCH

Your child is invited to take part in a qualitative research study about digital citizenship. The researcher is inviting all students enrolled in the Gifted program to actively participate in the study. This form is part of a process called “informed consent” to allow you to understand this study before deciding whether to allow your child to take part.

This study is being conducted by a researcher named Laura Holland, a doctoral student at Carson-Newman University. You may know already know the researcher as the school’s librarian, but this study is separate from Ms. Holland’s roles and responsibilities within the school.

Background Information:
The purpose of this study is to gage perceptions of digital citizenship in middle school learning.

Procedures:
Your child is invited to participate in this study during the first six weeks of school. Additionally, your child will not miss any core class time, all procedures will take place during assigned enrichment as documented by the school schedule.

If you agree to allow your child to be in this study, your child will be asked to:
1. Participate in the Digital Driver’s License Program
2. Participate in a recorded interview
3. Allow the researcher to observe while interacting with the Digital Driver’s License Program
4. Review all documented evidence for accuracy and correctness.

To better understand the scope of this study sample questions from the interview protocol are provided:
1. How would you describe your knowledge of digital citizenship and readiness prior to the DDL program?
2. How would you define yourself as an active digital citizen now that you have completed the DDL program?
3. If every student and faculty were properly educated on matters of digital citizenship and implementing technology, what would you envision as the perfect one to world and 21st Century classroom? No detail is too small for this response; please be creative and descriptive with your response.
4. Summarize what it means to be a digital citizen and how your personal definition applies to your uses of technology. Why do you feel this way?
5. Are there any other thoughts or comments you would like to add before we conclude this interview?

Voluntary Nature of the Study:
This study is voluntary. You are free to accept or turn down the invitation and, of course, your child’s decision is also an important factor. After obtaining parent consent, the researcher will explain the study and let each child decide if he or she wishes to volunteer. No one within the school will treat you or your child differently if you or your child decides to not be in the study. If
you decide to consent now, you or your child can still change your minds later. Your child can stop at any time.

**Risks and Benefits of Being in the Study:**
Participating in this type of study may involve minimal risk of the minor discomforts that your child might encounter in daily life, such as actively conversing in interviews and challenging him/herself to become a better digital citizen. Being in this study, however, will not pose risk to your child’s safety or well-being.

Benefits of this study include transforming the digital culture at the school and becoming a digital citizenship by understanding digital etiquette, digital communication, and digital literacy.

**Payment:**
While there is no payment for participating in the study, please remember that students choosing to partake will be awarded a pizza party at the end of the study.

**Privacy:**
Reports coming out of this study will not share the identities of individual participants or their families. Details that might identify participants, such as the location of the study, also will not be shared. The researcher will not use your child’s personal information for any purpose outside of this research project. Data will be kept secure by storing all artifacts in Google Drive, which is password protected. All hard copy evidence will be immediately placed in Google Drive and then shredded. Additionally, all participants will receive a coded number in lieu of names. Data will be kept for a period of time, as required by Carson-Newman University. After the designated time frame, all information will be permanently deleted from the researcher’s Google Drive; there will be no hard copy information at that time.

Upon completion of this form and the Assent Form from your child, you will receive a signed copy of the researcher’s Confidentiality Agreement as well as a Notice of Privacy from the Digital Driver’s License Program.

The only time the researcher would disclose your child’s name or information would be if the researcher learns about possible harm to your child or someone else.

**Contacts and Questions:**
You may ask any questions you have now. Or if you have questions later, you may contact the researcher via email at lmholland@cn.edu.

Carson-Newman University’s IRB approval number for this study is ____________________________ and is set to expire on ____________________________.

**Obtaining Your Consent**
If you feel you understand the study well enough to make a decision about it, please indicate your consent by signing the last page of this document.
Signed Parent Consent Document

IF YOUR CHILD IS PARTICIPATING, PLEASE SIGN AND RETURN THIS PORTION OF THE CONSENT FORM. Please keep the remainder of this document for your records. I will send you a copy of your Signed Parent Consent Document as well.

Printed Name of Parent/Guardian

Printed Name of Child

Date of Consent

Parent/Guardian Signature

Researcher Signature
Appendix E: Student Assent Form for Research
Appendix E: Student Assent Form for Research

STUDENT ASSENT FORM FOR RESEARCH

Hello, my name is Ms. Holland, and I am doing a research project to learn about digital citizenship. I am inviting you to join my project. I am inviting all students enrolled in the Gifted Program at this school to be involved with this study. I am going to read this form with you. I want you to learn about the project before you decide if you want to be in it.

WHO I AM:
I am a student at Carson-Newman University, and I am working on my doctoral degree.

ABOUT THE PROJECT:
You are invited to participate in this study during the first six weeks of school. Additionally, you will not miss any core class time, all procedures will take place during assigned enrichment as documented by the school schedule.

If you agree to participate in this study, you will be asked to:
1. Participate in the Digital Driver's License Program
2. Participate in a recorded interview
3. Allow the researcher to observe while interacting with the Digital Driver’s License Program
4. Review all documented evidence for accuracy and correctness.

To better understand the scope of this study sample questions from the interview protocol are provided:
1. How would you describe your knowledge of digital citizenship and readiness prior to the DDL program?
2. How would you define yourself as an active digital citizen now that you have completed the DDL program?
3. If every student and faculty were properly educated on matters of digital citizenship and implementing technology, what would you envision as the perfect one to world and 21st Century classroom? No detail is too small for this response; please be creative and descriptive with your response.
4. Summarize what it means to be a digital citizen and how your personal definition applies to your uses of technology. Why do you feel this way?
5. Are there any other thoughts or comments you would like to add before we conclude this interview?

IT’S YOUR CHOICE:
You don’t have to be in this project if you don’t want to. If you decide now that you want to join the project, you can still change your mind later. If you want to stop, you can.
Being in this project might make you tired or stressed. For example, you will be asked to actively converse in interviews and challenge yourself to become a better digital citizen. Being in this study, however, will not pose risk to your safety or wellbeing.

Benefits of this study include transforming the digital culture at the school and becoming a digital citizen by understanding digital etiquette, digital communication, and digital literacy. While there is no payment for participating in the study, please remember that students choosing to partake will be awarded a pizza party at the end of the study.
PRIVACY:
Everything you tell me during this project will be kept private. That means no one else will know your name or what answers you gave. The only time I have to tell someone is if I learn about something that could hurt you or someone else.

ASKING QUESTIONS:
You can ask me any questions you want now. If you think of a question later, you or your parents can reach me at lmholland@cn.edu.

IF YOU WOULD LIKE TO VOLUNTARILY PARTICIPATE IN THIS PROJECT PLEASE SIGN THE BOX BELOW.

Printed Name (First and Last)

Student Signature

Date of Consent

Researcher Signature
Appendix F: Faculty Letter of Invitation
Appendix F: Faculty Letter of Invitation

Dear [Faculty Member],

I am writing this email because I would like to invite you to participate in my research study regarding digital citizenship. Digital citizenship is defined by Mike Ribble as “the norms of appropriate, responsible technology use.” Reference to this definition and more information about digital citizenship may be found at http://www.digitalcitizenship.net/.

In addition to being your school librarian, I am also a doctoral student at Carson-Newman University. I am interested in learning and observing the perceptions of digital citizenship in middle school learning. By agreeing to voluntarily participate in this study, you will help me identify ways to make all students responsible digital citizens. You will benefit from knowing your efforts may have a positive impact on the entire school. Outcomes from this study will adjust the library curriculum to adequately prepare students to act as model digital citizens.

Invited faculty will be surveyed to collect input regarding digital citizenship. Faculty will use their assigned email addresses to participate, as well as Google Docs and Google Forms.

If you are willing to participate in this qualitative research, please respond electronically with your intent to participate. Please review the attached Consent Form. If you choose to participate, please respond to this email with the phrase: “I consent.”

When you have granted consent, I will send a Confidentiality Agreement signed by me, the sole researcher of this design. Upon completion of this study, you will be notified of findings and results.

As an incentive, faculty choosing to participate will draw for a $25 gift card from the place of the winner’s choice. Only three faculty have been invited to participate, so everyone has a fair chance to win. The drawing will take place at the end of the study.

Thank you for your consideration, and I look forward to hearing from you! If you have any questions or comments, please do not hesitate to email me.

Laura M. Holland  
Doctor of Education Student  
Carson-Newman University  
1646 Russell Ave  
Jefferson City, TN 37760  
lmholland@cn.edu
Appendix G: Faculty Consent Form for Research
Appendix G: Faculty Consent Form for Research

FACULTY CONSENT FORM FOR RESEARCH

You are invited to take part in a research study about digital citizenship. The researcher is inviting faculty in leadership roles to participate in the study. This form is part of a process called “informed consent” to allow you to understand this study before deciding whether to take part.

This study is being conducted by a researcher named Laura Holland, a doctoral student at Carson-Newman University. You may know already know the researcher as the school’s librarian, but this study is separate from Ms. Holland’s roles and responsibilities within the school.

Background Information:
The purpose of this study is to gauge perceptions of digital citizenship in middle school learning.

If you agree to be in this study, you will be asked to:
1. Participate in a survey via Google Forms.
2. Review all documented evidence for accuracy and correctness.

To better understand the scope of this study sample questions from the survey protocol are provided:
1. How would you describe your knowledge of digital citizenship?
2. How would you define student knowledge of digital citizenship?
3. What are your overall perceptions of digital citizenship? Expand and elaborate.
4. What are your overall perceptions of incorporating a digital citizenship curriculum into middle school learning?
5. Do you feel students are equipped to responsibly engage in digital citizenship when using G-Suite for Education? How and Why? Consider all applications of G-Suite: Gmail, Drive, Docs, Sheets, Slides, Hangout, etc.

Voluntary Nature of the Study:
This study is voluntary. You are free to accept or turn down the invitation. No one at this school will treat you differently if you decide not to participate in the study. If you decide to be in the study now, you can still change your mind later. You may stop at any time.

Risks and Benefits of Being in the Study:
Participating in this type of study may involve minimal risk of the minor discomforts that you might encounter in daily life, such as actively responding to survey questions and challenging students to become better digital citizens. Being in this study, however, will not pose risk to your safety or well-being.

Benefits of this study include transforming the digital culture at the school and learning to promote digital citizenship by understanding digital etiquette, digital communication, and digital literacy.

Payment:
While there is no payment for participating in the study, please remember that faculty choosing to participate will be entered in a drawing for a $25 gift card.
**Privacy:**
Reports coming out of this study will not share the identities of individual participants or their families. Details that might identify participants, such as the location of the study, also will not be shared. The researcher will not use your personal information for any purpose outside of this research project. Data will be kept secure by storing all artifacts in Google Drive, which is password protected. All hard copy evidence will be immediately placed in Google Drive and then shredded. Additionally, all participants will receive a coded number in lieu of names. Data will be kept for a period of time, as required by Carson-Newman University. After the designated time frame, all information will be permanently deleted from the researcher’s Google Drive; there will be no hard copy information at that time.

Upon completion of this form, you will receive a signed copy of the researcher’s Confidentiality Agreement.

The only time the researcher would disclose your name or information would be if the researcher learns about possible harm to you or someone else.

**Contacts and Questions:**
You may ask any questions you have now. Or if you have questions later, you may contact the researcher via email at lmholland@cn.edu.

Carson-Newman University’s IRB approval number for this study is ______________________ and is set to expire on ______________________.

Please print or save this form for your records.

**Obtaining Your Consent**
If you feel you understand the study well enough to make a decision about it, please indicate your consent to voluntarily participate by replying to this email with the words: “I consent.”
Appendix H: Student Interview Protocol
Appendix H: Student Interview Protocol

STUDENT INTERVIEW PROTOCOL

Introduction and Background
Hello and, I hope you are having a wonderful day. Thank you for agreeing to better help me understand perceptions of digital citizenship in middle school learning by participating in the Digital Driver’s License Program. We are going to start discussing what you learned throughout the course. This interview may take between 20-45 minutes, and if needed we can split the interview among multiple days. I have a list of questions to guide us, but it is my hope that we can explore further conversation beyond this questioning.

Please know that all information will be kept confidential, and I encourage you to ask questions and converse in meaningful conversation throughout this interview. Remember, too, you have the opportunity to review documentation from this discussion for accuracy and correctness.

Don’t forget: This study is voluntary, so you may opt out at any point.

Do you have any questions for me before we get started?

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? Perfect! Let’s begin, shall we?

Time(s) of Interview:

Date(s):

Method: Face-to-face interview

Interviewer: Laura Holland, doctoral student at Carson-Newman University

Interviewee:

Interviewee Title: Student

Interview Questions
At this time let us focus on your experiences, ideas, and perceptions regarding digital citizenship.

1. How would you describe your knowledge of digital citizenship and readiness prior to the DDL program?

2. How would you define yourself as an active digital citizen now that you have completed the DDL program?

3. What are your overall thoughts about the DDL program? Think as if you were describing to your best friend.

4. How did the DDL program affect your becoming a responsible digital citizenship?
5. Describe your understanding of collaboration before the DDL program.

6. What are the main differences in your understanding now that you have knowledge of digital citizenship? Why do you feel there is a difference?

7. Do you feel more willing to act as a digital citizen when engaging in technology during class time? Why?

8. Do you feel more willing to act as a digital citizen when engaging in technology outside of class and school? Why?


10. How would you describe your teachers’ knowledge of use of technology?

11. What barriers come to mind when you think of technology and digital citizenship in the classroom? Consider knowledge, availability, purpose of technology, connections to learning, and anything else you feel may relate.


13. Explain other tools that you could use, or that teachers already use, in the classroom to learn and display digital citizenship.

14. How do digital etiquette, digital communication, and digital literacy relate to G-Suite for Education and other tools for learning in the classroom?

15. If every student and faculty were properly educated on matters of digital citizenship and implementing technology, what would you envision as the perfect one to world and 21st Century classroom? No detail is too small for this response; please be creative and descriptive with your response?

16. Summarize what it means to be a digital citizen and how your personal definition applies to your uses of technology. Why do you feel this way?

17. Are there any other thoughts or comments you would like to add before we conclude this interview?

**Interview Wrap-Up**
That concludes our interview. I want thank you for your hard work and effort while assisting me with my research study. I am confident that your help will promote digital citizenship within the school!

Once again, thank you for your help today and throughout this study! We will touch base soon so that you may perform a member-check regarding this interview.
Appendix I: Faculty Survey Protocol
Appendix I: Faculty Survey Protocol

FACULTY SURVEY PROTOCOL

Introduction and Background
Hello and, I hope you are having a wonderful day. Thank you for agreeing to better help me understand perceptions of digital citizenship in middle school learning by participating in the Digital Driver’s License Program. This survey will take around 30 minutes. Please finish this survey in a single setting. The survey includes a list of questions to begin open dialogue, and I hope that these initial questions will provide supplemental questions to follow.

Please know that all information will be kept confidential, and I encourage you to thoughtfully reflect on each question before answering in a complete sentence. Feel free to use bullet points or any other method to keep responses clear and concise. Remember, too, you have the opportunity to review documentation from this survey data for accuracy and correctness.

This study is voluntary, so you may opt out at any point.

Do you have any questions for me before you get started? If so, come see me before clicking on the Google Forms link to begin this survey.

[Insert Link]

Time of Survey: Time Stamped by Google Forms

Date:

Method: Digital Survey

Name:

Title: Faculty

Survey Questions
Answer all questions carefully and thoughtfully. Use complete sentences and correct grammar. Please take a moment before submitting to proofread responses.

1. How would you describe your knowledge of digital citizenship?
2. How would you describe your knowledge of use of technology?
3. How would you define student knowledge of digital citizenship?
4. How would you define student knowledge of use of technology?
5. Do you feel by exemplifying characteristics of a digital citizen students would be more responsible with using technology in the classroom? Why?
7. What are your overall perceptions of incorporating a digital citizenship curriculum into middle school learning?

8. What barriers come to mind when you think of technology and digital citizenship in the classroom? Consider knowledge, availability, purpose of technology, connections to learning, and anything else you feel may relate.

9. Do you feel students are equipped to responsibly engage in digital citizenship when using G-Suite for Education? How and Why? Consider all applications of G-Suite: Gmail, Drive, Docs, Sheets, Slides, Hangout, etc.

10. What do you feel are weaknesses for students when using G-Suite for Education?

11. Explain other tools that you could use, or that you already use, in the classroom to promote digital citizenship?

12. How do digital etiquette, digital communication, and digital literacy relate to G-Suite for Education and other tools for learning in the classroom?

13. What are your thoughts on professional developments focusing on the use of technology in the classroom as they apply to your becoming more knowledgeable?

14. What are your thoughts on professional developments focusing on the use of technology in the classroom as they apply to students becoming more knowledgeable?

15. What types of technology training would you require to become a model digital citizenship and technology guru? Don’t be embarrassed, and please do tell all!

16. If every student and faculty were properly educated on matters of digital citizenship and implementing technology, what would you envision as the perfect one to world and 21st Century classroom? No detail is too small for this response; please be creative and descriptive with your response?

17. Are there any other thoughts or comments you would like to add before you submit this survey? Additional questions may follow, after all survey results have been collected.

Survey Wrap-Up
This is the end of your survey. I want thank you for your assistance with my research study. I am confident that your help will promote digital citizenship within the school! If other questions evolve from this survey, I will let you know.

Once again, thank you for your help! We will touch base soon so that you may perform a member-check regarding this survey.