EXAMINING HOW TEACHERS DEFINE AND INTEGRATE DIGITAL CITIZENSHIP INTO CORE CONTENT AREA CURRICULUM

by

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ABSTRACT

LINDSEY HEATHER HALL RAMSEY. Examining How Teachers Define and Integrate Digital Citizenship to Core Content Area Curriculum.
(Under the direction of DRS. BETH OYARZUN & DREW POLLY)

This study explored two aspects of K-12 core content area teachers' experiences with digital citizenship through the Connectivism lens (Siemens, 2005). First, it explored how teachers instruct students on digital citizenship topics, including how they define digital citizenship and integrate it into their core content area curriculum. Second, it examined teachers' experiences and needs regarding digital citizenship professional development. This study followed a basic qualitative approach and used interviews with a follow-up questionnaire to gather data. Participants' responses were analyzed using Fereday and Muir-Cochrane's (2006) six-step, hybrid approach of inductive and deductive coding and theme development. Findings and discussion were presented through the learning theory of Connectivism. Information on how core content area teachers define digital citizenship was summarized using the S3 Guiding Principles from Ribble and Park (2019). Information on teachers' experiences integrating digital citizenship into their core content curriculum revealed five major themes: Responsibility, Student Behavior, News & Media Literacy, Non-Cognitive Competencies, and Technology Use. Findings related to professional development experiences were presented through five broad themes: Personal Learning Networks, Parenting & Family, Self-Exploration, Technology Facilitators & Other Technology Champions, and Participating in the Digital World. Findings related to teachers' professional development needs regarding integrating digital citizenship into their core content curriculum were summarized through three themes: making this content relevant and authentic for their students, raising awareness among their peers to build a community around teaching digital citizenship, and identifying resources to integrate this subject matter into their curricula.

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I would be remiss in not mentioning my family and friends, who have provided unwavering love and support throughout my career. My parents, Jeff and Wendy Hall, have always encouraged me to dream big, and without that, I wouldn't be here. To Stephen, thank you for keeping my spirits high, my tummy full, and my glass overflowing. Listing the rest of you would make this acknowledgment as long as this dissertation, but please know that I love you all.

DEDICATION

In loving memory and honor of my MawMaw, Pansy Sellers, who taught me the most important lesson on perseverance–it'll feel better when it quits hurtin'.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1: INTRODUCTION

Digital Citizenship is an increasingly important topic today because of the growing reliance on technology for users both in and out of school. The number of internet users worldwide has increased exponentially since 2000 (Miniwatts Marketing Group, 2023), with an estimated 67.9% of the world's population accessing the internet and a staggering 93.4% of North America's population online. Digital citizens, as described by the International Society for Technology in Education [ISTE] (2016b), "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" ("Digital Citizens" section). With so many internet users worldwide and the exponential increase of internet users in the past 21 years, ensuring that users are strong digital citizens is more important than ever.

Even with such a high percentage of people in North America having access to the internet, there continues to be a digital divide in the United States and around the world. Historically, the digital divide has been described as "the gap between students who had access to the Internet and devices at school and home and those who did not" (Office of Educational Technology, 2017, p. 7). Although the gap in schools is shrinking, and 99% of schools in the United States have fiber internet powerful enough to provide bandwidth for every classroom, an estimated 12 million students still live without reliable internet access at home (EducationSuperHighway, 2019; Tate, 2021). Because so many students struggle with accessing the internet outside of school, it is logical for schools to teach students how to use it for learning where they do have internet access (Fox & Jones, 2019). Teachers must also understand digital citizenship to educate students on our ever-changing digital world. Educators need the skills to prepare students for the dangers internet users face online and the positive possibilities that exist.

As technology allows for learning and connecting with others in and out of school, students should see these skills modeled often and have opportunities to practice online behaviors (Buchholz et al., 2020; Gleason & von Gillern, 2018; Szakasits, 2018). This study focused on core content area teachers who teach subjects including literacy, science, social studies, and math. It examined their professional development experiences with digital citizenship and investigated how these teachers integrate digital citizenship themes into their core content area classes to make this subject meaningful for students.

Statement of the Problem

Many of today's racially and ethnically diverse school-aged students, born between the early-2000s and late-2010s, have grown up with technology at their fingertips. These students cross two generational groups, Generation Z, born between 1996 and 2012, and the newly formed Generation Alpha, born after 2013 (Schwieger & Ladwig, 2018; Kaplan-Berkley, 2021). Many of these students have had unfettered access to technology in ways no previous generation has experienced (Rue, 2018). These students are often called digital natives because they were born into a world where technology is almost ubiquitous. Adults expect these students to know more about technology than previous generations, but Judd (2018) argues that this is only sometimes true. This disconnect has been an ongoing problem as Selwyn (2009) observed over ten years ago that "in reality many young people's engagement with technology is often far more passive, solitary, sporadic and unspectacular" both at home and school (p.372). The Office of Educational Technology (2017) addressed this issue in their National Education Technology Plan Update, noting that the new digital divide is between how students use technology instead of how students access technology. The plan addresses "learners who are using technology in active, creative ways to support their learning and those who predominantly use technology for

passive content consumption" (Office of Educational Technology, 2017, p. 7). This misunderstanding of how students use technology negatively impacts teachers' perceptions of what students understand regarding technology use (Selwyn, 2009; Office of Educational Technology, 2017; Judd, 2018).

Technology is progressing faster than our society can understand and adapt to changes. According to Nestik et al. (2018), this change "increases the demand for a conscious, reflexive attitude of society towards the technologies and its management" (p. 270). Although they may not be the digital natives some teachers expect them to be, today's students possess some characteristics that will prepare them for this rapidly changing environment. Schwieger and Ladwig (2018) used data from surveys between 2014 and 2017 to identify the characteristics of Gen Z learners. These characteristics commonly include valuing trust and fairness, having an entrepreneurial and self-sufficient spirit, wanting personalized online experiences, and needing to tell stories and connect with others. Gen Z learners are also creative, goal-oriented, hands-on, multitaskers, and pragmatic. This generation of students recognizes that technology is constantly changing and can adapt to those changes. They use these platforms to stay engaged with important issues and seek change in areas where change is needed (Rue, 2018; Schwieger & Ladwig, 2018). However, although they are somewhat comfortable with the technology, these learners still need support from educators to prepare them for a highly digital and rapidly changing future (Selwyn, 2009).

Creating knowledgeable digital citizens is one way to bridge the gap between how students currently use technology and how they will need to use technology to prepare for the future. Ribble et al. (2004) define digital citizenship and the nine elements as "the norms of behavior with regard to technology use [with the nine elements] as a way of understanding the

complexity of digital citizenship and the issues of technology use, abuse, and misuse" (p. 7). Ribble and Bailey's (2007) Nine Elements of Digital Citizenship acknowledge areas addressed in previous literature related to the topic. The nine elements, as described by Ribble and Bailey, are

1. Digital Access: full electronic participation in society.
2. Digital Commerce: the buying and selling of goods online.
3. Digital Communication: the electronic exchange of information.
4. Digital Literacy: the capability to use digital technology and knowing when and how to use it.
5. Digital Etiquette: the standards of conduct expected by other digital technology users.
6. Digital Law: the legal rights and restrictions governing technology use.
7. Digital Rights and Responsibilities: the privileges and freedoms extended to all digital technology users, and the behavioral expectations that come with them.
8. Digital Health and Wellness: the elements of physical and psychological well-being related to digital technology use.
9. Digital Security: the precautions that all technology users must take to guarantee their personal safety and the security of their network (Ribble & Bailey, 2007, p. 10).

These nine elements are the basis of much of the current research on digital citizenship, including the ISTE standard for Digital Citizens. More recently, Ribble and Park (2019) adapted these elements into three guiding principles for students called "Safe, Savvy, and Social (or S3)" (p. 37). Table 1 describes each of these principles and provides examples of those principles in action.

Table 1

S3 Guiding Principles with Elements and Examples

Guiding Principle	Related Elements	Headline Examples
Safe: Protect Yourself and Protect Others	Digital rights and responsibilities Digital security Digital health and wellness	"Rising rates of depression and anxiety in wealthy countries like the U.S. may be a result of our brains getting hooked on the neurotransmitter associated with pleasure" (Lembke, 2021, August 13).
Savvy: Educate Yourself and Educate Others	Digital communication Digital literacy Digital commerce	"Disinformation campaigns often directly go after young users, steering them toward misleading content. A 2018 Wall Street Journal investigation found that YouTube's recommendation algorithm, which offers personalized suggestions about what users should watch next, is skewed to recommend videos that are more extreme and far-fetched than what the viewer started with. For instance, when researchers searched for videos using the phrase "lunar eclipse," they were steered to a video suggesting that Earth is flat" (Wenner Moyer, 2022, February 1).
Social: Respect Yourself and Respect Others	Digital access Digital etiquette Digital law	"The decision to reverse net neutrality impacts online speed and access to content, allowing ISPs now to block or slow down certain websites or types of content and show preferential treatment to others" (Harris, 2018).

Note. Adapted from *The Digital Citizenship Handbook for School Leaders: Fostering Positive Interactions Online* by M. Ribble and M. Park, 2019, International Society for Technology in Education. Copyright 2019 by International Society for Technology in Education. Adapted from *Digital Citizenship in Schools* by M. Ribble and G. Bailey, 2007, International Society for Technology in Education. Copyright 2007 by International Society for Technology in Education.

This study explored two broad aspects of teachers' experiences with digital citizenship. First, it explored how teachers instruct students on digital citizenship topics. There are a variety of ways learning occurs in schools including formal, informal, planned, and unplanned instruction (Chen & Bryer, 20212; Bourke et al., 2018; Hyun & Marshall, 2003). All of these methods can be used as powerful learning opportunities for students on digital citizenship. Table 2 provides some examples of the ways in which digital citizenship instruction could take place.

Table 2

Instructional Examples of Teaching Digital Citizenship

Type of Instruction	Examples in Practice
Formal & Planned	Teaching a lesson from the Common Sense Education Digital Citizenship Curriculum Hosting a school wide assembly to talk about cyberbullying
Formal & Unplanned	Taking a moment in the middle of a science lesson to discuss finding reliable sources online Pausing class to discuss digital distractions students face while working independently
Informal & Planned	Starting the class meeting by discussing an argument that happened the previous week on a class discussion board Calling a group of students together at the end of the school day to discuss suspected sharing of inappropriate photos
Informal & Unplanned	Overhearing a group of students discuss a friend who was being targeted online and joining the conversation to provide resources for the student and their friend Modeling how to find copyright free music for a student presentation to a small group

This study also looked at teachers' professional development experiences with digital citizenship to investigate how they learned about the topic and how the professional development impacted the way they teach the topic in their classrooms. Studies on professional development have grown since the mid-1990s when researchers realized that there was no standard of best-

practices for high quality professional development. Garet et al. (2001) identified three structural features and three core features of professional development. Structural features included form (e.g., study group, research project, conference, etc.), duration (how long was the activity), and participation (e.g., collective or individual). The structural features were content focus (e.g., how did the activity increase content knowledge), active learning (e.g., how were teachers engaged in meaningful ways), and coherence (e.g., was ongoing engagement encouraged). Work in this area determined that high-quality teacher professional development is needed to improve schools (Garet et al., 2001; Borko, 2004). Adding to the growing work on high-quality professional development, the Every Student Succeeds Act (2015) defined professional development as activities that provide educators "with the knowledge and skills necessary to enable students to succeed in a well-rounded education and to meet the challenging State academic standards [and] are sustained (not stand-alone, 1-day, or short-term workshops), intensive, collaborative, job-embedded, data-driven, and classroom focused" (p. 295).

Theoretical Framework

To better understand digital citizenship and its relevance to students and educators in school, it is helpful to consider George Siemens' theory of connectivism. Connectivism proposes that learning is "actionable knowledge" and focuses on "connecting specialized information sets, and the connections that enable us to learn more are more important than our current state of knowing" (Siemens, 2005, "Connectivism" section). Connectivism recognizes that available information is continually growing and changing and that it is essential for learners to recognize when this happens. It also acknowledges that we are constantly surrounded by information, and we must continuously determine what is necessary and relevant. Siemens (2005) offers eight principles of connectivism that are relevant to digital citizenship:

1. Learning and knowledge rests in diversity of opinions.
2. Learning is a process of connecting specialized nodes or information sources.
3. Learning may reside in non-human appliances.
4. Capacity to know more is more critical than what is currently known.
5. Nurturing and maintaining connections is needed to facilitate continual learning.
6. Ability to see connections between fields, ideas, and concepts is a core skill.
7. Currency (accurate, up-to-date knowledge) is the intent of all connectivist learning activities.
8. Decision-making is itself a learning process ("Principles of Connectivism" section).

Although it is not crucial for students to understand the learning theory, educators should see the connection between these ideas of connecting information in meaningful ways and digital citizenship themes. This study used connectivism as a theoretical framework to improve understanding of the relevance of instruction on digital citizenship in the core content area classroom and help shed light on how digital citizenship prepares students to be active participants in a connectivist society.

Purpose

The aim of this study on core content area teachers in subjects such as literacy, science, social studies, and math experiences with digital citizenship was twofold. This study examined how these teachers integrate digital citizenship topics into core content area curriculum. It also looked at the impact of professional development opportunities on their understanding of digital citizenship and classroom integration. The researcher undertook this study to help school leaders and teacher educators: 1) better understand how students learn about digital citizenship concepts

in their core content area classes, 2) describe the impact of professional development experiences and identify areas for growth regarding digital citizenship.

Research Questions

This study addressed the following research questions:

1. How do core content area teachers define digital citizenship?
2. What are teachers' experiences integrating digital citizenship into their core content curriculum?
3. How have teachers' professional development experiences impacted the integration of digital citizenship into core content area subjects?
4. What professional development opportunities do teachers need regarding integrating digital citizenship into their core content curriculum?

Research Methodology and Design

This study used a basic qualitative approach to gain insight into the research questions by exploring educators' experiences teaching digital citizenship lessons to students. Basic qualitative research aims to "understand how people make sense of their lives and experiences" (Merriam & Tisdell, 2014, p. 24). Basic qualitative research incorporates methods and techniques from various qualitative methodologies as long as they align with the purpose of the study and the research questions. This research approach was appropriate for this study because it sought to understand teachers' subjective experiences with digital citizenship in their classrooms (Percy et al., 2015).

Because the onus for teaching digital citizenship is often placed on technology teachers, school librarians, and other elective teachers this study sought to use core content area teachers because they spend the most time with students and they have the most opportunity to make

digital citizenship relevant to students (Hollandsworth et al., 2011; Phillips and Lee, 2019). In North Carolina, the Department of Public Instruction provides essential standards for all subject areas that schools are required to teach. However, scheduling and graduation mandates are left to local educational agencies. One local district requires that students earn 24 credits for graduation, and 63% of those credits are in core content area subjects (Charlotte-Mecklenburg Schools, 2022; North Carolina Department of Public Instruction, n.d.b). This means that the majority of instructional time is spent in core content area subjects like literacy, science, social studies, and math.

This study used a criterion sampling of 11 educators from the southeastern United States. The study's inclusion requirements comprised of being a current or former core content area teacher with prior experience teaching lessons from a digital citizenship curriculum to students. The researcher invited qualifying participants to partake in a semi-structured interview and an optional follow-up questionnaire to add any additional insights on the subject to the interview data. Because the questionnaire was optional, the data collected from the questionnaire was coded with the interview data, not separately. The six participants who completed the interview and the questionnaire were entered into a drawing to receive one of five $20 gift cards. All 11 interviews were transcribed and imported into Dovetail (https://www.dovetailapp.com), a web-based qualitative data analysis software, along with responses from the six completed questionnaires. The data was deductively coded using a priori codes based on Ribble and Bailey's (2007) Nine Elements of Digital Citizenship and the ISTE (2016b) Digital Citizenship standard for students. The researcher reviewed the data again. Additional codes were inductively identified, added to the program, and labeled in the transcript for each participant. From here, the

researcher interpreted the themes using the research questions and finalized the thematic data analysis process.

Delimitations and Assumptions

Although many studies focus on digital citizenship and the various elements that fall under the topic, such as cyberbullying or digital literacy, this study looked at the topic as a whole and not necessarily the individual elements. During the COVID-19 pandemic that forced schools worldwide to switch to emergency remote learning with little planning time, digital citizenship quickly came to the forefront of many educators' and parents' minds. This study took place after schools were back to in-person instruction, so teachers' experiences with this topic may be different than they would have been before March 2020.

Participants were delimited to a group of classroom teachers with experience with digital citizenship through professional development or packaged curriculums. This means that many educators were excluded since they have never explicitly taught Digital Citizenship. They were not included because the researcher wanted to see how participants with prior knowledge of digital citizenship integrated it into their curriculum outside of stand-alone lessons. The level (i.e., elementary, middle, or high school) of the teachers was not factored into this study. Participants had experience from various educational organizations, including public, independent, and charter schools. Additionally, this study focused on teachers in one or more core content area subjects such as literacy, science, social studies and math. This study did not focus on other educators who may integrate digital citizenship topics into their classes, such as librarians, career and technical educators, or visual and performing arts teachers because digital citizenship topics are sometimes included as a separate topic in the standards they are expected to teach.

This study assumed that teachers were open and honest about integrating digital citizenship into their core content area curriculum. However, it also recognized that teachers might be unaware of how they address digital citizenship topics with their students. They may not have shared certain activities even if they align with the digital citizenship topics explored here.

Definition of Terms

Definitions of terms salient to this research are as follows:

21st Century Skills. A set of competencies that schools teach to prepare students for future success. Some skills include communication, collaboration, critical thinking, and creativity (Battelle for Kids P21 Framework for 21st Century Skills, n.d.)

Core content area. Subjects such as literacy (including reading and writing), science, social studies, and math (Every Student Succeeds Act, 2015).

Core content area teacher. Includes teachers of one or more core content areas. For example, a third grade teacher who teaches all subjects to their students or a ninth grade biology teacher.

Connectivism. Learning is "actionable knowledge" and focuses on "connecting specialized information sets, and the connections that enable us to learn more are more important than our current state of knowing" (Siemens, 2005, "Connectivism" section).

Curriculum integration. “Meaningful learning organized around issues important to teachers and students [that includes a] student-centered approach, grounded in democracy and enacted in ways that support students academically and affectively” (Wall & Leckie, 2017, p. 36 & 38).

Digital citizenship. “The norms of behavior with regard to technology use [with the nine elements] as a way of understanding the complexity of digital citizenship and the issues of technology use, abuse, and misuse” (Ribble et al., 2004, p. 7).

Professional development. Activities to provide educators "with the knowledge and skills necessary to enable students to succeed in a well-rounded education and to meet the challenging state academic standards [and] are sustained (not stand-alone, 1-day, or short-term workshops), intensive, collaborative, job-embedded, data-driven, and classroom focused" (Every Student Succeeds Act, 2015, p. 295).

Organization of the Study

This dissertation contains five chapters. Chapter one introduced the topic, provided information about why digital citizenship needs to be studied, and provided background information that will give context for the remainder of this study. This chapter also presented the purpose and research questions this dissertation addresses. Chapter one included a high-level overview of the study's methodology.

Chapter two contains an in-depth review of the literature exploring previous digital citizenship research. It explores a variety of definitions and frameworks available on the topic and laws and teaching standards related to digital citizenship. This chapter will analyze the importance of teaching digital citizenship, implementation challenges, and professional development related to digital citizenship. Chapter two will conclude with an overview of the learning theory of connectivism, which frames this study.

Chapter three will specify this study's methodology and design, including participant selection, data collection, and analysis. Chapter four will report the study's findings related to the research questions, while chapter five will discuss the results and implications for future digital citizenship research.

CHAPTER 2: LITERATURE REVIEW

This qualitative study sought to identify content area teachers' understanding of digital citizenship, and acknowledge successes and challenges teachers face in integrating digital citizenship into their curriculum. It also sought to understand the impact of professional development experiences on digital citizenship instruction, and identify areas of growth for digital citizenship implementation in classrooms. This literature review seeks to provide an overview of the research on digital citizenship while acknowledging the many definitions and frameworks available for the topic. It also addresses the various state and national teaching standards and federal laws related to digital citizenship. This chapter provides an overview of the research on teaching digital citizenship in the classroom, including the importance of teaching digital citizenship, the differences between using a digital citizenship curriculum or embedding content into lessons, challenges for teaching digital citizenship, and teacher professional development opportunities for digital citizenship. This chapter concludes with a discussion of connectivism, a learning theory developed by George Siemens (2005), and its relevance to digital citizenship. Table 3 outlines how this literature is presented by theme.

Table 3

Literature Reviewed and Sorted by Theme

Themes	References
	Digital Citizenship
Definitions & Frameworks	*Defining Digital Citizenship* (Bleazby, 2006; Choi, 2016; Dewey, 1909; Hollandsworth et al., 2011; National Council for the Social Studies, 2013; Pring 2016; Ribble, 2012) *C3 Framework* (Pruitt-Mentle, 2008) *9 Elements of Digital Citizenship* (Ribble, 2004; Ribble & Bailey, 2007) *Five Core Dispositions of Digital Citizenship* (Common Sense Education, n.d.; James et al., 2019) *Digital Citizenship Scale* (Choi, 2015; Choi et al. 2017)
Standards	(American Association of School Librarians, 2018; Hollandsworth et al., 2011; International Society for Technology in Education, 2007; ISTE, 2008; ISTE, 2016a; ISTE, 2016b; ISTE, 2021; North Carolina Department of Public Instruction, n.d.a; NCDPI, 2019a; NCDPI, 2019b; Ribble et al., 2004)
Laws	(Batch et al., 2015; Federal Communications Commission, 2019; Miller, 2016; National Forum on Education Statistics, 2016; Office of Educational Technology, n.d.; Schrameyer et al., 2016)
Importance of Teaching	(Hollandsworth et al., 2011; Ribble, 2012) *The Schools' Role in Teaching Digital Citizenship* (Armfield & Blocher, 2019; Choi et al., 2018; National Forum on Education Statistics, 2016; Office of Educational Technology, 2020; Phillips & Lee, 2019; Pusey & Sadera, 2011; Ribble, 2012; Ribble & Bailey, 2004) *Starting Early with Digital Citizenship* (Hollandsworth et al., 2011; Hollandsworth et al, 2017; James et al., 2019; Rideout & Robb, 2020) *Using Digital Citizenship Curriculums Versus Embedding into Content* (Armfield & Blocher, 2019; Buchholz et al., 2020; Common Sense Education, n.d.; Geller 2016; Gilmour, 2019; Google, n.d.; Hui & Campbell, 2018; ISTE, 2016b; Krutka & Carpenter, 2017; Office of Educational Technology, 2020; Pruitt-Mentle, 2008; Ribble, 2012)

Themes	References
Implementation Challenges	(Choi et al., 2018; Hollandsworth et al., 2011; Martin, Gezer, et al., 2020; Pruitt-Mentle, 2008; Pusey & Sadera, 2011; Ribble, 2012)
Professional Development	(Gilmour, 2019; Li et al., 2020; Martin, Gezer, et al., 2020; Organisation for Economic Co-operation and Development, 2018; Pruitt-Mentle, 2008; Pusey & Sadera, 2011; Ribble, 2012; Ribble et al., 2004)
Connectivism	
Connectivism	(Downes, 2008; Siemens, 2005)
Key Principles of Connectivism	(Boitshwarelo, 2011; Downes, 2008; Siemens, 2005; Wang et al., 2014)
Learning Ecology	(Downes, 2008; Hung, 2014; Mattar, 2018; Siemens, 2004; Siemens, 2006)
Connectivism & Digital Citizenship	(Bell, 2011; Boitshwarelo, 2011; Siemens, 2005; Wang et al., 2014; Weigel et al., 2009)

Note. The themes in Table 3 are organized in order of introduction. References in Table 3 are organized alphabetically by author.

Digital Citizenship

Defining Digital Citizenship

Although a definition of digital citizenship was provided in Chapter 1, understanding the history and how the concept has changed is important to the overall goals of this study. Over the past 20 years, a variety of definitions and key terms related to the topic have emerged. However, one can look back further in time for examples of citizenship in learning and education. The traditional approach to citizenship dates back to the 17th century in the western world and was addressed by education advocates such as Thomas Jefferson and Horace Mann. At the turn of the 20th century, educational philosopher John Dewey (1909) began directly addressing how citizenship should be addressed in education. He believed that one of the primary responsibilities

of schools is to educate students on how to participate socially and politically in the larger community (Choi, 2016; National Council for the Social Studies, 2013; Pring, 2016). In the 1950s, sociologist T.H Marshall noted:

> The right to education is a genuine social right of citizenship, because the aim of education during childhood is to shape the future adult. Fundamentally it should be regarded, not as the right of the child to go to school but as the right of the adult citizen to have been educated (Bleazby, 2006, p. 32).

The National Council for the Social Studies (2013) includes references to citizenship throughout its position statement, noting, "the goal of schooling, therefore, is not merely preparation for citizenship, but citizenship itself; to equip a citizenry with the knowledge, skills, and dispositions needed for active and engaged civic life" ("Introduction" section). Although the world has changed drastically since these original scholars began their work with citizenship, and concepts of global and cosmopolitan citizenship have emerged, the underpinnings of this work still run through our education system today. From this phenomenon, the concept of digital citizenship has increased in importance since the rise of the Internet (Choi, 2016).

As students come to school with more experience using devices and digital tools and schools invest more money to modernize classrooms, the need to educate students on emerging issues with technology has increased (Ribble, 2012). Hollandsworth et al. (2011) acknowledge that the term digital citizenship can be confusing to envision in classrooms. They liken it to character education and note that it could be viewed as "becoming a good citizen in the digital community [but] would include considerations for student safety and security, educational enhancement, ethical and legal behaviors, and becoming an effective member of digital

communities" (Hollandsworth et al., 2011, p. 37) which aligns with the founding definitions of citizenship in American education.

The roots of digital citizenship go back to the late 1990s or early 2000s. The following section will provide an overview of major digital citizenship frameworks over the past 20 years. Some of the earliest published work is Pruitt-Mentle's C3 Framework from 2000, followed by Ribble and Bailey's Nine Elements of Digital Citizenship which came about in the mid-2000s. Next, Project Zero and Common Sense Education introduced the Five Core Dispositions of Digital Citizenship along with their digital citizenship curriculum, and most recently Choi developed a Digital Citizenship Scale. Learning the background of all four of these frameworks is helpful in building a robust understanding of digital citizenship.

Pruitt-Mentle's C3 Framework

The C3 Framework uses the concepts of cyberethics, cybersafety, and cybersecurity to describe comprehensive digital citizenship education for students. It was started in 2000 by Pruitt-Mentle (2008) and was originally called the Cyberawareness Framework. It has since morphed into the C3 Framework because the creator noticed that schools were not adequately addressing all areas of importance to prepare students to work online. In the framework, cyberethics refers to what is considered "good and bad, and with moral duty and obligation as they pertain to online environments and digital media" (Pruitt-Mentle, 2008, p. 10). Topics that fall under this tenant include copyright, cyberbullying, internet addiction, and online etiquette among others. Cybersafety refers to the "ability to act in a safe and responsible manner on the Internet and in online environments" (Pruitt-Mentle, 2008, p. 10). Online predators, harassment, and threats fall under this tenant as well as topics like internet addiction which were also under cyberethics. Cybersecurity "cover[s] physical protection (both hardware and software) of

personal information and technology resources from unauthorized access gained via technological means" (Pruitt-Mentle, 2008, p. 11). Items included under this tenant include hoaxes, spyware, phishing, and more.

Ribble and Bailey's Nine Elements of Digital Citizenship

As shared in the introduction, Ribble et al. (2004) define digital citizenship and the nine elements as "the norms of behavior with regard to technology use [with the nine elements] as a way of understanding the complexity of digital citizenship and the issues of technology use, abuse, and misuse" (p. 7). Ribble and Bailey's (2007) Nine Elements of Digital Citizenship summarize areas addressed in previous literature related to the topic. The nine elements as described by Ribble and Bailey are:

1. Digital Access: full electronic participation in society.
2. Digital Commerce: the buying and selling of goods online.
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4. Digital Literacy: the capability to use digital technology and knowing when and how to use it.
5. Digital Etiquette: the standards of conduct expected by other digital technology users.
6. Digital Law: the legal rights and restrictions governing technology use.
7. Digital Rights and Responsibilities: the privileges and freedoms extended to all digital technology users, and the behavioral expectations that come with them.
8. Digital Health and Wellness: the elements of physical and psychological well-being related to digital technology use.
9. Digital Security: the precautions that all technology users must take to guarantee their personal safety and the security of their network (Ribble & Bailey, 2007, p. 10).

Along with other scholars, Ribble's work with Digital Citizenship and the Nine Elements has continued and is the foundation of the International Society for Technology in Education's (ISTE) digital citizenship efforts.

Project Zero and Common Sense Education's Five Core Dispositions of Digital Citizenship

In 2010, Common Sense Education (n.d.) worked with Project Zero at Harvard to develop a free Digital Literacy and Citizenship Curriculum. Today, this curriculum is used in over 60,000 schools in the United States. Common Sense and Project Zero define digital citizenship as "the responsible use of technology to learn, create, and participate" (James et al., 2019, p. 5). The original curriculum was updated in 2019 and is now based on five core dispositions. James et al. (2019) explain the differences between a skill and a disposition, noting that these dispositions aim to help students "be reflective, responsible, and ethical decision makers in their connected lives" (p. 10). These Five Core Dispositions are outlined in Table 4 (James et al., 2019, p. 11).

Table 4

Five Core Dispositions of Digital Citizenship

Dispositions	Steps You Can Take
Slow down and self-reflect	● Notice your gut reaction ● Push beyond your first impression ● Recognize that situations can be complex ● Routinely take stock of your habits ● Pay attention to "red flag feelings"
Explore perspectives	● Be curious and open-minded ● Think about other people's points of view ● Care for other people's feelings ● Weigh different people's values and priorities as well as your own ● Consider moral, ethical, and civic responsibilities (the Rings of Responsibility)
Seek facts and evidence	● Investigate and uncover relevant facts ● Seek and evaluate information from multiple credible sources ● Weigh evidence from different sources
Envision options and possible impacts	● Envision possible courses of action ● Consider how different choices reflect your values and goals ● Stay alert to responsibilities to yourself and others ● Evaluate possible impacts
Take action	● Decide on a course of action that feels positive and productive ● Make changes in digital habits to support well-being ● Ask for help when you need it ● Be an ally and upstander for others

Alongside of the Five Core Dispositions, the curriculum identifies six topics that students face as identified in the current research. These topics are addressed cyclically throughout the K-12 curriculum in developmentally appropriate ways. The first topic is Media Balance and Well-Being which focuses on how much time students spend online and what they are doing online. The next topic is Privacy and Security which focuses on data privacy. The third topic is Digital

Footprint and Identity which looks at how students develop their identities online. The next topic is Relationships and Communication which looks at how students build relationships and communicate with others online. The fifth area is Cyberbullying, Digital Drama, and Hate Speech which focuses on harmful digital behavior and how to address it. The final topic is News and Media Literacy which includes copyright and shows students how to both consume and create media (James et al., 2019).

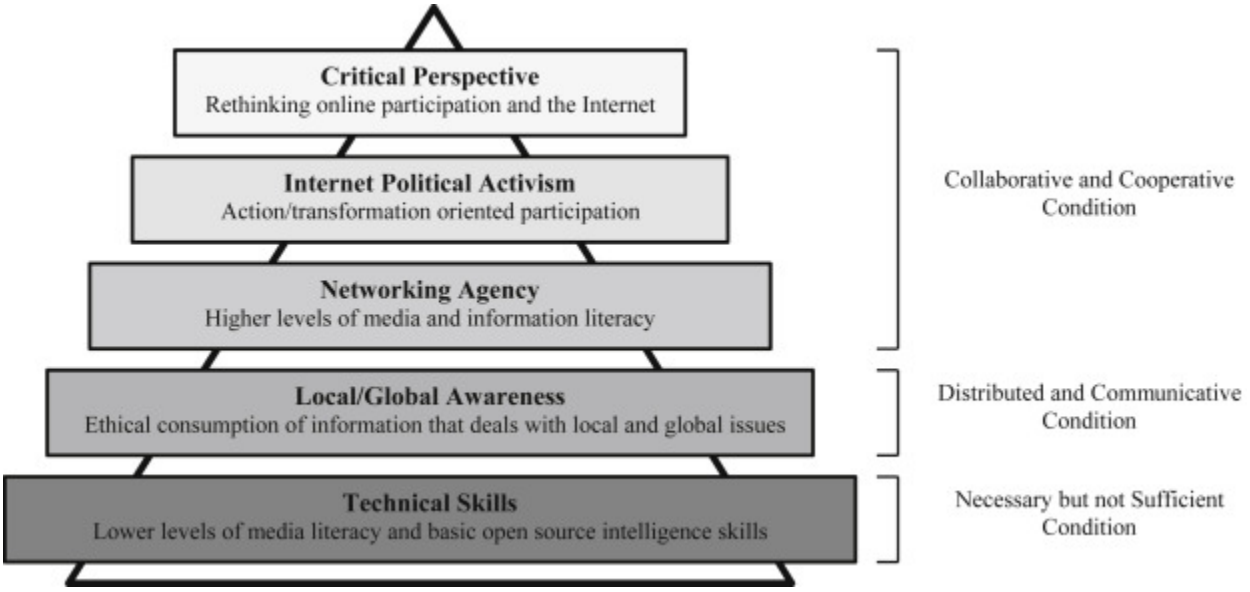
Choi's Digital Citizenship Scale

As a social studies educator, Choi (2015) began doing work on the Digital Citizenship Scale for her dissertation. Through a search of the literature and other online data she identified four categories that define the concept of digital citizenship: Ethics, Media and Information Literacy, Participation/Engagement, and Critical Resistance. The concept of Ethics covers digital rights and responsibilities and the ethical use of technology. Media and Information Literacy includes access, technical skills, and digital health. Participation/Engagement covers engaging with others through political, economic, and cultural engagement. Critical Resistance includes recognition of power structures.

She continued to work to create a scale that was both valid and reliable. During a later study, Choi et al. (2017) conducted an Exploratory Factor Analysis that yielded a structure of digital citizenship (Figure 1) which included: Internet Political Activism, Technical skills, Local/Global Awareness, Critical Perspective, and Networking Agency along with three conditions of complexity (p. 111).

Figure 1

Choi et al (2017) Digital Citizenship Structure with Levels of Complexity.



Note. From "What It Means to Be A Citizen in the Internet Age," by M. Choi, M. Glassman, and D. Cristol, 2017, *Computers and Education*, *107*, p. 111 (https://doi.org/10.1016/j.compedu.2017.01.002). Copyright 2017 by Elsevier. Reprinted with permission.

In the same study, Choi et al. (2017) aptly sum up this section on digital citizenship definitions and frameworks by noting that:

> Digital citizenship is not static, stable, and/or fixed but a dynamic, flexible, multifaceted, and/or multilayered concept that is interlinked with individuals' everyday online and offline activities. Although traditional approaches to citizenship [are] centered on place based contexts of individuals' everyday activities, we argue that a cohesive concept of digital citizenship should be more globally aware, more critical, and more concerned with goal-oriented participation beyond traditional boundaries (Choi et al., 2017, p. 111).

Digital Citizenship Standards

A variety of standards have been developed by organizations such as the ISTE and the American Association of School Librarians (AASL) as well as state departments of education. As of April of 2021, all 50 states in the United States, as well as the US Territories of Puerto Rico and Guam, have adopted either the 2006 or the 2017 ISTE Standards for Students and/or Teachers, making the topic of digital citizenship relevant to both educators and students across the country (ISTE, 2021).

ISTE first released a set of National Educational Technology Standards for Students in 1998 and National Educational Technology Standards for Teachers in 1999 with the goal of helping students and teachers become successful with educational technology that was emerging at the time. Digital citizenship was added to the standards for the second editions that were released in 2007 for students and 2008 for teachers (International Society for Technology in Education, 2007; International Society for Technology in Education, 2008). These standards were developed to help identify behaviors that students should exhibit in school. However, student behavior with technology outside of school has become an increasing problem for schools and teachers (Ribble et al., 2004). In 2016, ISTE updated the standards again and renamed them the ISTE Standards for Students and the ISTE Standards for Educators. Standard two in the updated ISTE Standards for Students (2016b) for students reads:

> Digital Citizens: 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.
>
> 2a - Students cultivate and manage their digital identity and reputation and are aware of the permanence of their actions in the digital world.

2b - Students engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.

2c - Students demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.

2d - Students manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online ("Digital Citizens" section).

Similarly, digital citizenship is addressed in the ISTE Standards for Educators (2016a) and reads:

Citizen: Educators inspire students to positively contribute to and responsibly participate in the digital world. Educators:

3a - Create experiences for learners to make positive, socially responsible contributions and exhibit empathetic behavior online that build relationships and community.

3b - Establish a learning culture that promotes curiosity and critical examination of online resources and fosters digital literacy and media fluency.

3c - Mentor students in safe, legal and ethical practices with digital tools and the protection of intellectual rights and property.

3d - Model and promote management of personal data and digital identity and protect student data privacy ("Citizen" section).

These standards challenge educators to not only teach students how to do these things but for educators to become models for digital citizenship in their classrooms and professional lives.

Other national organizations, like the AASL, tout the importance of digital citizenship and have embedded digital citizenship topics into their standards for learners, school librarians,

and school libraries. For example, under the “Think” domain for school librarians, the standards state:

> School librarians promote ethical and legal guidelines for gathering and using information by:
>
> 1. Directing learners to responsibly use information, technology, and media for learning, and modeling this responsible use.
>
> 2. Modeling the understanding of ethical use of information, technology, and media.
>
> 3. Teaching learners how and why to evaluate information for accuracy, validity, social and cultural context, and appropriateness for need (American Association of School Librarians, 2018, “Think Section”).

In another example, under the “Create” domain for school libraries, the standards state:

> The school library supports ethical processes for information seeking and use by:
>
> 1. Providing an environment in which all members of the school community can work together to develop, approve, and engage in clearly stated use policies to guide acceptable and ethical use of information, technology, and media.
>
> 2. Promoting the responsible use of ideas, information, media, and technology through compliance with copyright and intellectual-property policies developed by the school librarian in collaboration with all members of the school community (American Association of School Librarians, 2018, “Create Section”).

In a third example, the “Learner” domain competency for “Share” states:

> Learners exchange information resources within and beyond their learning community by:
>
> 1. Accessing and evaluating collaboratively constructed information sites.

2. Contributing to collaboratively constructed information sites by ethically using and reproducing others' work.

3. Joining with others to compare and contrast information derived from collaboratively constructed information sites (American Association of School Librarians, 2018, "Share Section").

State government departments of education are also including digital citizenship standards for students and educators. For the 2020-2021 school year, the North Carolina Department of Public Instruction (NCDPI) updated the student Information and Technology Essential Standards that were initially implemented in 2011. The old standards, which did address digital safety and ethical use as well as some digital research skills, were replaced directly with the ISTE Standards for Students (North Carolina Department of Public Instruction, n.d.a).

NCDPI took a different approach with the standards for teachers and administrators by developing their own set of Digital Learning Competencies for each group. Both sets of competencies address digital citizenship. The Digital Learning Competencies for Classroom Teachers dedicated an entire section to digital citizenship. It states that "teachers will model and teach digital citizenship by the ethical, respectful, and safe use of digital tools and resources that support the creation of a positive digital school culture" (North Carolina Department of Public Instruction, 2019a, p. 1). Additionally, the individual competencies address intellectual property and copyright, "professional digital social interaction," explicitly teaching digital citizenship, demonstrating global awareness, and ensuring "full, equitable access and participation of all learners" (North Carolina Department of Public Instruction, 2019a, p. 1).

For school administrators, digital citizenship is addressed at the beginning of the document and under the Content and Instruction focus area. Before listing any of the competencies the document states, “Throughout all of the competencies is the underlying assumption of leadership and excellence with regard to digital citizenship. Administrators should model the behavior they expect from their staff and students and should continually seek to represent their schools and districts with the way they convey themselves both on and offline” (North Carolina Department of Public Instruction, 2019b, p. 1). The competency related to digital citizenship states that school administrators should, “Promote and model positive digital citizenship as well as practical policies for communication and collaboration with stakeholders to ensure responsible, effective digital teaching and learning practices throughout all school processes” (North Carolina Department of Public Instruction, 2019b, p. 1). The inclusion of digital citizenship standards for students, classroom teachers, and school administrators by the department of public instruction along with specific educator organizations like ISTE and AASL underlines the importance of the topic for all students and educators across the state, but “awareness, education, and action” are all needed to help students become digital citizens (Hollandsworth et al., 2011, p. 40).

Digital Citizenship Laws

Alongside of teaching and learning standards on digital citizenship, there are three federal laws that relate directly to schools and educators regarding digital citizenship: Family Educational Rights and Privacy Act (FERPA), Children’s Online Privacy and Protection Act (COPPA), and Children’s Internet Protection Act (CIPA).

The first law, FERPA, was originally passed in 1974 but has been amended multiple times, most recently in 2011. The goal of FERPA is to protect the privacy of student educational

records from unauthorized sharing. This information could include educational information such as files or documents on the student and personally identifiable information (PII) such as student name, identification numbers, or other information that could be linked directly to the student. All school employees are responsible for abiding by the law and must receive parental permission before providing access to students' educational records to other educational institutions, possible employers, or anyone else (Office of Educational Technology, n.d.; National Forum on Education Statistics, 2016). This is relevant to digital citizenship because, as teachers move work into online classrooms, they put themselves at risk of violating FERPA mandates by sharing students' educational records and PII with online websites as well as other students or educators (Schrameyer et al., 2016).

The second federal law, COPPA, was implemented in 2000 and updated in 2013. It is relevant for teachers of students who are under the age of 13. It was enacted by the Federal Trade Commission to protect children online while using websites, games, and mobile apps. It requires vendors to post privacy policies that describe how they apply user data, explicitly state what data they collect and describe how they use the data, and require parental permission to allow students to register for the site, among other directives (Office of Educational Technology, n.d.; National Forum on Education Statistics, 2016). While COPPA puts the onus on the developers of websites, games, and applications, it is important for educators to understand the implications of the law and ensure that they have parental permission before signing students up for online tools, even if they are for educational purposes (Miller, 2016).

The final law reviewed here that is relevant to digital citizenship is CIPA. It was enacted in 2000 and enforced by the Federal Communications Commission which updated it in 2011. CIPA requires that schools and libraries that accept E-rate funding for Internet access or Internet

pricing discounts must limit children's access to objectionable content through the use of Internet filters. It also requires that schools and libraries must educate students on "appropriate online behavior, including interacting with other individuals on social networking websites and in chat rooms, and cyberbullying awareness and response" (Federal Communications Commission, 2019, p. 1). It is important for teachers to be aware of this because even though the filtering is typically done by the information technology department at the school, teachers are often responsible for the educational piece of the law. Additionally, the American Library Association warns that filtering may "create two classes of students: an advantaged class with unfiltered Internet access at home and a disadvantaged class with only filtered access at school" so educators need to help students to use the Internet effectively (Batch et al., 2015, p. 64).

Importance of Teaching Digital Citizenship

The variety of definitions, frameworks, standards and laws for digital citizenship highlight the variety of topics that encompass the term "digital citizenship." The amount of material to be covered, as well as the "sensitivity of the subject matter, concerns teachers, who may view digital citizenship as a technology problem rather than a societal issue that affects everyone" (Ribble, 2012, p. 149). However, educators need to recognize these issues that affect both schools and students. Through a variety of interviews with relevant digital citizenship researchers, Hollandsworth et al. (2011) compare digital citizenship education to the "it takes a village" proverb. They pose that K-12 educators need to come together and advocate for educational technology while preparing students to make good choices online.

The School's Role in Teaching Digital Citizenship

In their report on Educational Data Privacy, the National Forum on Education Statistics (2016) notes that the responsibility for teaching digital citizenship does not rest with just one

entity. The report notes that both school staff and parents along with state and local education agencies are responsible for making sure that the proper supports are in place and digital citizenship is taught and modeled for students. A study of school librarians by Phillips and Lee (2019) found that 78.1% of librarians either somewhat or strongly agree that schools should be responsible for teaching digital citizenship. However, there was less agreement on who should be covering the material at the school. Of those surveyed, 66.2% believed it was the responsibility of both teachers and librarians, while 17.6% felt that it was the technology specialist's responsibility. Only 2.2% of librarians interviewed thought that it was the responsibility of everyone in the school. In spite of that, with topics including cyberbullying, news literacy, and online safety, among others that encompass the digital citizenship concept, it seems that all educators, including teachers, librarians, technology specialists, administrators, and even school counselors, should share this responsibility. One problem is that many educators are not aware of the intricacies of the online lives their students are living and are ill-prepared to teach them the needed skills to become knowledgeable digital citizens (Armfield & Blocher, 2019; Choi et al., 2018). Another problem facing K-12 educators is that they need more professional development on how to successfully integrate digital citizenship into their content area curriculum alongside all the other topics that need to be taught (Pusey & Sadera, 2011; Ribble, 2012; Office of Educational Technology, 2020).

Ribble and Bailey (2004) encourage schools to create an action plan for teaching digital citizenship. Their first recommendation is to prioritize teaching digital citizenship and include it in the school technology plan. Their next recommendation is to provide examples of problems that occur in the various digital citizenship areas. The article provides examples and questions that could be discussed. Third, they recommend gathering various stakeholders and educating

them on the needs for addressing digital citizenship. Finally, Ribble and Bailey (2004) encourage technology committees to identify specific steps needed to deal with digital issues.

Starting Early with Digital Citizenship

From 2011 to 2017 the number of children ages 0-8 with a smartphone in their home more than doubled from 41% to 95%. Percentages of children in this age group with tablets in the home or their own tablet rose exponentially as well. Additionally, mobile media time more than tripled for this age group going from an average of five minutes per day in 2011 to 15 minutes per day in 2013 to 48 minutes per day in 2017 (James et al., 2019). In a more recent survey from February and March of 2020, Rideout and Robb (2020) surveyed 1,440 parents and found that children in the 0-8 age group now use screens for an average of 2.5 hours a day and the majority of that time (73%) is spent watching TV or videos. The majority of video watching is from YouTube or subscription services. Because children are being exposed to more screen time earlier and earlier in life, teaching digital citizenship to the youngest students is reasonable.

In a survey of 500 school librarians from 14 states across the United States, Hollandsworth et al. (2011) found that 54% of school librarians thought digital citizenship lessons should start in primary grades (pre-kindergarten through second grade), while only 15% thought the lessons should wait until students were in fifth grade or older. In an updated 2016 survey, Hollandsworth et al. (2017), noted that although most schools begin teaching digital citizenship now in third grade, nearly all of those surveyed think it should be taught for students as young as preschool.

Using Digital Citizenship Curriculums Versus Embedding into Content

There are a variety of stand-alone digital citizenship curriculums available on the market from well-known companies such as Common Sense Education (n.d.) and Google (n.d.).

However, according to Ribble, “Digital citizenship is not a topic separate from the rest of the curriculum, but spans across all areas of education” so teachers need to be able to integrate it successfully into lessons (Ribble, 2012, p. 151). The Office of Educational Technology (2020) reiterated the importance of embedding digital citizenship into the content areas of their Digital Learning Guide to support teachers during the COVID-19 pandemic.

The National C3 Baseline Survey found that most digital citizenship content is delivered through one-time assemblies or stand-alone lessons and is limited to internet safety topics such as not sharing personal information or awareness of online predators (Pruitt-Mentle, 2008). The survey also found that 53.8% of educators felt unprepared to talk about digital citizenship issues and that this lack of understanding “prohibits them from sharing information with students in either formal classroom lessons or in informal ‘teachable moments’” (Pruitt-Mentle, 2008, p. 3). More recent studies have reiterated these findings; even though teachers’ perceived understanding of the importance of digital citizenship has increased, they still view the concept in isolation (Armfield & Blocher, 2019; Geller 2016; Gilmour, 2019). Furthermore, Hui and Campbell (2018) found that even when students scored well on digital citizenship quizzes after an instructional unit on the topic, that knowledge did not translate to real-world practice.

Krutka and Carpenter (2017) explore the concept of developing personally responsible, participatory, and justice-oriented digital citizens. They note that it is not enough to just define terms and that students should learn about digital citizenship through actively participating online in real-world scenarios. One example they provide to educators to help create personally responsible digital citizens is asking students to evaluate a website on a topic that they are preparing to learn more about by clicking links and digging deeper into the goals of the site. Another example they provide is having students apply math concepts to data and statistics

claimed by politicians. Krutka and Carpenter suggest developing class social media accounts to develop participatory digital citizens and practice what responsible posting and replying looks like. To help students become more justice-oriented they recommend marking posts with social media hashtags to raise awareness of issues.

Adding to these arguments, Buchholz et al. (2020) address how digital citizenship has come to light during the COVID-19 pandemic and how the world has changed since learning moved online in the spring of 2020. Since this time:

> Citizens of all ages use digital literacy practices to learn, stay informed, and care for and connect with family, friends, and communities near and far. These changes require educators to question how reading and writing practices are shaped by the rapid-fire pace of information and to explore the best ways to model and nurture critical digital citizenship (Buchholz et al., 2020, p.12).

Buchholz et al. (2020) emphasize the importance of participation and engagement in online environments as a way to learn more about digital citizenship and pose several questions for inquiry about staying informed by evaluating the accuracy, perspective, and validity of online sources, locating or developing spaces online where users can engage respectfully with people who have different beliefs and experiences, using technology to engage, participate, and be a force for good in one's community, and learning to balance screen time with other activities and social interactions (Buchholz et al., 2020, p.13). The authors developed these questions based on the ISTE (2016b) digital citizenship standards with a specific emphasis on incorporating Krutka and Carpenter's (2017) concept of developing personally responsible, participatory, and justice-oriented digital citizens to encourage real-world practice.

Implementation Challenges

A variety of challenges face school districts, teachers, and parents with regard to digital citizenship instruction. One such challenge is the ability to stay abreast of current digital citizenship topics. Hollandsworth et al. (2011) recognize the challenges that parents and educators face in staying informed about the newest technologies. However, they underline the importance of staying "informed, involved, and actually [becoming] advocates for the newest technologies [because] parents and schools cannot afford to ban, ignore, or stifle the use of technology at home, at school or in our communities" (Hollandsworth et al., 2011, p. 41). In their survey of school librarians, Hollandsworth et al. (2011) found that 35% of school librarians believed that only some teachers were aware of digital citizenship issues but the majority are not, while 57.6% believed that most teachers are at least somewhat aware of digital citizenship issues. In a 2016 version of the same survey Hollandsworth et al. (2017) found that overall, some to most teachers are aware of digital citizenship issues, but fewer school librarians believed that most teachers are aware and actually teach students about digital citizenship. This highlights the fact that digital citizenship is still not universally understood by educators.

Pruitt-Mentle (2008) says that breaking up the larger topic of digital citizenship into smaller areas such as Cyberethics, Cybersafety, and Cybersecurity like her C3 Framework allows schools and teachers to better design lessons and address issues with students. This was echoed by Ribble and Part (2019) when they categorized their nine elements into S3 (Safe, Savvy, Social). Pruitt-Mentle (2008) noted that addressing all the areas as one topic, "through branding such as digital citizenship or cyberawareness, makes it far too easy to check off the topic as 'covered,' while only scratching the surface of individual domains" (p. 5). Even so, she found another challenge many face, is that they put the responsibility of teaching these topics on

someone else. Pruitt-Mentle (2008) found that even though there are technology standards from a variety of organizations, teachers still do not recognize their responsibility for addressing digital citizenship topics into their content areas. She believes that all educators, including administrators, specialists, and classroom teachers need to take responsibility for teaching these standards. But many educators surveyed put the duty of teaching cyberethics on parents and the burden of cybersecurity on information technology departments (Pruitt-Mentle, 2008).

This reliance on others to address digital citizenship has led to schools relying on Acceptable Use Policies to address problems that arise from technology instead of looking more deeply at the source of the issues. Because of this, problems continue to occur (Ribble, 2012). In their survey of school librarians, Hollandsworth et al. (2011) found that 86% of schools are using Acceptable Use Policies while 98% are also using filtering and firewalls. Though the survey also found that 86% of schools were teaching students proper behavior for internet safety, the exact content of what they were teaching was widely varied. Over 90% of schools were teaching about plagiarism, copyright and evaluating electronic sources while only 53% were teaching about texting, email and instant messaging issues, 44% were teaching about social media, 36% were teaching about cell phone etiquette and 33% were teaching about ergonomics (Hollandsworth et al., 2011).

Many of these issues could be due to the fact that educators are not learning about digital citizenship in formal ways. Pusey and Sadera (2011) identified a variety of C3 topics and rated 318 preservice teachers' preparedness to teach those topics. Using a Likert-type scale, teachers rated 75 topics from 1-4 with one being "I've never heard anything about this" and four being "I know about this, and could model or teach it to others." Some of the topics that the preservice educators felt more comfortable with included cell phones, text messaging, plagiarism,

passwords, online games, and social networking, while the topics the preservice teachers felt the least confidence in included laws such as CIPA, COPPA, FERPA, cached websites, keyloggers, spoofing, and bots. This study showed that although the pre-service teachers had grown up with access to the technology, they were still unprepared to teach their future students and are unaware of how to protect themselves from digital harm (Pusey & Sadera, 2011).

Choi et al. (2018) conducted a study on how teachers view themselves as digital citizens. This is important to digital citizenship research because teachers should recognize their skill sets as reflective practitioners in our digital world. Researchers in this study used Choi's previously developed Digital Citizenship Scale, which was initially designed for young adults, with classroom educators of all ages. In addition to this scale, the researchers used the Internet self-efficacy scale and the State-Trait Anxiety Inventory to measure technology competency and anxiety. The study found a strong positive correlation between digital citizenship understandings and Internet self-efficacy and a negative correlation between digital citizenship and Internet anxiety. They also found that years of work experience, use of social networking sites for teaching, and Internet self-efficacy influenced their understanding and perceptions of digital citizenship. This study stresses the importance of educators becoming engaged with and informed about digital citizenship so that they can model it for their students. It also recommends that "teacher education should present learning challenges for pre-and in-service teachers to critically explore the Internet, and participate in online communities [so that] pre-service, new, and experienced teachers can develop roles of responsibilities of a digital citizen" (Choi et al., 2018, p. 155).

Additional problems with implementation were identified by Martin, Gezer, et al. (2020) in their survey of 45 teachers who had chosen to participate in a digital citizenship professional

development opportunity. One of the questions they asked related to the challenges teachers face in teaching digital citizenship. Findings included lack of time to teach digital citizenship, a struggle to keep up with students' digital citizenship needs, and students not being open to learning the content, among others. They also found that there is a lack of consistency in teaching digital citizenship with one participant noting that they would like time built into the schedule to teach it weekly (Martin, Gezer, et al., 2020).

Professional Development

Professional development is needed to ensure that educators are prepared to educate students on a variety of topics pertaining to digital citizenship (Martin, Gezer, et al., 2020; Gilmour, 2019). Helping teachers learn about digital citizenship and share their knowledge with their students is challenging because 56% of teachers are over 40-years-old and did not grow up with the technologies available to today's students (Organisation for Economic Co-operation and Development, 2018). Therefore, they are less prepared to talk about using technology safely and effectively in our digital world. Providing relevant professional development opportunities for teachers is crucial to making an impact on students (Ribble, 2012). This is important for educators to remember because, as Ribble et al. (2004) note, "When students see adults using technologies inappropriately, they can assume it is the norm. This leads to inappropriate technology behavior on the part of students" (p. 7).

Pruitt-Mentle (2008) emphasizes the importance of providing professional development opportunities for teachers, which requires funding and expertise in the field. She found that 67% of educators are interested in learning more about digital citizenship, but notes that teachers will need ongoing opportunities, not just one session, to learn about digital citizenship topics to successfully meet state and national standards. A mixed-methods study conducted by Martin,

Gezer, et al. (2020) collected both survey and interview data on middle school teachers who had chosen to participate in a three-credit digital citizenship professional development course during the summer. Researchers identified four primary reasons that teachers chose to participate in the course that included: student-related reasons (such as wanting to educate students on appropriate technology use), personal reasons (such as having a middle-school aged student), curriculum-related reasons (such as want ideas for how to teach the content to students), and school-related reasons (such as working in a 1:1 environment). Educators participating in the course found the content transferable to their classrooms and appreciated the resources the course provided them with on digital citizenship (Martin, Gezer, et al., 2020).

Li et al. (2020) explored the difference in professional development needs for digital immigrants (those born before 1980) and digital natives (those born after 1980). This is relevant to digital citizenship because of how these teachers are using the technology. They found that educators who are digital natives use technology more for "entertainments, social networks, shopping, and class preparation," while educators who are digital immigrants are more likely to use it for "work email, creative work, and learning for work related knowledge" (Li et al., 2020, p. 21). They also found a significant difference between digital immigrants and digital natives in the amount of time spent using technology, whether or not they enjoy using technology, and whether or not they find it easy to use. While the researchers found no significant difference in the ability to integrate technology into daily classes, they determined that digital immigrants were better at using technology for teaching purposes. However, both groups need to improve technology knowledge through high-quality professional development (Li et al., 2020).

Pusey and Sadera (2011) note that more research is needed to determine the best course of action for preservice teacher education and in-service teacher professional development on

digital citizenship topics. They note that “until C3 becomes second nature to every citizen, including both digital natives and immigrants, we will be mere tourists who are subject to the dangers that only locals know about” (Pusey & Sadera, 2011, p. 87).

Connectivism

To better understand digital citizenship and its importance to students and educators, it is useful to consider George Siemens' (2005) and Stephen Downes’ (2008) connectivism learning theory. Downes (2008) provides a real-world example of connectivist learning with his example of two friends voting in an election. In the example, one person voted a certain way because the other friend suggested the candidate; this interaction between the two friends led to a connection and new knowledge which happens often in daily life. These types of connections take place every day online and Internet users need to be aware of this connected knowledge being developed through digital interactions.

Connectivism proposes that learning is "actionable knowledge" and focuses on "connecting specialized information sets, and the connections that enable us to learn more are more important than our current state of knowing" (Siemens, 2005, "Connectivism" section). Connectivism recognizes that available information is always growing and changing and that it is essential for learners to recognize when this happens. It also acknowledges that we are constantly surrounded by information, and we must continuously determine what is necessary and relevant.

Key Principles of Connectivism

In his seminal work on the learning theory, Siemens (2005) offers eight principles of Connectivism:

1. Learning and knowledge rests in diversity of opinions.
2. Learning is a process of connecting specialized nodes or information sources.

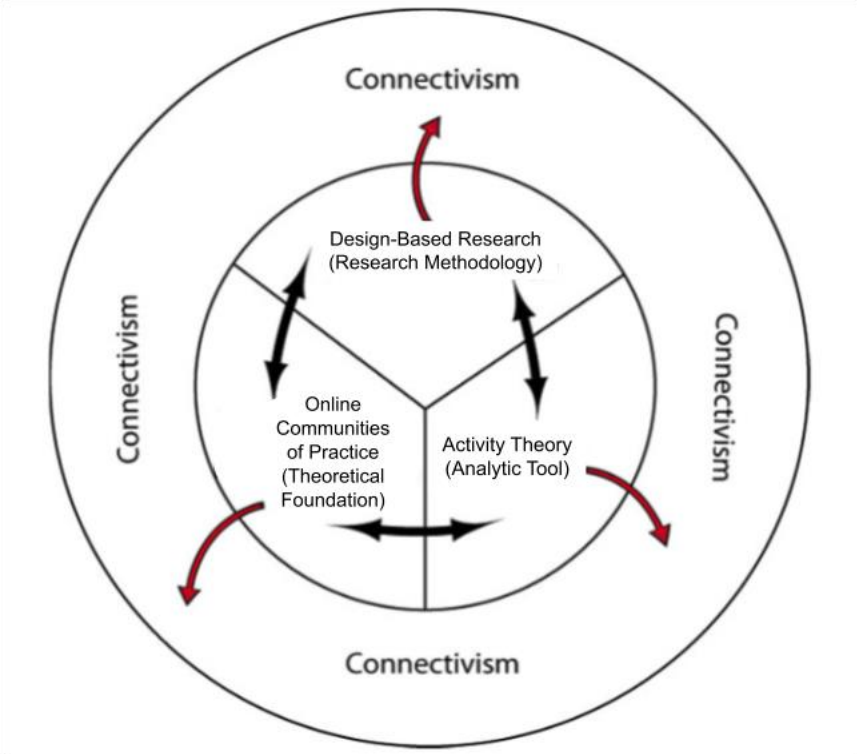
3. Learning may reside in non-human appliances.
4. Capacity to know more is more critical than what is currently known.
5. Nurturing and maintaining connections is needed to facilitate continual learning.
6. Ability to see connections between fields, ideas, and concepts is a core skill.
7. Currency (accurate, up-to-date knowledge) is the intent of all connectivist learning activities.
8. Decision-making is itself a learning process ("Principles of Connectivism" section).

Downes (2008) believes connective knowledge is a new category of knowledge. He considers that it is "distributed, because it is spread across more than one entity. A property of one entity must lead to or become a property of another entity in order for them to be considered connected; the knowledge that results from such connections is connective knowledge" (p. 77). For Downes, the importance of connective knowledge is the interactions and relationships between entities.

Boitshwarelo (2011) developed a framework for connectivism to help researchers evaluate connectivist learning environments. Figure 2 shows this "framework of synergies" (p. 163) and combines the perspectives of Online Communities of Practice, Design-Based Research, and Vygotsky's Activity Theory as a way to conduct connectivist research. The power of this framework lies in its integration of well-established approaches already commonly used for online learning.

Figure 2

Framework of Synergies

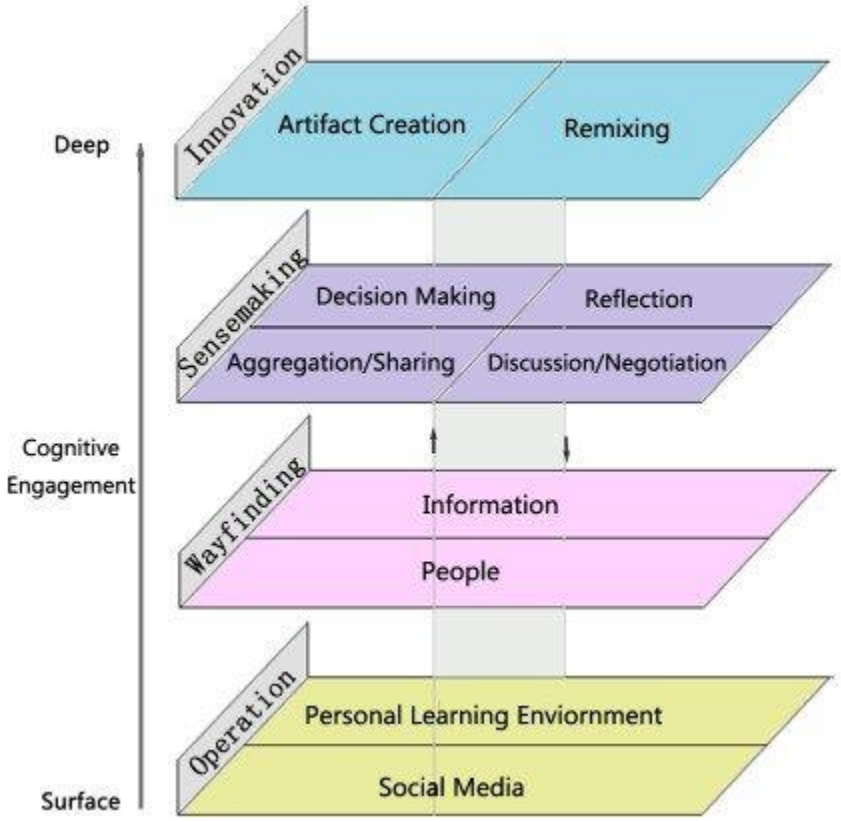


Note. From "Proposing an Integrated Research Framework for Connectivism," by B. Boitshwarelo, 2011, *The International Review of Research in Open and Distributed Learning*, *12*(3), p. 163 (https://doi.org/10.19173/irrodl.v12i3.881). CC BY.

Through their research on interaction, motivation, persistence, and deep learning in distance education, Wang et al. (2014) developed another framework for interaction and cognitive engagement in connectivist learning. Figure 3 contains four levels of interaction for connectivist learning: operation interaction, wayfinding interaction, sensemaking interaction, and innovation interaction. Each of these levels moves from surface interactions at the operation level to deeper interaction at the innovation level (p. 131).

Figure 3

Wang et al. (2014) Framework for Interaction and Cognitive Engagement



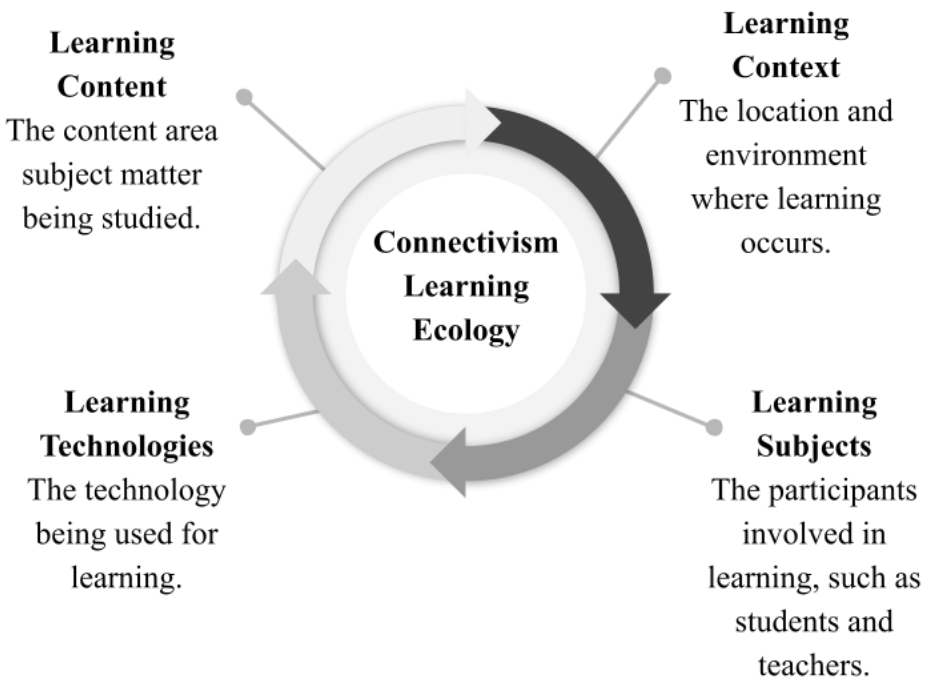
Note. From "A Framework for Interaction and Cognitive Engagement in Connectivist Learning Contexts," by Z. Wang, L. Chen, and T. Anderson, 2014, *International Review of Research in Open and Distance Learning*, *15*(2), p. 131 (https://doi.org/10.19173/irrodl.v15i2.1709). CC BY.

Learning Ecology

Using the work of Siemens (2004), Downs (2008), and others, Hung (2014) proposes a learning ecosystem rooted in connectivism. This ecosystem contains four connected parts that help one better understand connectivism in practice. Figure 4 illustrates the relationship between the areas of Hung's (2014) learning ecology.

Figure 4

Connectivism Learning Ecology



Note. Adapted from "Using Ideas From Connectivism for Designing New Learning Models in Vietnam," by N. M. Hung, 2014, *International Journal of Information and Education Technology*, *4*(1), 76-82. (http://www.ijiet.org/papers/373-L1023.pdf).

The first area, learning context, focuses on the environment where the learning happens. The context could be a lesson, a lab, a presentation, feedback on a paper, an online module, or anywhere else learning takes place. The learning subjects are the students, teachers, or groups who participate in the learning process. These learning subjects could have multiple roles at once. For example, a student could share new information with their teacher and the roles would be reversed in that context. Learning technologies are the digital tools used for learning. These technologies include social networks, databases, bookmarking software, learning management

systems, blogs, and more. Learning technologies are made even more important by the speed at which technology grows and changes. Lastly, the learning content is the formal and informal knowledge that is being sought. Learning content could range from how to add fractions or how matter changes when heated and cooled to how to change a tire or run for an elected office (Siemens, 2006; Hung, 2014; Mattar, 2018).

Connectivism and Digital Citizenship

Although it is not crucial for students to understand the learning theory, educators need to see the connection between these ideas and digital citizenship themes. Connectivism is related to digital citizenship because Internet users need strong digital citizenship knowledge and skills in order to successfully build connected knowledge online. Of the key principles for connectivism, Siemens (2005) shares several of them can be directly related to digital citizenship and experiences Internet users have online. One of Siemen's principles states that "learning and knowledge rests in diversity of opinions" (Siemens, 2005, "Principles of Connectivism" section). Bell (2011) notes that informal learning has always taken place outside of the classroom but with more and more people interacting online this is occurring more often through Web 2.0 tools that allow users to read, comment, like, and use what they find in meaningful ways.

Another principle of Connectivism notes that "learning is a process of connecting specialized nodes or information sources" (Siemens, 2005, "Principles of Connectivism" section). Connectivist learning requires learners to have some basic computer and network literacy skills. "Learners should have a good level of digital literacy and learning literacy [so that] as they learn they develop their capacity of self-regulation, orientation, and pattern recognition and to use a variety of technologies to enhance their learning" (Wang et al., 2014, p. 134).

A third principle of Connectivism states that “nurturing and maintaining connections is needed to facilitate continual learning” (Siemens, 2005, “Principles of Connectivism” section). Learners create their own personal learning environments using a variety of media to “create, access, and build networks with each individual at the centre of their own network” (Wang et al., 2014, p. 128). A longitudinal study in the UK focused on families and their digital lives found that some children invest a large amount in learning and sharing their skills online with informal communities. This includes some children who are not high-achievers at school (Bell, 2011).

Another principle of Connectivism recognizes that “currency (accurate, up-to-date knowledge) is the intent of all connectivist learning activities” (Siemens, 2005, “Principles of Connectivism” section). To support this, Boitshwarelo (2011) notes that “information is constantly changing and there is a need to continuously evaluate the validity and accuracy of knowledge in light of the new information” (Boitshwarelo, 2011, p. 162). Additionally, Open Educational Resources (OER) are increasingly popular, as educational institutions find ways to co-create and share knowledge around the world (Bell, 2011).

One last principle of Connectivism related to digital citizenship finds that “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, “Principles of Connectivism” section). Bell (2011) notes that “knowledge is simultaneously seen as a commodity that can be managed and sold (in digital libraries of e-books and online journals) and as a social activity, a commons within which knowledge flows as people share and refine ideas” (p. 100). In one final thought, Weigel et al. (2009) assert that:

> The Internet's potential for learning may be curtailed if youth lack key skills for navigating it, if they consistently engage with Internet resources in a shallow fashion, and/or if they limit their explorations to a narrow band of things they believe are worth knowing. Left to their own devices and without sufficient scaffolding, student investigations may turn out to be thoughtful and meaningful–or frustrating and fruitless (Weigel et al., 2009, p. 10).

Summary

Although the field of digital citizenship has only been around since the late 1990s Chapter 2 began by exploring the concepts of citizenship that go back to the 17th century in the United States. Table 3 laid out major themes from the past 20 years of scholarship on digital citizenship. This information was synthesized throughout the rest of the chapter to highlight and connect various topics that are being used to frame this study. Several prominent definitions and frameworks for digital citizenship were shared alongside national and state standards for teaching citizenship to students. Federal laws for digital citizenship were examined to see how they affect schools and teachers.

Chapter 2 also included relevant research about the importance of teaching digital citizenship, implementation challenges teachers and schools face, and an overview of the research on digital citizenship professional development. This chapter ended with an overview of the theoretical framework of Connectivism, its key principles, and how connectivism and digital citizenship are linked. Chapter 3 will provide an in-depth plan for the methodology of this study with connections to the literature shared in this chapter.

CHAPTER 3: METHODOLOGY

This basic qualitative study sought to understand how teachers define digital citizenship and how they integrate digital citizenship topics into their core content area curriculum. It also aimed to identify the effectiveness of professional development teachers have experienced and the supports they still need to incorporate digital citizenship into their lessons effectively. The introduction to the study presented in Chapter 1, and the overview of current literature presented in Chapter 2 show that core content area teachers need support integrating digital citizenship topics into their content. Chapter 3 outlines the researcher's methods to conduct this study. It describes the rationale behind choosing a basic qualitative research design, participant selection and sampling procedures, instrumentation and data collection methods, and data analysis procedures. This chapter underscores how the researcher administered the study and used the findings to answer the research questions.

Problem Statement and Research Questions

As previously stated in Chapter 2, there is a lack of literature regarding how teachers integrate digital citizenship into their core content area curriculum, even though researchers have documented that curriculum integration promotes learning transfer and increases problem-solving abilities (Wall & Leckie, 2017). This study aimed to examine how teachers define digital citizenship, integrate digital citizenship topics within their core content area subjects both formally and informally. It also examined personalized professional development opportunities teachers have had and still need. This study will examine the following questions:

1. How do core content area teachers define digital citizenship?
2. What are teachers' experiences integrating digital citizenship into their core content curriculum?

3. How have teachers' professional development experiences impacted the integration of digital citizenship into core content area subjects?
4. What professional development opportunities do teachers need regarding integrating digital citizenship into their core content curriculum?

Researcher's Role and Positionality Statement

Merriam and Grenier (2019) note that the researcher is the primary data collection instrument in qualitative research and the researcher is the one making meaning of the data collected from participants. It is important to acknowledge this because, as a researcher, my role as an insider influences my understanding of this work (Holmes, 2020). As a teenager in the late 1990s, I was on the front end of the digital and social media revolution. I was part of the first generation of students to have easy access to the internet and chat rooms from the comfort of my home, but no one taught me what I should or should not do with that access. Not only am I a digital native, but I am part of the system I am researching. In my role as an educator, I have seen the consequences of students not having the skills to thrive online. These consequences include loss of friendship, getting in trouble at school, and even police involvement in incidents that happen with technology. Although my first experiences were over 20 years ago, and as a society, we should have learned lessons from early mistakes, today’s news is filled with stories of life online going awry and the real-world consequences of these online actions. I want to help today's students better understand and thrive in the digital world where they live.

I believe that our digital world provides a robust social scene where both students and adults can learn and make connections with one another. However, I believe we must teach students how to do this safely and ethically. Time and time again, throughout my career in education, I have seen adults, both parents and teachers, who cannot support their students with

issues they face online. Since most adults did not grow up with the technology we have today, they do not know how to explain it to children and often remove the technology instead of teaching students how to use it properly. When we do that, we strip all learners of the power that comes with technology. Because of these strongly held beliefs, there may be a bias present. As a researcher, I recognize this bias and will use strategies including member checking, reflexivity, and careful documentation throughout the research process.

Research Study Design

This study used a qualitative approach to gain insight into the research questions by exploring educators' experiences teaching digital citizenship topics to students. Merriam and Grenier (2019) describe several established characteristics that can apply to all qualitative research:

a) a goal of understanding the meaning participants make of an experience,
b) the researcher is the primary instrument of data collection and analysis, and meaning is mediated through the researcher,
c) the process is inductive, and
d) findings are richly descriptive (p. 56).

Within this broad description of qualitative research, many designs exist where researchers focus on specific goals such as exploring a culture or building a theory. However, some studies "intentionally refuse to claim full allegiance to any single established methodology [and instead] deviate from its intent, rules, or guidelines in a way that they see as beneficial to the study" (Kahlke, 2014, pg. 39). These studies are referred to as basic qualitative research and combine several approaches or declare no specific methodology. The goal of basic qualitative research is to "understand how people make sense of their lives and their experiences" (Merriam & Tisdell,

2014, p. 24). The basic qualitative research approach was appropriate for this study because it sought to understand teachers' experiences with digital citizenship in their classrooms (Caelli et al., 2003; Lim, 2011; Kahlke, 2014; Percy et al., 2015)

Participant Selection and Sampling Procedures

This study used a criterion sampling of educators from the southeastern region of the United States. Unlike quantitative research, where the goal is to generalize information about a population based on a sample of that population, Polkinghorne (2005) notes that qualitative research aims to describe, understand, and clarify the experiences of a specific group. He states:

> Because the goal of qualitative research is enriching the understanding of an experience, it needs to select fertile exemplars of the experience for study. Such selections are purposeful and sought out; the selection should not be random or left to chance. The concern is not how much data were gathered or from how many sources but whether the data that were collected are sufficiently rich to bring refinement and clarity to understanding an experience" (Polkinghorne, 2005, p. 140).

Therefore, criterion sampling, a type of purposive sampling, was appropriate for this study because the researcher was looking for the experiences of teachers who have some knowledge of teaching digital citizenship concepts to students. Therefore, they needed to meet specific criteria to be included in the study (Palys, 2008). There were several requirements for inclusion in the study. First, the participants must have been current or former kindergarten through 12th grade teachers teaching at least one of the following subjects: literacy, science, social studies, or math. Next, the participants must have had three or more years of teaching experience. Finally, the participants must also have had experience teaching lessons from a digital citizenship program or curriculum to their students.

Participants were recruited via email, social media, and listservs (Appendix A). The initial recruitment letter was sent to educators who participated in a digital citizenship or digital safety professional development series through a university in the region. The professional development series is part of two different National Science Foundation (NSF) grants. The Project Digital Citizenship grant, led by Dr. Florence Martin from 2017-2020 aimed to increase digital citizenship and cyber safety skills in middle school teachers and students. Teachers participated in the professional development opportunity in the summer of 2018 or 2019. The experience of participating teachers ranged from 0 to 25 years, with 45% of participating teachers being middle school teachers, 25% elementary teachers, 20% from other groups, and 10% high school teachers. Subject areas taught by these teachers at that time included Instructional Technology (45%), core content area subjects (42.5%), and other subjects (12.5%) (Martin, Gezer, et al., 2020). The Digital Safety Immersion Project was also led by Dr. Florence Martin from 2020-2023 and focused on digital safety and privacy for elementary teachers and students.

When the initial round of recruitment only resulted in three participants the researcher broadened the search by sharing recruitment information on social media and listservs. Recruitment information was shared in Facebook groups including NC Digital Leaders Coaching Network, CMS | Advocacy for Public Schools, and North Carolina Teachers United. It was also shared on listservs including Google for Education Certified Trainers, Association of Technology Leaders in Independent Schools, and North Carolina Association of Independent Schools. These recruitment initiatives allowed the researcher to identify and interview 11 qualified participants.

The recruitment materials asked participants to complete a study eligibility questionnaire in Qualtrics (https://www.qualtrics.com). The questionnaire asked about the participant's years of experience, current and past roles, subjects taught, and experiences teaching digital citizenship lessons to students. Once the participant was deemed eligible based on the recruitment criteria the researcher invited participants to schedule an interview. When participants selected a time for the interview the researcher shared a calendar event with a unique link for the interview and a one-page paper on Connectivism (Appendix B), the theoretical framework for the study.

This study sought participants who could explain how teachers teach digital citizenship topics in their core content area courses through both an interview and an online questionnaire administered four to six weeks later. To encourage participation, participants who completed both the interview and questionnaire were entered in a drawing to win one of five $20 gift cards. The researcher sought a balanced variety of participants across grade levels and core content area subjects. Although all grade levels and core content subject area were not represented, all participants had experience in intermediate, middle, or high school grade levels in literacy, science, or social studies. Table 5 outlines the educators who participated in the study.

Table 5

Participant information

Name	Years in Education	Grade Level(s)	Subject Area(s)	Digital Citizenship Curriculum Lessons Taught
Mr. Pearson	6	9-12	Science	School Created Lessons
Mr. Derosa	15	K-5	All	NSF Digital Citizenship Participant, Common Sense Education, Google's Be Internet Awesome
Ms. Jessup	15	2-8	Science Social Studies	Common Sense Education
Ms. Sarver	15	6-8	Social Studies	National Association for Media Literacy Education, Pear Deck, Read Write Think
Ms. Lindor	15	K-12	Science	Common Sense Education, The Social Institute
Ms. Canton	17	5	All	NSF Digital Citizenship Participant
Ms. Melton	21	4-12	Science Social Studies Literacy	Common Sense Education
Ms. Travers	22	K-5	All	Common Sense Education
Ms. Mellay	23	K-8	All	Common Sense Education
Mr. Bryant	23	6-12	Science	NSF Digital Citizenship Participant, Common Sense Education, District Created Lessons
Ms. Merriman	24	6-8	Science Social Studies	Common Sense Education, ISTE

Data Collection Methods

Data was collected for this study using semi-structured interviews conducted on Zoom (https://www.zoom.us) and through a follow-up online questionnaire in Qualtrics (https://www.qualtrics.com). The initial interview was audio-recorded in Zoom and the

questionnaires were sent out through Qualtrics four to six weeks after the interview with each participant. Because it is sometimes difficult for participants to identify examples in the moment, the follow-up questionnaire provided additional time for participants to identify ways they integrate digital citizenship into their core content area curriculum. Participants were not told the specific questions on the follow-up questionnaire in advance to discourage them from changing their behavior to answer the questions in a way that they believe might appease the researcher.

Each interview began with the same protocol (Appendix C) but varied throughout the interview based on the participant's responses. Interviews sought to understand participants' beliefs regarding digital citizenship and their experiences integrating it into core content area lessons. After gathering background information on the participants, the researcher asked questions to determine how the teachers define "digital citizenship." After uncovering participants' perspectives of the term, the teachers were asked about their experiences with the digital citizenship curriculum and how they address digital citizenship in the classroom outside of the prescribed lessons from the digital citizenship curriculum. Next, participants were then asked about their professional development experiences with digital citizenship to uncover how they learned what they currently know about the subject. These questions were followed by questions about what the teachers perceive is needed to improve digital citizenship instruction. The researcher reminded teachers that a questionnaire would be emailed out four to six weeks after the initial interview.

The researcher shared the online questionnaire (Appendix D) with all participants through Qualtrics four to six weeks after the initial interview. This time was varied based on school start times and school holidays. The questionnaire asked participants to think back over

the last month and identify when digital citizenship topics came up naturally with students during conversations within their core content area classes.

Instrumentation

One of the established characteristics of qualitative data is the acknowledgment that "the researcher is the primary instrument of data collection and analysis" (Merriam & Grenier, 2019, p. 56). However, qualitative research must still be dependable and confirmable. One strategy to increase dependability and confirmability is careful documentation throughout the process (Lincoln & Guba, 1985). The researcher will employ two data collection instruments previously described: a semi-structured interview protocol and an online questionnaire for the participants to complete. In the spring of 2021, the researcher conducted a small pilot study with two intermediate-level, core content area teachers. One takeaway from the pilot study was that the participants struggled to identify specific examples of digital citizenship integration in their lessons during the interview. Lessons learned through this pilot led the researcher to add a follow-up questionnaire several weeks after the interview to provide participants with more time to think of instances where they recently addressed digital citizenship with their students. Six participants completed the questionnaire, but interview data from each participant was used regardless of whether or not they completed the questionnaire. This decision was made because the goal of the questionnaire was to provide participants with an opportunity to add to their experiences, but new questions were asked on the questionnaire.

The researcher developed the semi-structured interview protocol and the online questionnaire and validated it using an expert panel following Simon and White's (2011) Validation Rubric for Expert Panel. Three experts were recruited from the North Carolina Digital Leaders Coaching Network (NCDLCN). This group was coordinated through the Friday Institute

at North Carolina State University and provided leadership training on the North Carolina Digital Learning Competencies for school-based technology leaders in the state. NCDLCN participants are familiar with state and national standards on digital citizenship. The expert reviewers used the Validation Rubric to review the interview protocol and the online questionnaire. The expert review panel process helped the researcher ensure that both instruments were well aligned with the research questions and the literature on digital citizenship. Table 6 shows the alignment between the research questions and the questions found on the interview protocol and questionnaire that teachers completed.

Table 6

Research Question Alignment to Interview and Questionnaire Questions

Research Question	Interview & Questionnaire Questions
RQ1: How do core content area teachers define digital citizenship?	**Interview** Describe what you think of when you hear the term "digital citizenship." *What are some topics that fall under this term?* *What are some topics that don't fall under this term?* *What is the primary purpose of digital citizenship?*
RQ2: What are teachers' experiences integrating digital citizenship into their core content curriculum?	**Interview** Tell me about your experiences teaching digital citizenship lessons to your students. *Stand-alone lessons or integrated into your subject area lessons?* *From a curriculum? If so, which digital citizenship curriculum?* Tell me about a lesson when you integrated digital citizenship topics into your content area. *What subject?* *How often do you do activities like this?* *Do you have another example?* What are some successes you've encountered in integrating digital citizenship into your lessons? What are some challenges you've faced in integrating digital citizenship into your lessons?

Research Question	Interview & Questionnaire Questions
	Questionnaire What, if any, problems with digital citizenship issues have you had to address over the past few weeks? Have any of these issues been escalated outside of your classroom to an administrator? Please explain. What, if any, digital citizenship "wins" have you had over the past few weeks where you've been able to celebrate your students making good choices online? Please explain. Thinking back over the last few weeks, how have any of the digital citizenship themes you reviewed above come up in your classroom formally or informally? Please provide as many examples as you can think of. Is there anything else related to digital citizenship in your classroom you'd like to tell us about?
RQ3: How have teachers' professional development experiences impacted the integration of digital citizenship into core content area subjects?	Tell me how you learned what you currently know about digital citizenship. *Was this covered in any college courses you've taken?* *Have you attended any professional development sessions on this topic?* *What did you learn from those professional development experiences?* *How did those opportunities impact your view of digital citizenship and your classroom practice?*
RQ4: What professional development opportunities do teachers need regarding integrating digital citizenship into their core content curriculum?	**Interview** Who should be responsible for teaching students about digital citizenship? How do you think your students view digital citizenship? What skills do you think students need to be good digital citizens? What supports do you need to integrate digital citizenship into your lessons more often or more effectively? *Do you feel supported by your school administration? If so, how?* *Do you feel supported by families at your school? If so, how?* **Questionnaire** Are there any areas of digital citizenship you would like to learn more about in the future?

Data Analysis Methods

After each interview, the researcher reviewed the automatic transcript created from Zoom. Then, the audio recording from Zoom was used to update the transcript when it was incorrect or unclear. The completed interview transcripts were shared with each participant for member checking and approval (Sandelowski, 2008).

After each teacher approved the interview transcript and all questionnaires were returned, both the transcript and the questionnaire responses were imported into Dovetail (https://www.dovetailapp.com), a web-based qualitative data analysis computer software. Responses were analyzed using Fereday and Muir-Cochrane's (2006) six-step, hybrid approach of inductive and deductive coding and theme development. During the first stage, the researcher should develop the code manual. Next, the researcher should test the reliability of the codes. Afterward, the researcher should summarize the data and identify initial themes. During the fourth stage, the researcher applies the template of codes and completes additional coding. Next, the researcher connects codes to identify themes. During the final stage, the researcher corroborates and legitimates coded themes.

The first stage of this analysis began with an initial list of a priori codes developed to align how teachers define the term digital citizenship with research from the literature. These deductive codes were based on each of Ribble and Bailey's (2007) Nine Elements of Digital Citizenship as well as the ISTE (2016b) standards for students which states, "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" ('Digital Citizens' section). Table 7 shows the list, and includes the code label, definition of the term, and a description of how to recognize the theme.

Table 7

Initial Codes Developed A Priori

Label	Definition	Description/Key Terms
Digital Access	Full electronic participation in society (Ribble & Bailey, 2007)	Technology access at home/school
Digital Commerce	The buying and selling of goods online (Ribble & Bailey, 2007)	Online shopping, Spending money
Digital Communication	The electronic exchange of information (Ribble & Bailey, 2007)	Chat, Collaborate, Texting, Messages, Discussions
Digital Identity	How an individual is represented online based on their activities (ISTE, 2016b)	What you share online about yourself, Would you want someone to see this, Permanent, Reputation
Digital Literacy	The capability to use digital technology and knowing when and how to use it (Ribble & Bailey, 2007)	Search, Research, Sources, Credible, News/Media, Point of View
Digital Etiquette	The standards of conduct expected by other digital technology users (Ribble & Bailey, 2007)	Netiquette, Upstander or Bystander, Respect, Language, Behind the screen
Digital Law: Safe, Legal & Ethical	The legal rights and restrictions governing technology use (ISTE, 2016b; Ribble & Bailey, 2007)	Cyberbullying, Laws, Safety, Legal
Digital Rights & Responsibilities	The privileges and freedoms extended to all digital technology users, and the behavioral expectations that come with them (Ribble & Bailey, 2007)	Citizen, Behavior, Kindness
Digital Health & Wellness	The elements of physical and psychological well-being related to digital technology use (Ribble & Bailey, 2007)	Balance, Addiction, Health, Social emotional learning
Digital Security	The precautions that all technology users must take to guarantee their personal safety and the security of their network (ISTE, 2016b; Ribble & Bailey, 2007)	Passwords, Clickbait, Phishing, Spam, Oversharing, Personal information
Intellectual Property	Content or ideas created by an individual or entity (ISTE, 2016b)	Copyright, Plagiarism

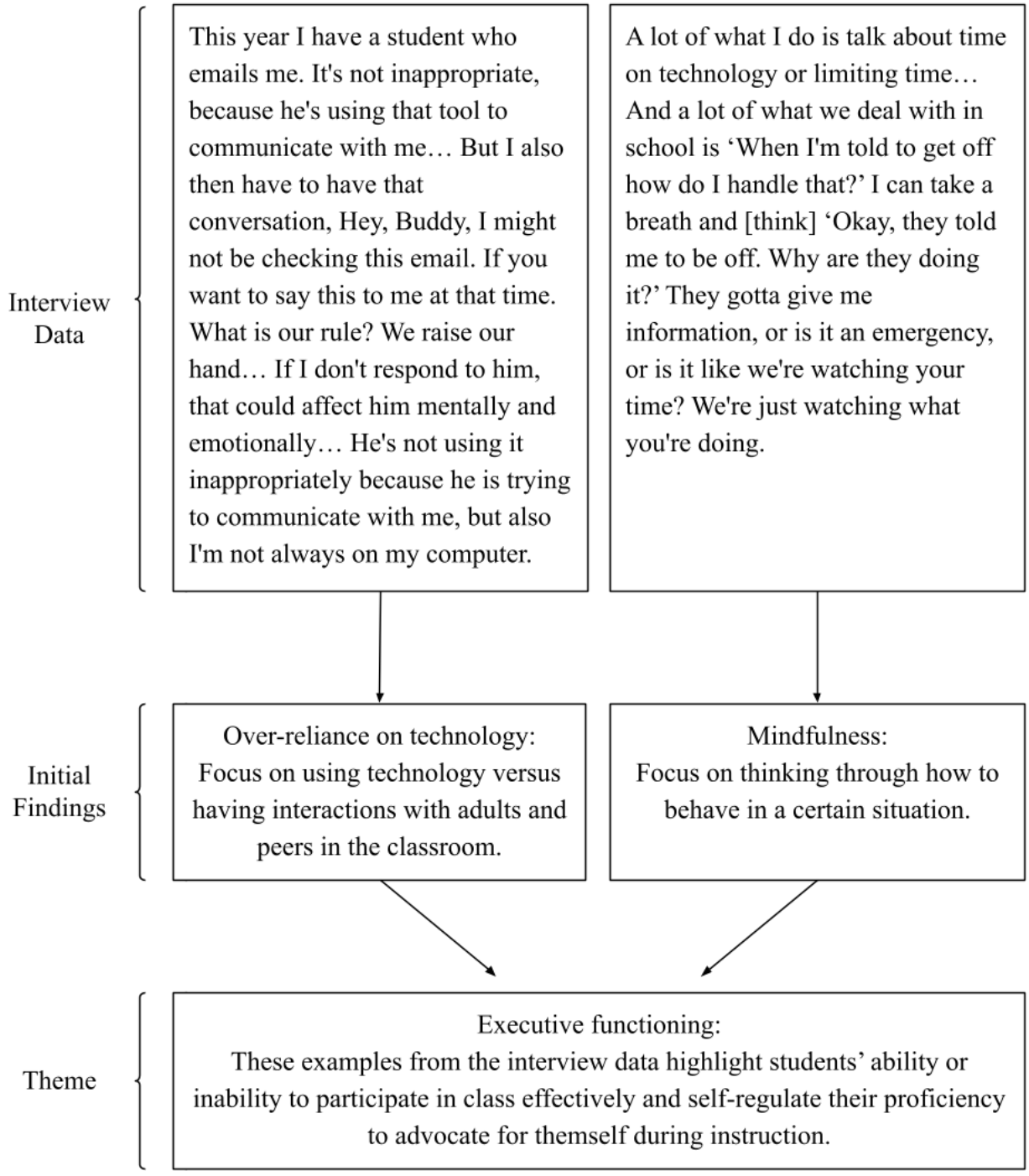
Adapted from *Digital Citizenship in Schools* by M. Ribble and G. Bailey, 2007, International Society for Technology in Education. Copyright 2007 by International Society for Technology in Education. Adapted from ISTE Standards: Students by International Society for Technology in Education, 2016. Copyright 2016 by International Society for Technology in Education.

Next, the researcher tested the reliability of the codes using transcripts from the pilot study conducted in the spring of 2021 and began adding additional codes. The researcher then listened to and re-read the transcripts and summarized them while specifically looking for information about each of the research questions and information shared regarding principles of connectivism and learning ecosystems. The researcher used Dovetail (https://www.dovetailapp.com) to apply preliminary codes to the new interview transcripts and questionnaire responses. During a second reading of the interview and questionnaire data, additional inductive codes were labeled in the transcripts to expand on ideas that did not align with the a priori codes. Next, the researcher connected codes to identify patterns and themes by reading highlighted sections that were similarly tagged and clustering these codes under headings based on the research questions in the software. During the final stage, the researcher reviewed the original transcripts and summaries to make sure the newest themes were still in line with the participants' responses. The coded themes were clustered under each heading and assigned phrases to describe the theme using language from the literature. This corroboration ensured that the themes were representative of the initial data.

Figure 5 provides an example of the researcher’s process of starting with interview data, inductively identifying a finding, and developing a theme.

Figure 5

Developing the executive functioning theme



Quality Maintenance

The researcher ensured quality throughout the research process in several ways. Table 8 highlights the strategies and elements of trustworthiness presented by Lincoln and Guba (1985). As well, it provides examples of how these strategies were implemented.

Table 8

Quality Maintenance

Elements of Trustworthiness	Strategy	Example
Credibility	Reflexivity	Journaling throughout the process.
	Prolonged engagement	Multiple touchpoints with participants over 4-6 weeks including initial interviews, member checking discussions, and questionnaires.
	Audio recording and transcription	Zoom notes vetted and the audio file saved until destroyed per internal review board.
	Member checking	Interviews were transcribed and shared with participants within one week.
	Triangulation	The use of multiple data sources and alignment with current literature.
Dependability	Careful documentation/audit trail	Consistency with documentation throughout all aspects of the study.
	Member checking	Interviews were transcribed and shared with participants within one week.
	Triangulation	The use of multiple data sources and alignment with current literature.
Confirmability	Careful documentation/audit trail	Consistency with documentation throughout all aspects of the study.
	Triangulation	The use of multiple data sources and alignment with current literature.
Transferability	Documentation of quality maintenance	Followed this chart consistently and documented the steps taken.
	Vivid descriptions	Thorough and precise descriptions in the findings from the study.

Benefits, Risks & Ethical Considerations

This study sought information about teachers' understanding of digital citizenship concepts and how the selected teachers integrate these concepts into their core content area

courses. It also explored information about the professional development experiences and needs of teachers on digital citizenship. The researcher is hopeful that school leaders and educational technologists will use the knowledge gained during this study to improve how schools educate teachers on digital citizenship and support educators to include concepts in core content area curriculum.

This study adhered to the rigorous standards of the Institutional Review Board (IRB) to minimize participants' exposure to risks. However, there are some risks when human subjects are used in research. All participants signed an informed consent and participated in the interviews willingly and of their own accord; they had the option to stop participation at any point during the process. The researcher maintained participants' confidentiality throughout the data collection and analysis process by using pseudonyms for the final report. Additionally, the interview recordings were stored following the IRB standards and destroyed at the completion of the study to minimize risk.

Some topics related to digital citizenship, such as online privacy and security or cyberbullying, may have been sensitive for participants. The researcher identified resources such as the National Center for Missing and Exploited Children's CyberTipline (https://report.cybertip.org/) and the United States Department of Health and Human Services Stop Bullying program (https://www.stopbullying.gov/resources/get-help-now) to share with teachers in case a topic arose where participants needed support or resources to address a problem. However, there was not a need to provide this support after the interviews and or questionnaire completion.

Limitations

One limitation of this study was the use of only 11 participants. Such a small group of

participants severely limits any generalizations to other educators; more participants would be needed to truly understand the complexities of teaching digital citizenship. Another limitation of this study was the use of the ISTE definition and Ribble's Nine Elements to define digital citizenship. There are many well-accepted definitions of digital citizenship in the literature and these two do not fully encompass the complexities of the subject. Finally, the requirement of the criterion sampling that participants must have experience teaching lessons from a digital citizenship curriculum is limiting. The experiences of those educators who may still be doing work on the topic in their classrooms but are unaware of the curricular options available to teachers and schools are missing in this research.

Summary

Chapter 3 outlined the methodology of this study. It began with the rationale for choosing a basic qualitative methodology to understand better how teachers define and integrate digital citizenship into their core content area curriculum and find ways to support teachers in this endeavor. This chapter then outlined the participant selection and sampling procedures. This study sought current or former K-12 core content area teachers who have some experience with digital citizenship to better understand how teachers integrate these topics into their curriculum. This chapter then presented data collection methods and instruments used to collect data. This study used Fereday and Muir-Cochrane's (2006) hybrid approach of inductive and deductive coding and theme development to analyze the data collected to see how the participants' understandings of digital citizenship align with the definitions in the literature. Finally, this chapter outlined quality maintenance standards used throughout the research process and the risks, benefits, and ethical issues that were considered while conducting this study.

CHAPTER 4: FINDINGS

This study's goals were twofold. First, it sought to understand how core content area teachers define digital citizenship and how they integrate digital citizenship topics into their core content area curriculum. It also sought to identify the impact of professional development teachers have experienced and the support they still need to incorporate digital citizenship into their lessons effectively. Chapter 4 outlines the findings from the interview and follow-up questionnaire data collected from current and former core content area teachers with experience teaching digital citizenship lessons to students.

Findings

The interview and questionnaire data collected from participants was analyzed using Fereday and Muir-Cochrane's (2006) six-step hybrid approach of inductive and deductive coding and theme development. The researcher used the theoretical framework of connectivism throughout the data analysis process to identify connections between participants' experiences and Hung's (2014) connectivism learning ecology. The learning context for most participants was in a traditional classroom setting. However, several participants shared experiences about distance learning or learning that took place outside of school. Learning subjects in this study were almost always kindergarten through 12th grade students and their teachers. There were several instances where the learning subjects were fellow educators of the participants or family members of the educators. Learning technologies addressed by participants were often school-provided devices or personal cell phones and tablets. Learning content consisted of a variety of core content area subjects during both formal and informal instructional opportunities. Although the learning ecology for most participants' experiences involved K-12 students and teachers using school-provided devices in traditional classrooms learning core content area subject matter,

there were some exceptions to that rule. The exceptions mostly involved teachers' experiences with professional development.

This chapter will begin with an overview of findings related to the theoretical framework of connectivism and then it will share the findings for each of the four specific research questions posed in Chapter 1:

1. How do core content area teachers define digital citizenship?
2. What are teachers' experiences integrating digital citizenship into their core content curriculum?
3. How have teachers' professional development experiences impacted the integration of digital citizenship into core content area subjects?
4. What professional development opportunities do teachers need regarding integrating digital citizenship into their core content curriculum?

Connectivism Findings

This study used the theoretical framework of connectivism to understand digital citizenship and its relevance to students and educators in schools. Connectivism proposes that learning occurs through establishing connections between information, experiences, and people. It asserts the importance of networks and diverse perspectives to shape knowledge and understanding. It contends that learning occurs with the development of new connections and the strengthening of existing connections (Siemens, 2005; Downes, 2008).

Participants were given a one-pager on Connectivism (Appendix B) along with a calendar invitation and link for the interview. They were asked to review the document before their interview. After establishing rapport, participants were asked to describe the learning theory in their own words and provide examples of this happening in their classrooms. For teachers who

were unable to preview the one-pager, it was shared with them through the chat feature and the researcher provided the definition. Of Siemens' (2005) eight principles of connectivism, teachers provided evidence of seven of them. Table 9 outlines Siemens' (2005) eight principles of connectivism and specific examples from the classrooms of the core content area teachers interviewed.

Table 9

Principles of Connectivism and Classroom Examples

Principles of Connectivism	Classroom Examples of Principles
Learning and knowledge rests in diversity of opinions.	Ms. Sarver stated, “Realizing that having different opinions isn't necessarily a bad thing but [being] able to back up what you're saying with facts and that there are facts in this world [and] just because someone questions it doesn't make it no longer valid. There are certain pieces of information that are inherently true - that there is such a thing as truth. But to evaluate where things are coming from? What is the bias? What are they trying to achieve?”
Learning is a process of connecting specialized nodes or information sources.	Ms. Melton admitted, “I even sometimes question the relevance of some of the things that I'm expected to teach, and it makes it very difficult for me to teach them in a meaningful way. It also makes it very difficult for my students to learn them if they don't understand. And if I don't understand it, I certainly can't get them to understand it. But then other things that they [question] ‘Why am I learning this?’ I can absolutely answer those questions. Whether or not, they internalize them, will determine whether or not they really learn what I'm trying to teach them.”
Learning may reside in non-human appliances.	No evidence of this principle.
Capacity to know more is more critical than what is currently known.	Ms. Lindor discussed the concept of encouraging a growth mindset with students and noted, “What you know is one thing, but being able to identify where you can go from there is more important.”
Nurturing and maintaining connections is needed to facilitate continual learning.	Ms. Mellay shared the story of a new student who only spoke Mandarin when arriving at her school. The class was studying poetry, and the teacher allowed the student to write her poem in Mandarin. The class worked to translate it and had a discussion of how the new student felt when she did not understand her classmates and how her work added to their understanding of the new student.
Ability to see connections between fields, ideas, and concepts is a core	Mr. Pearson said that his biggest challenge and his biggest reward in the classroom is “connecting our

Principles of Connectivism	Classroom Examples of Principles
skill.	learning to what else exists in the world."
Currency (accurate, up-to-date knowledge) is the intent of all connectivist learning activities.	Ms. Canton observed, "We have so many amazing experiences globally because of the digital world we are truly connected, there can be great things that come out of it, but you have to use it responsibly for the right reason in the right way."
Decision-making is itself a learning process.	Mr. Bryant spoke about a sixth grader who was going on dating sites. The student and his mother did not understand the impacts of the behavior. Once he shared information with the family about the increase in human trafficking in the region, they realized that the behavior was problematic. Ms. Bryant noted, "helping them understand some of those real-world impacts that we can tie into our community [was the lesson they needed]."

Note. Adapted from "Connectivism: A Learning Theory for the Digital Age," by G. Siemens, 2005, *International Journal of Instructional Technology and Distance Learning*, *2*(1), "Principles of Connectivism" Section (https://itdl.org/Journal/Jan_05/article01.htm). CC BY-NC-SA.

Although these participants' experiences only support a few of the Principles of Connectivism strongly, there is evidence of a link between teachers' classroom experiences with digital citizenship and the learning theory of connectivism. The most discussed ideas centered around metacognition and growth mindset (n=10) and recognizing the difference between others' points of view and one's personal perceptions (n=8). Several themes, which will be explored in the context of these findings in Chapter 5, emerged through this line of questioning: recognizing multiple perspectives, metacognition and growth mindset, and global connections.

Research Question 1: Defining Digital Citizenship

The first research question focused on how core content area teachers define digital citizenship. The data analysis of this section relied heavily on the a priori codes identified from Ribble and Bailey's (2007) Nine Elements of Digital Citizenship and the ISTE (2016b) standards for students. After coding using these elements and identifying several additional codes that did not fit neatly into the a priori codes, the researcher used the S3 Guiding Principles (Ribble & Park, 2019), introduced in Chapter 1, to sort the a priori codes and add additional themes identified in the data. Table 10 shares the frequency of themes defining the term and is organized by the S3 Guiding Principles. It includes related elements with their definitions, along with the additional themes sorted into their relevant S3 Guiding Principles.

Table 10

Frequency of Themes Defining Digital Citizenship

Guiding Principle	Related Elements/ Themes	Element Definition	Frequency	Interviews
Safe: Protect Yourself and Protect Others	Digital rights and responsibilities	The privileges and freedoms extended to all digital technology users, and the behavioral expectations that come with them	28	9
	Digital security	The precautions that all technology users must take to guarantee their personal safety and the security of their network	4	2
	Digital health and wellness	The elements of physical and psychological well-being related to digital technology use	8	6
	Cyberbullying	Not Included	6	3
Savvy: Educate Yourself and Educate Others	Digital communication	The electronic exchange of information	15	7
	Digital literacy	The capability to use digital technology and knowing when and how to use it	55	10
	Digital commerce	The buying and selling of goods online	2	2
	Intellectual property	Not applicable. Associated with the ISTE standards.	7	5
Social: Respect Yourself and Respect Others	Digital access	Full electronic participation in society	2	2
	Digital etiquette	The standards of conduct expected by other digital technology users	38	10
	Digital law	The legal rights and restrictions governing technology use	25	10
	Digital footprint	Not Included	14	6

Adapted from *The Digital Citizenship Handbook for School Leaders: Fostering Positive Interactions Online* by M. Ribble and M. Park, 2019, International Society for Technology in Education. Copyright 2019 by International Society for Technology in Education. Adapted from *Digital Citizenship in Schools* by M. Ribble and G. Bailey, 2007, International Society for Technology in Education. Copyright 2007 by International Society for Technology in Education.

The researcher classified digital rights and responsibilities, digital security, digital health and wellness, and cyberbullying under the guiding principle of Safe: Protect Yourself and Protect Others. Cyberbullying is the outlying theme in this category because it did not fit neatly into the elements outlined by Ribble and Bailey (2007) or the ISTE Standards (2016b). Because cyberbullying is a complex topic, it could also be categorized under the element of digital law. Themes and elements of this guiding principle occurred 46 times during interviews with nine participants. The guiding principle of Savvy: Educate Yourself and Educate Others included digital communication, digital literacy, digital commerce, and Intellectual Property, which are all rooted in the literature. These themes and elements occurred 79 times during interviews with 10 participants. The elements of digital access, digital etiquette, and digital law were included, along with the concept of a digital footprint, under the guiding principle Social: Respect Yourself and Respect Others. The concept of a digital footprint was included in the literature but not under the definitions laid out by Ribble and Park or the ISTE Student Standards. Like cyberbullying, defining a digital footprint is complex and crosses several elements. These themes and elements occurred 79 times during interviews with all 11 participants.

Three of the 11 participants discussed device care as part of their definitions of digital citizenship. Although the literature does not support this concept as part of the definition, it is important to note that it did come up several times during the interviews. Ms. Lindor, Mr. Bryant, and Mr. Derosa spoke briefly about teaching students to take care of technology, especially lower elementary students. Mr. Derosa stated that one of the first lessons he teaches students is "about how we take care of things and part of being a good citizen at school is looking out [and] being respectful of things." He said students would often bring attention to

how they took care of their devices, such as carrying them correctly and not storing them in unsafe places.

Research Question 2: Digital Citizenship Teaching Experiences

The second research question focused on teachers' experiences integrating digital citizenship into core content instruction. These experiences varied between participants, due partly to their differing grade levels and subject areas taught. However, the themes identified by the researcher were relatively consistent across student grade groups. Table 11 identifies the primary themes and subthemes related to how teachers discuss digital citizenship in the context of their core content area classes.

Table 11

Digital Citizenship Core Content Area Integration Focus

Themes	Subthemes	Interviews	Student Grade Group
Responsibility	Teachers	11	All
	Other School Staff	11	All
	Families	7	All
Student Behavior	Prosocial Behavior	9	All
	Disruptions and Consequences	9	All
	Activity Monitoring Software	4	All
News & Media Literacy	Supporting an Argument with Facts	8	All
	Research Skills	7	All
	Reliable Sources	7	All
Non-Cognitive Competencies	Executive Functioning	10	All
	Balance	5	All
Technology Use	Technology for Learning	7	Elementary & High
	Learning About Technology	5	All

These five themes are well aligned with the connectivism learning ecology. The first theme of responsibility relates to learning subjects. People involved in teaching digital citizenship include teachers and school staff, as well as families and community members. Student behavior is related to several areas of the learning ecology. The subtheme of prosocial behavior is related to learning subjects. Addressing disruptions and consequences is related to learning context, and activity monitoring software is related to learning technologies. News & Media Literacy is the only finding related to learning content related to core content area instruction. Non-cognitive competencies connect to the learning subjects and context. Lastly, technology use is related to learning technologies from a standpoint of using them to learn and learning how to use them. The discussion that follows will explore each of these themes and subthemes.

Responsibility

There was a unanimous agreement between participants that it is the job of teachers and schools to educate students on digital citizenship, which aligns with information shared in the literature review on the school's role in teaching this information (Phillips & Lee, 2019). It affirms work from the National Forum on Education Statistics (2016) that says teachers, schools, districts, and families are all responsible for this work.

Teachers and Other School Staff. Each participant agreed that teachers and everyone else in schools who use technology should be sharing information on digital citizenship with students. However, this differs from what most participants see in their schools, where technology specialists and school librarians handle much of the work. Ms. Mellay said, "Everybody who works with [students], and works with them on the computer; whether it's the classroom teacher or the media specialist, or the administrators," should help share digital citizenship with students. Ms. Canton agreed that even though this work is often put into the hands of specialists, it is the job of

> Classroom teachers, not just the specialists they see once a week… So, who is with them every day? Who is the one going out to recess with them? Who is the one that's knowing the good, the bad, and the ugly of their days? They're gonna tell me before they go and tell a media teacher, and I think by having more of a relationship with them when we do these lessons, they feel safer sharing than in that 45-minute block every two weeks.

For teachers who disagree that everyone in the building is responsible for this work, Mr. Derosa argued,

> I think that it's good for [technology and media specialists] to talk about it… I want [teachers] when they go back and do informational writing lessons [with students], I want

> them to go back and share those [same] lessons again… If I'm saying it [in technology], they're getting it from one person. It's kind of like, 'Well, that's what he thinks.' But when everybody is sharing the same idea, it needs to be over and over and over in multiple places so [students] can get it.

Ms. Merriman fears that "a lot of teachers, a lot of times see that it's just one more thing on their plate."

Families. More than half of the participants believe that the work should also be on families. Ms. Canton and Ms. Melton noted that students are only in class sometimes, and many of the issues teachers face start outside of school. However, these teachers recognize that most parents do not know about digital citizenship and are unaware of the problems that are starting at home. Ms. Merriman would like to see "parents [teach] it a little bit more" but also believe that parents need digital citizenship lessons as well because they may not have the skills. Ms. Travers believes that at least part of the problem is that technology changes so rapidly that parents cannot keep up with what students are doing online. Ms. Canton believes that it is the responsibility of the school to "instruct the parents" about digital citizenship.

Student Behavior

The concept of student behavior relating to digital citizenship arose quickly as a theme. Each of the 11 participants discussed some aspect of student behavior during the interview or on the questionnaire. Teachers' experiences with digital citizenship fall into three broad categories: prosocial behavior, disruptions and consequences, and activity monitoring software.

Prosocial Behavior. This concept is rooted in psychology and is generally defined as an altruistic behavior that promotes interactions and building relationships with others. Some examples of prosocial behavior in children and adolescents include collaboration, sharing,

helping, and consoling others. This is behavior that can be taught and cultivated in schools. (Penner et al., 2005; Eisenberg et al., 2006; Caprara et al., 2014; Roberts et al., 2014). Several participants spoke at length on this topic and discussed concepts such as helping students "make good choices," being "a good person," and being "respectful and helpful" online and off.

Mr. Pearson noted that many teachers are in the profession to "craft students…to be good humans." He joked that today, "we [must] copy and paste (that is a technology joke) that onto the Internet for them." Several other participants shared this mentality that digital citizenship is similar to developing good citizens in the real world. Ms. Travers explains digital citizenship to her students the same way she explains behavior on the playground and explained,

> When we go out into recess on the playground, we are respectful to people. We are kind to people. Well, with digital citizenship, you are going into a virtual recess, a virtual classroom, or a virtual activity, and you still want to be respectful, use the equipment appropriately, [and] be kind and helpful with your words. All of those things work in the computer world… as well, and we always try to focus on that.

Mr. Bryant spoke at length on the importance of using digital interactions and connections to build relationships and help students make a positive impact in their communities. He admitted,

> At the end of the day, I really want our students to be good citizens. I would tell them, even when I teach chemistry, as much as I love chemistry, this is not the most important thing I will give you. The most important thing I can give you is when you get out of school that you're equipped to deal with the realities of life and make a difference for other people. And giving them that ability and those thoughts when they're still developing in middle and high, in elementary school can't be overlooked.

He noted that it is "really gratifying" to see the relationship-building he started in the classroom pay off over his career. Through social media, he stays connected to many of his former students, and has seen them "doing really good things over social media… [and] really trying to build up our community."

Disruptions and Consequences. Along with discussions of developing the behavior that teachers want to see in their students, there were instances where participants had to address disruptive digital behaviors with their students. These disruptions to learning included problems such as plagiarism, honor code violations, cheating, generating drama between peers, and trying to sneak around the rules and expectations. Ms. Canton noted that students have become "very comfortable saying what they wanted without any repercussions. [Online] you [don't] get to see their hurt feelings. You [don't] get to see the ramifications of it spreading around. You just comfortably said it." Ms. Sarver said that she sees her students being "more vicious [online] than they would be if they were face to face." Participants believe that peer pressure and online anonymity have fueled this behavior, especially in recent years.

Ms. Travers mentioned the importance of having conversations with students when issues arise because she wants her students to understand that "things you do on the computer could break a law and could cause serious, serious consequences." Ms. Melton said that even though her school has a responsible use policy for students, all teachers do not follow it the same way. She recognized that having different expectations from class to class is challenging for students. Ms. Jessup shared that before giving a student a device to use, she shares her technology agreement with students so that they understand her expectations and the consequences of breaking her rules. Ms. Merriman fears that even though she is having these conversations with students, they do not take it seriously. Her students have said, "adults are just trying to bash us,

and not [let us have] a good time." But she continually reminds them, "No, actually, guys, this is one of those things you really need to listen to us on."

Activity Monitoring Software. Four participants mentioned that they take advantage of activity monitoring software such as DyKnow (https://www.dyknow.com) and the Apple Classroom app while teaching to help keep some of these disruptions, like cheating and being off-task, under control. Ms. Melton remarked that it is easy to notice when students have sites like Snapchat or Discord up, but the activity monitoring software helps identify distractions such as using a Google Doc to text in class. Ms. Travers noted that although she does not look at it all the time, she can check in on "the students who you have to keep an eye on [and] I can say, 'Hey bud, Look, I can see your screen if I need to, so just let's make sure we're doing what we're supposed to be doing. Ms. T is looking at this to make sure you're staying safe." Ms. Mellay acknowledged that although this software is helpful, it is "only good if I'm staring at it. If I've got kids working online, and I'm working with a group, then I can't multitask. I can't split my attention a hundred percent in both directions… but it does allow us to have conversations [about what students are doing in the moment] when they are off-task." Ms. Merriman and Ms. Travers also mentioned the positive aspects of other features of this type of software. They find it invaluable to be able to lock students on a screen during a test or turn the screen off to get their attention during class. They also like being able to send private messages and reminders to students while they are working or see students' screens and help them when they are learning virtually.

News & Media Literacy

The second theme that emerged during the coding was using research opportunities during core content instruction to discuss digital citizenship concepts with students. Upon the

second review of the data, the researcher noticed that concepts initially marked as research and research skills were specifically aligned with the concept of News and Media Literacy, which was initially identified in the literature review in the work of Common Sense Education (n.d.a) and James et al. (2019). More specifically, Common Sense Education (n.d.b) says that students should be able to "identify, evaluate, and use information effectively, find credible and trustworthy sources, and give proper credit" ("Overview" section). Additionally, this is well aligned with the concept of Digital Literacy and intellectual property from the teachers' definitions of the concept identified in research question one. Based on these various definitions and information shared by the participants, the researcher identified three subdomains under News and Media Literacy: supporting arguments with facts, research skills, and reliable sources. Ms. Melton summed up this theme by saying,

> The Internet is a big space, and for better or worse, we have access to all of it all of the time. But understanding how best to get the information that you need, how best to get information that's credible and reliable. That takes a skill set."

Supporting Arguments with Facts. Educators across student grade groups identified the ability to form arguments and support them with facts as a skill imperative for students in our digital world. Teachers who discussed this theme said that they want students to know that it is acceptable to have different opinions but being able to debate and use factual information to support an opinion is essential. Mr. Pearson said this is crucial in the scientific community between researchers who argue back and forth and build on one another's ideas. Similarly, students need to learn how to "engage online with people who we disagree with." Ms. Jessup remarked that students need to form educated opinions and skills such as,

> Being able to summarize the information and be able to use that information to support what they think, or how they, I don't even want to say how they feel, but to form that opinion, they've got to be able to decipher what the information is telling them and be able to support their answer. I think that is one of the most important things [to learn], and we're nowhere near that.

Research Skills. Participants lauded the importance of teaching students research skills. Several elementary teachers noted that it is vital for even the youngest students to understand that doing a quick search online to answer a question of curiosity or learn how to play a video game is a research skill. The middle and high school teachers discussed more formal research skills, such as writing comprehensive research papers on an assigned topic. Regardless of grade level, participants believe that this is an important skill for students in a digital world. Participants also identified teaching research skills as a good way for teachers to integrate concepts like copyright and plagiarism into their curriculum.

Ms. Merriman described her most impactful activity for teaching students how to conduct research as an infographic her students across multiple classes created to share information about World War I and World War II. Each class of students would gather information on a topic, and then students from other classes would go through and fact-check the work of the previous class. She said this activity engaged her students, and they would leave notes and articles for students in other classes to support or rebuke their work.

Reliable Sources. Identifying reliable sources was identified as an important aspect of this theme. One way Ms. Sarver does this, is by regularly sharing current events with her students and looking at several stories about the same event. This allows her students to discuss why one source would include certain information and another might leave that information out.

She does this throughout the year because she does not "want them just regurgitating. I want them analyzing it and looking at it… [and thinking] how does this affect me?" Ms. Lindor uses resources from The News Literacy Project (2023), a non-profit working to stop the spread of misinformation, to help students learn more about the importance of reliable sources.

This is another area that crosses grade groups. It starts with finding reliable answers to basic questions in elementary school. Ms. Mellay confirmed that one of her "big wins" occurred when she overheard her fourth graders questioning the validity of each other's sources from a research project on animal adaptations. It develops into finding and using "primary, secondary, and tertiary sources" for Ms. Mellay's students in older grades. Mr. Bryant noted that this skill set will only become more critical as "information is just [going to continue to] become even more robust with what we have access to. But not all information is necessarily good information or useful information or relevant."

Non-Cognitive Competencies

The notion of non-cognitive competencies with technology comes from the National Educational Technology Plan (Office of Educational Technology, 2017). These non-cognitive competencies (also referred to as social and emotional learning) include "successful navigation through tasks such as forming relationships and solving everyday problems. They also include development of self-awareness, control of impulsivity, executive function, working cooperatively, and caring about oneself and others" (p. 10). This work is also relevant to Ribble and Bailey's (2007) digital health and wellness element and encompasses the Media Balance & Well-Being concept from Common Sense Education (n.d.a). The three subthemes which emerged in this section are executive functioning, balance, and social and emotional learning.

One way Ms. Canton discussed these concepts with her students is through literature. She excitedly described a book she reads to her students each year titled, *Ungifted* by Gordon Korman. The story is about a boy who is accidentally sent to a school for gifted learners and introduces another student to YouTube. The other student gets very distracted and starts to fall behind in his work because he does not have the skills to navigate life online. She uses this story as a relatable opportunity to discuss developing these non-cognitive competencies with her students.

Executive Functioning. Executive functioning, a skill that begins in infancy, is loosely defined as "a group of processes that allows individuals to self-regulate the ways in which they interact with their environment" (Strosnider & Sharpe, 2019, p. 3). Although many children develop strong executive functioning skills, others have deficits in these areas. These skills need to be taught and reinforced by teachers and caregivers. Although promising research is available on executive functioning in students in general, research into executive functioning and technology is scant (Cumming et al., 2020; Warsaw et al., 2021).

Ms. Melton described her students' problems with executive functioning as "things that teenagers aren't usually good at… like impulse control, emotional regulation, being able to filter the noise." Ms. Canton and Ms. Jessup both noted that they spend a lot of time trying to help students focus on the task at hand and put aside all of the digital distractions. Ms. Travers discussed a student who relies too heavily on technology to communicate with her. She said that he would often email her for help while she was teaching and she did not see it until later in the day. She fears, "if I don't respond to him, that could affect him mentally and emotionally."

Balance. Educators at all levels addressed the desire to help students find balance with technology. Ms. Lindor referred to minimizing screen time in younger children and knowing

when to walk away from social media for older students. Having around-the-clock access to phones is not helping students find balance in their lives. They are surrounded by devices all day during school and at home. Mr. Derosa explained that time on technology is something he spends much time covering with students. He says they practice inner dialogue on balance, so they react appropriately when it is time to unplug.

> Either they need to limit it on their own [and] think 'hey, I need to go out and play' or 'are there times [when] it's more healthy for me to be off?' A lot of the other [problems] we deal with in school is when [students are] told to get off how [they] handle that. [Being able to take] a breath and saying, 'Okay, they told me to be off. Why are they doing it? They gotta give me information, or is it an emergency?' Or is it that [teachers are] watching your time [online]?

Mr. Bryant stresses to his students that "they [have] to learn to manage the device. And not let the device manage them and their behaviors."

Technology Use

The final theme that arose during the data analysis was the juxtaposition between using technology for learning and learning how to use technology and how both can be opportunities to learn about digital citizenship. Mr. Bryant affirmed that teachers should,

> Try to have kids share their learning in a powerful and impactful way, [so] students are seeing that they're not just here to take a test at the end of the year. They're trying to really share what they're learning. For a lot of kids, I think that's really powerful when they have the ability to go in and create a graphic and show a quote, or [build] a slideshow. That [students are] beginning to see these digital software and apps can actually help me showcase what I'm learning. And so, when we look at citizenship, you're

> creating something better than what you found. You're sharing your information. And I don't think their teachers often realize when they're doing that that it's a really important aspect of positive digital citizenship.

Technology for Learning. Because teachers and students spend much instructional time online in personalized and blended learning environments, teachers should be able to discuss digital citizenship topics as they arise in class. Ms. Lindor, who is in a teacher support role this year, shared that she is working with other teachers to set goals to help their students

> Become more independent and autonomous with technology and [set] goals of creating personalized learning experiences with technology [for their students]. While these are not digital citizenship goals, they do include digital citizenship elements in that teachers are showing them how to use tools, like Flip, in a safe and respectful manner.

Ms. Travers and Mr. Derosa admitted that their students spend time on their devices working on personalized playlists and pathways, which "grow their brain and meet them where they need to work." However, when this is happening, there are times when the class has to regroup and address an issue of digital citizenship. Ms. Mellay shared an entertaining story about an incident her assistant principal witnessed during an observation. Her students found information online about "a special holiday on April 20 where we celebrate weeds" when they were learning about plants. She acknowledged that these things occur, and the class had to take a few moments out of the lesson to discuss appropriate search engines and how to find what you are looking for online.

Learning About Technology. The teachers who spoke on this issue acknowledged that although many topics can be integrated into other subject areas, some of them need to be taught explicitly. All participants had experience teaching explicit digital citizenship lessons from their school, district, or national organization such as Common Sense Media or Be Internet Awesome.

Mostly, they do not mind teaching these lessons but agree that for a more significant impact, students need to hear it for more than a few lessons. Ms. Canton shared a few other books she likes to use each year with her students, such as *The Technology Tail* by Julia Cook and *Nerdy Birdy* by Aaron Reynolds, which explore digital footprints and balance. Mr. Bryant summarized the need for digital citizenship and classroom integration,

> I don't think [teaching digital citizenship] has to be stand-alone, but occasionally you may have to do some standalone [lessons]. But also helping the classroom teacher, connect those moments as just-in-time moments of teaching digital citizenship and reinforcing those good behaviors. So, at the heart of it, the classroom teacher needs to be aware and consciously do that… I think it's natural once they just change their thought process.

Research Question 3: Professional Development Experiences

Research question three focused on the impact of professional development on teachers' ability to integrate digital citizenship into core content subjects. The literature review identified the importance of providing professional development opportunities to teachers on digital citizenship (Gilmour, 2019; Li et al., 2020; Martin, Gezer, et al., 2020; Ribble, 2012; Ribble et al., 2004). Nevertheless, none of the participants in this study could recall a formal professional development opportunity on digital citizenship that impacted their practice or any undergraduate or graduate coursework that made an impact. However, they were able to share some personal and professional development opportunities that have impacted their practice, which are outlined in Table 12.

Table 12

Impactful professional development opportunities

Learning Opportunities	Interviews
Personal Learning Networks	7
Parenting & Family	6
Self-Exploration	5
Technology Facilitators & Other Technology Champions	4
Participating in the Digital World	3

Looking at these five themes through the lens of the connectivism learning ecology is helpful. Professional learning networks (PLNs) are informal groups of educators who communicate and collaborate online for professional development on their own time (Warlick, 2009). PLNs are a classic example of Hung's (2014) learning ecology because they harness learning technologies to meet the learning content needs of learning subjects in multiple learning contexts. Like PLNs, the themes of self-exploration and participating in the digital world encompass each area of the learning ecology. Even though the next theme is outside the sphere of influence of the school, parenting and family is connected to learning subjects. Lastly, technology facilitators and other school-based technology champions in schools are connected to learning content and subjects. The discussion that follows will explore each of these themes.

Personal Learning Networks

A Personal Learning Network (PLN) is an informal group of educators who communicate and collaborate online for professional development on their own time. These groups rose in popularity as access to social networks has become more prevalent (Tour, 2017; Oddone et al., 2019; Haas et al., 2020). Mr. Derosa admitted that most of what he has learned about digital

citizenship has come from his "team of other tech facilitators [in his district], and we do a lot of group work [to prepare] lessons, [and] we'll share a lot of that." Mr. Bryant's PLN is larger and he interacts with other educators using Twitter to connect "with other people with similar hashtags, or similar interest [including] authors…like Jennifer Casa-Todd." Other participants noted that their PLNs were developed through state and national organizations such as North Carolina Society for Technology in Education or the National Council for Social Studies. These PLNs allow teachers to collaborate not only online, but in person at conferences and other networking events hosted by the organization or its members.

Parenting & Family

Six participants credited their knowledge of digital citizenship to being parents or collaborating with other family members to learn more. Several of them spoke about how parenting has increased their understanding of digital citizenship, as they have encountered successes and stumbling blocks with their children. Ms. Travers had an experience with her daughter where they had to have a conversation about things happening in group chats. She said,

> If you notice something going on with a friend, talk to an adult. Let that person know because these days, it's like sending notes. Right? You're probably getting true feelings from these friends of yours, and if they're struggling, you've got to find a way to help. If you're in a group chat, and someone in your group is being unkind, and you feel uncomfortable, leave that group chat. We have to give them those models of hey, if this is happening… because they might not realize, Oh, they were just kidding right, but they might not have been. So just having my kid be aware and being able to help in situations.

Self-Exploration

Mr. Pearson, Ms. Lindor, and Ms. Merriman have mostly learned what they know about digital citizenship by teaching themselves as situations arise. Ms. Mellay mentioned coming across articles with scare tactics such as "be aware of these abbreviations your kids are using in chat room," which are often outdated. However, when she comes across one, it reminds her to "keep my ear to the ground, and [make] sure that I am aware of any potential dangers out there." Ms. Jessup noted that participating in the Google Educator Certification Program made her more aware of digital citizenship and encouraged her to learn more about the topic.

Technology Facilitators & Other Technology Champions

Four teachers credited school-based technology facilitators that provide professional development and can push into classrooms to help and model digital citizenship integration. Ms. Canton said her technology facilitator;

> Was really great when we got our iPads. She would do monthly PD [and] book clubs for technology. So, I was very fortunate to be in there from the ground up, so as I was learning it, then my kids were learning it, and then we were discovering together, so we could [collaborate and] figure out the pitfalls of all of that.

Mr. Pearson recognized another teacher at his school who organizes an e-sports club and does a great job engaging with students about how to play and compete online.

Participating in the Digital World

Three teachers shared that they have learned a lot by participating online in social networks. Ms. Mellay admitted that although she is technologically savvy, recently, she got tricked by an article on a parody site and had to explain to some friends after she shared it. Ms. Melton shared her experiences learning about technology as a teen in the early days of MySpace

and when it cost money to send and receive every text message. She compared that with students today who have been given devices without those parameters and are making many mistakes. Ms. Mellay fears that many educators are scared to participate in the digital world and do not talk about it with students in hopes that it will go away. However, she said that her experience makes her feel more prepared to discuss issues with her students when they arise.

Research Question 4: Professional Development Needs

The final research question sought to determine what types of professional development opportunities teachers need to integrate digital citizenship into their core content curriculum. Many of the educators interviewed concurred with Ms. Melton, who replied to this question with the adage, "I'm not sure. I don't know what I don't know." However, they all recognized that there is always more to learn. Although there was not a direct answer to this line of questioning, several needs arose throughout the interviews. Participants in this study want to help make this content relevant and authentic for their students. They also want to raise awareness of digital citizenship among their peers and build a community around teaching students about this topic. Furthermore, they seek resources to integrate this subject matter into their curriculum effectively. Table 13 provides the number of interviews where each of these needs was addressed.

Table 13

Professional development needs of participants

Professional Development Needs	Interviews
Relevant & Authentic	9
Awareness & Community	9
Resources	5

These three needs related to professional development for educators are well connected to all four areas of the connectivism learning ecology. Participants in this study want to help make this content relevant and authentic for their students, raise awareness of digital citizenship among their peers to build a community around teaching students about this topic, and identify resources to integrate this subject matter into their curriculum effectively. Each of these requires matching the right learning subjects in the appropriate learning context with the technologies needed to meet a variety of learning content areas. The following discussion will explore each of these themes.

Relevant & Authentic

Teachers are looking for relevant and authentic activities to teach students about digital citizenship. Often when digital citizenship lessons are taught separately, the students struggle to make connections to what they look like in real life (Office of Educational Technology, 2017). Ms. Mellay and Ms. Merriman admitted that the biggest challenge in teaching this content is that students do not understand how this topic has an effect on them. Mr. Bryant expressed frustration that much of what is available either needs to go deeper to address the problems he is seeing or they are outdated, and the students did not see the value. Ms. Melton finds that her students "think they know everything. So, [she thinks] it can be very difficult to teach digital citizenship in a meaningful way." She was surprised that a lesson on cyberbullying from one of the survivors of the Parkwood massacre did not resonate with her students. She believed it would be relevant, but her students felt that "it doesn't apply to them."

Mr. Derosa is surprised there is not more information on this topic, "especially from the business community." He believes this might be good for students because schools should teach students what jobs expect when they are hired. Ms. Jessup noted that her students were the most

engaged when the activities were "participative" and gave them something to discuss with peers outside of class. One of her best activities was when she worked with students to log their time on their devices. She admitted that they were not

> Intrinsically motivated to cut that time down. But it was eye-opening to them to see how much time they spend. I really like that a lot of the phones now have that data that tells them, 'Hey, you spent an average of 5 hours a day on YouTube.' Just showing them that [feature] and making [them recognize it]. Mindfulness really is the success.

Awareness & Community

These participants believe that there needs to be more awareness of digital citizenship issues among adults. Ms. Melton admitted that many of these topics are not as familiar to her as other topics in her curriculum, "so I guess for me, it's just not something that's as much part of my lexicon and my toolbox." Ms. Lindor reiterated the challenge that "we have teachers who aren't good digital citizens. So, it would be great if they were [learning] curriculum alongside the kids to have a better understanding of what that looks like."

Many of them also felt alone when trying to teach or spread awareness. Not having a community of educators to share ideas with is challenging. Ms. Jessup noted, "When I was teaching digital citizenship, I don't know that anybody else was in the school building." Ms. Lindor said that she was doing her best, but felt "like a one-person show." She "didn't really have anyone to reach out to in [her] professional network, [because] didn't know anyone else [teaching] it."

Resources

Having the right resources to teach students about digital resources is vital (Bell, 2011; Martin, Gezer, et al., 2020). Aside from the need for more relevant and authentic activities for

students, three teachers noted that building resources to teach digital citizenship on their own would be challenging. Ms. Melton confessed that she is "not creating a bunch of digital citizenship lessons [because] there's just not the time or energy." Mr. Derosa also noted that digital citizenship

> Is not math. It's not A and B equal C. It's not that. It's an amorphous idea about how does this affect you? Why are we doing this?… It's very hard to build [content] for this. It's hard to build games for this. It's hard to build experiences, and it's so important. It's amazing to me that no more is done with it.

Summary

This study aimed to understand how core content area teachers define digital citizenship and how they integrate digital citizenship topics into their core content area curriculum. It also sought to identify the types of professional development teachers have experienced and the support they still need to incorporate digital citizenship into their lessons more often and effectively. This chapter outlined the findings from the interview and follow-up questionnaire data collected from current and former core content area teachers with experience teaching digital citizenship lessons to students. The four research questions for this study were developed from gaps in the literature regarding how these teachers, in subjects such as literacy, science, and social studies, integrate digital citizenship into their classes. This chapter was organized by research questions, with themes and sub-themes following each question.

The first question asks how core content area teachers define digital citizenship. This information was gathered from the interviews using a priori codes from the literature and additional deductive themes that were identified during the data analysis process. Participants' responses were summarized in Table 8. There was not much consistency in participant frequency

related to individual elements and themes from the literature. However, when the participant's responses were sorted by Ribble and Park's (2019) S3 Guiding Principles of Safe, Savvy, and Social there was more alignment. Nine participants discussing the safety aspects of digital citizenship, and all 11 participants discussed being both savvy and social online.

The second question on teachers' experiences integrating digital citizenship into their core content curriculum was summarized in Table 11. Five major themes, with two to three subthemes each, were identified and explored in order mentioned by participants. Responsibility was the only theme with unanimous agreement and discussion from all participants. They all agreed that teachers and other school staff are all responsible for teaching students about digital citizenship. The high-level agreement with this theme is likely because there was an explicit question that asked participants who should be responsible for teaching students about the topic. Student behavior was the next theme identified where participants noted digital citizenship in relation to prosocial behavior, disruptions, and their consequences, and using activity monitoring software as an opportunity for digital citizenship. News and media literacy was the third theme identified with more than half of participants mentioning opportunities for digital citizenship relating to developing the skills of supporting an argument with facts, research skills, and identifying reliable sources online. Non-cognitive competencies were mentioned by teachers at all levels. The concept of executive functioning was raised by ten participants and helping students find balance with technology was addressed by five. The last theme focused on the duality of technology use and the teacher's role in helping students use technology for learning and learning how to use technology.

Research question three asked how teachers' professional development experiences impacted the integration of digital citizenship into core content area subjects. Surprisingly, none

of the participants were able to recall specific, impactful professional development experiences on digital citizenship. However, participants were able to identify some of the impactful ways they learned about the topic including personal learning networks, parenting or family members, self-exploration, technology facilitators or other technology champions at their schools, and participating in the digital world.

This chapter concluded with an analysis of research question four which asked about the teachers' professional development needs regarding integrating digital citizenship into their core content curriculum. Three significant needs were identified. The teachers want ways to help make this content relevant and authentic for their students because much of what they currently use to teach the topic is not engaging for learners. These teachers want to raise awareness of digital citizenship among their peers and build a community around teaching digital citizenship both in their schools and across schools. Lastly, these teachers need more effective resources to integrate Digital Citizenship into their curricula.

Chapter 5 will conclude this study with a comprehensive discussion of the findings and implications of this study for school leaders, and teacher education programs, and provide recommendations for future research.

CHAPTER 5: DISCUSSION

This study explored two broad aspects of K-12 core content area teachers' experiences with digital citizenship. It sought to understand core content area teachers' experiences with digital citizenship, including how teachers define digital citizenship and integrate it into their core content area curriculum. It also aimed to identify teachers' professional development experiences and needs regarding digital citizenship. It is vital for schools to teach students about digital citizenship because of our society's increased internet access and reliance on this access in and out of schools. However, to teach the topic effectively, educators must understand it themselves (Miniwatts Marketing Group, 2023; Choi, 2016; Hollandsworth et al., 2011).

The four research questions in this study were developed from gaps in the literature concerning core content area teachers' experiences learning about and teaching digital citizenship. This study used a basic qualitative approach to answer each research question because this methodology seeks to discern how individuals understand their lives and their experiences. Basic qualitative research incorporates methods and techniques from multiple qualitative methodologies that align with the purpose of the study and the research questions. This research approach, outlined in Chapter 3, was appropriate for this study because it sought to understand teachers' subjective experiences with digital citizenship in their classrooms (Merriam & Tisdell, 2014; Percy et al., 2015).

This study used a criterion sampling of 11 educators from the southeastern United States. The inclusion criteria for the study required participants to be current or former core content area teachers with prior experience teaching digital citizenship lessons to students. Core content area teachers were the primary focus of this study because the onus for teaching digital citizenship is often placed on technology teachers, school librarians, and other elective teachers. Nevertheless,

core content area teachers spend the most time with students and have the most opportunity to make digital citizenship relevant to students (Hollandsworth et al., 2011; Phillips and Lee, 2019). This study also required teachers to have experience teaching digital citizenship lessons to students, so that the teachers would have a basic understanding of digital citizenship topics and be able to discuss and recognize opportunities for digital citizenship outside of stand-alone lessons. The researcher invited qualifying educators to participate in a semi-structured interview and complete a follow-up questionnaire. The researcher transcribed the interviews and imported them into a web-based qualitative data analysis software, along with participants' responses from the questionnaire. The data was analyzed using Fereday and Muir-Cochrane's (2006) six-step, hybrid approach of inductive and deductive coding and theme development. It was coded deductively using a priori codes based on Ribble and Bailey's (2007) Nine Elements of Digital Citizenship and the ISTE (2016b) Digital Citizenship standard for students. When the researcher reviewed the data again, additional codes were inductively identified, added to the program, and labeled in each transcript. Then the researcher interpreted the inductive and deductive themes using the research questions to complete the thematic data analysis process.

The researcher outlined the findings from the interview and follow-up questionnaire data collected from current and former core content area teachers with experience teaching digital citizenship lessons to students in Chapter 4. Findings related to the theoretical framework of connectivism were shared through classroom examples of each of Siemens' (2005) Principles of Connectivism. Additional findings were organized by research questions, with themes and sub-themes following each question. Findings from the first question on how core content area teachers define digital citizenship were summarized using the S3 Guiding Principles from Ribble and Park (2019). The guiding principle of Safe: Protect Yourself and Protect Others was

discussed 39 times by nine participants. The guiding principle of Savvy: Educate Yourself and Educate Others was addressed 49 times during interviews by ten participants. The guiding principle of Social: Respect Yourself and Respect Others was discussed 55 times during interviews by all 11 participants. Findings from the second research question on teachers' experiences integrating digital citizenship into their core content curriculum revealed five major themes: Responsibility, Student Behavior, News & Media Literacy, Non-Cognitive Competencies, and Technology Use. Research question three asked how teachers' professional development experiences impacted the integration of digital citizenship into core content area subjects. Although none of the participants could recall specific, impactful professional development experiences on digital citizenship, several themes, including Personal Learning Networks, Parenting & Family, Self-Exploration, Technology Facilitators & Other Technology Champions, and Participating in the Digital World arose. Chapter 4 concluded with research question four on teachers' professional development needs regarding integrating digital citizenship into their core content curriculum. Three significant needs were identified as themes. These teachers want ways to help make this content relevant and authentic for their students, raise awareness of digital citizenship among their peers, and build a community around teaching digital citizenship. They need resources to integrate this subject matter into their curricula.

Through the discussion, Chapter 5 will revisit the theoretical framework of connectivism introduced earlier in this study and connect it with findings from the two broad aspects of digital citizenship addressed in this study. It will also look at the implications of this study for school leaders and teacher preparation programs and provide recommendations for future research.

Discussion

Theoretical Framework

This study used the theoretical framework of Connectivism to understand digital citizenship and its importance to students and teachers. Connectivism proposes that learning is "actionable knowledge" and focuses on "connecting specialized information sets, and the connections that enable us to learn more are more important than our current state of knowing" (Siemens, 2005, "Connectivism" section). Connectivism recognizes that available information is continually growing and changing and that it is essential for learners to recognize when this happens. It also acknowledges that we are constantly surrounded by information and must continuously determine what is necessary and relevant.

The researcher considered this theoretical framework throughout this study's data collection and analysis. Findings related to connectivism aligned with the participant's experiences and the research. During the interview, the researcher asked participants about their understanding of connectivism and how those concepts reveal themselves in the classroom. Although these participants' experiences only support a few of the Principles of Connectivism strongly, there is certainly evidence of a link between digital citizenship and the learning theory of connectivism. The most discussed ideas centered around metacognition and growth mindset (n=10) and recognizing the difference between others' points of view and one's personal perceptions (n=8).

It is beneficial for educational technologists working in schools and districts to see the connection between these ideas of connecting information in meaningful ways and digital citizenship themes. The following discussion of findings from the study continues to use connectivism to understand the relevance of explicit and implicit instruction on digital

citizenship in the core content area classroom and help shed light on how digital citizenship prepares students to be active participants in a connectivist society. This discussion will be organized by the two broad aspects of teachers' experiences with digital citizenship. First, it will discuss core content area teachers' experiences instructing their students on digital citizenship topics. Then it will discuss core content area teachers' professional development experiences and needs pertaining to digital citizenship.

Digital Citizenship Teaching Experiences

Research questions one and two sought to understand how teachers define digital citizenship and how they instruct their students on the topic in their core content area classes. Participants were asked how they define digital citizenship to determine which topics they see as relevant to the subject. The definition of the topic used for this study and as the a priori code was based on Ribble and Bailey's (2007) Nine Elements of Digital Citizenship and the ISTE (2016b) standards for students. Although this is not a perfect definition of digital citizenship, it encompasses the topics most scholars use to define the subject (Choi, 2016; Hollandsworth et al., 2011; James et al., 2019; National Council for the Social Studies, 2013; Pruitt-Mentle, 2008; Ribble, 2004). After defining the term, participants were asked about their experiences teaching students about digital citizenship. Although responses were aligned with the literature, these findings were disappointing because there were very few examples of digital citizenship being integrated into the curriculum (Armfield & Blocher, 2019; Geller 2016; Gilmour, 2019). Most of the identified themes relate to how teachers address issues with digital citizenship or need support addressing problems. The examples provided by participants were not necessarily focused on how teachers actively create space to discuss digital citizenship topics in classrooms

as part of core content curriculum. The discussion that follows will focus on the various themes from the findings in the fourth chapter related to classroom instruction on digital citizenship.

S3 Guiding Principles

Ribble (2021) discussed the problem with competing definitions of digital citizenship, leading to confusion about the topic. In light of the COVID-19 pandemic, he spoke about the importance of building a consensus on the topic and teaching students how to live life online. Ribble and Park's (2019) S3 Guiding Principles of Safe, Savvy, and Social provided a simpler way to define digital citizenship and proved to be the most balanced way to define digital citizenship. Although findings from question one were widely varied for each element or theme, using the slightly broader principles of Safe, Savvy, and Social encompasses the bigger picture of digital citizenship. Ribble and Park aligned the original nine elements of digital citizenship under the Safe, Savvy, Social principles. Participants in this study mentioned an average of four of the nine elements of digital citizenship during interviews and on questionnaires. The fewest elements mentioned by one participant was three, and the greatest number of references by one participant was seven. Participants in this study most frequently discussed digital literacy (Savvy), digital etiquette (Social), digital rights and responsibilities (Safe), and digital law (Social). The topics discussed the least by participants were digital security (Safe), digital commerce (Savvy), and digital access (Social). Although the discussion was spread more evenly when looking at the S3 Guiding Principles, there are still gaps in teachers' understanding of digital citizenship.

The areas that participants overlooked are concerning. Only two participants addressed digital security, but the United States Federal Trade Commission received more than 4,223,800 identity theft and fraud complaints in 2021 (Federal Trade Commission, 2022). Additionally,

more than half of Americans do not understand how companies and the government use data collected from them. Over 80% of Americans feel they lack control over the data companies and the government collect from them, yet participants did not address this as part of digital citizenship (Auxier et al., 2019). Two of the 11 participants discussed digital commerce. However, a recent Pew Research study found that 91% of US adults ages 18-49 make online purchases using smartphones. Americans shopping online may be unaware of the concerns relating to digital citizenship with these transactions. The third area somewhat absent from participants' definitions of digital citizenship was the concept of digital access. With increased awareness of the digital divide since the beginning of the COVID pandemic, it is surprising that only two participants addressed this area. Although it was not absent from the literature before the pandemic, there is more evidence of integrating diversity, equity, and inclusion as part of digital citizenship. This may be due to the social movements, such as Black Lives Matter, that received increased attention during the pandemic (Ribble & Miller, 2013; Choi & Cristol, 2021; Capuno et al., 2022; Mirra et al., 2022). Ms. Mellay addressed this by stating the importance of teaching "inclusion and valuing opinions from multiple perspectives. [We need to make] sure that kids' voices are all heard, and that they feel heard."

Responsibility

Discussion of who should be responsible for teaching students about digital citizenship is not related directly to core content area instruction. However, it is still relevant to this study due to its connection to the connectivism learning ecology area of learning (Hung, 2014). More than ever, teachers recognize that technology impacts students' lives. Teachers are beginning to take on the responsibility of helping students learn about digital citizenship. Educators also realize that even though students are digital natives and familiar with technology, they still need adults

to help them learn how to use technology meaningfully and safely (Kim & Choi, 2018; Lauricella et al., 2020). The greatest agreement on any theme among participants in this study was on who should be responsible for teaching students about digital citizenship. They unanimously agreed that teachers and other school staff should bear responsibility for teaching students about digital citizenship. Over half of them agreed that students' families should also be responsible. Ribble (2021) encourages a "community learning approach" when it comes to teaching digital citizenship to students (p. 77). He notes that we cannot only rely on teachers or other adults in the building to teach digital citizenship because students are receiving information on responsible technology use from parents or caregivers (85%) and coaches or other community members (41%).

Although participants in this study recognize the importance of schools providing digital citizenship training for students, there is still work to be done. A 2020 study of middle school students found that only 37.1% received digital citizenship training at school, and an additional 49% indicated that they were unsure if they received digital citizenship training at school (Martin, Hunt, et al., 2020). Teachers in this study recognized several issues that inhibit their ability to teach digital citizenship in the classroom. For example, although there was consensus that teachers and other school staff should share the responsibility of teaching students about digital citizenship, there was little agreement on how to do this. Except for digital literacy, which ten of the 11 participants discussed, they were mostly unaware of how digital citizenship could fit naturally into their core content areas. Ms. Melton admitted that teaching pre-packaged lessons from programs like Common Sense Media is easier. However, she does not "feel ownership over them, so it can be hard to really feel invested and feel authentic… [when it does not] feel organic because it isn't."

The literature shows that students should begin learning about digital citizenship as soon as they are given access to technology (Hollandsworth et al., 2011; Hollandsworth et al., 2017; James et al., 2019; Rideout & Robb, 2020). This will likely start at home, so parents must be educated on responsible technology use. Students, teachers, families, and community members must actively practice digital citizenship (Curran & Ribble, 2017; Ribble & Park, 2019). This is further evidence that all parties must work together to ensure students receive consistent information on digital citizenship. It is important to remember that "If we don't take the lead on this issue, [students] will take the lead. We cannot afford to assume this won't happen. Teachers set the tone and need to be advocates of digital citizenship" (Hollandsworth et al., 2011, p. 42).

Student Behavior

Almost every educator who started teaching in the last 30 years has been gifted a copy of Harry Wong's *The First Days of School*, a leading book on classroom management that has sold over 4.25 million copies (EffectiveTeaching.com, 2023). With classroom management at the front of teachers' minds, it is no surprise that participants in this study found the need to address digital citizenship as part of their classroom management strategy. The discussion of student behavior fell into three broad categories: disruptions and consequences, activity monitoring software, and encouraging prosocial behavior. These three broad categories are connected to the connectivism learning ecology areas of learning context, learning technologies, and learning subjects, respectively.

Instructional time spent on classroom management with technology was a hindrance for teachers in this study. As this is a struggle for many educators, it is no surprise that teachers spend significant time addressing digital citizenship problems in classrooms. In alignment with the findings from this study, where six of the seven elementary teachers experienced problems

with student behavior, Lauricella et al. (2020) found that teachers of even the youngest elementary school students must address behaviors in the classroom that are related to a lack of digital citizenship education for their students. At times it might seem easier to take the device away as a classroom management strategy, but Hallman (2019) shared the story of a student whose device was taken away after too many infractions, which severely limited his participation in class. Not only was his ability to collaborate with his peers hindered, but he also used assistive features of his device, like voice-to-text, because he struggled with writing. His needs were not met without the device, leading to more problems. Banning devices will not fix these issues; schools must address the problems (Selwyn & Aagaard, 2019).

Several participants discussed online activity monitoring software that their schools invested in. A study from the Center for Democracy & Technology found that 81% of teachers in K-12 schools report using some form of student activity monitoring software for strategies including tracking logins to certain applications, viewing student's screens, monitoring and flagging keyword searches, closing browser tabs when students are off-task, and taking control of the device (Grant-Chapman et al., 2021). However, simply using activity monitoring software does not stop off-task behavior. Teachers still need to address the root cause of student behavioral problems with technology, such as the misconceptions about multitasking (Aagaard, 2019). Additionally, there are concerns from teachers and parents about student privacy when activity monitoring software is being used that need to be addressed (Kumar et al., 2019; Hankerson et al., 2022).

Encouraging prosocial behavior arose as an opportunity for core content area teachers. Prosocial behavior is an altruistic behavior that promotes interactions and building relationships with others (Penner et al., 2005; Eisenberg et al., 2006; Caprara et al., 2014; Roberts et al.,

2014). Although behavior management with technology is a problem for many educators, there is some promise that focusing on teaching prosocial behavior might decrease the necessity of only addressing digital citizenship after problems have occurred. Teaching prosocial behavior could be integrated into many areas, including character education and social studies classes. However, we must give teachers the language to include the digital world in these conversations (Kim & Choi, 2018; Öztürk, 2021; Harrison & Polizzi, 2022).

News & Media Literacy

One of the most promising findings from this study was the clear connection that participants saw between digital citizenship and news and media literacy topics that are part of core content area instruction. These topics included supporting an argument with facts, research skills, and identifying reliable sources online. Every teacher addressed at least one of these three subthemes during the interview or on the questionnaire. This is important because of the increased reliance on social media as a news source. A 2022 study found that 42% of Americans currently use social media as their news source. That is up from 27% in 2013. When looking at Gen Z teens (ages 14-19), this number jumps to 51% (Newman et al., 2022; Westcott et al., 2022).

With this number of students using social media as their news source, online research skills are vitally important. None of the teachers in this study shared how they assess students' ability to support arguments, conduct research, or identify reliable sources online. However, they all agreed on the importance of these skills. Tools such as Cifci and Ünlu's (2020) Online Research and Reading Comprehension Skills Scale could be used to evaluate students' news and media literacy. Cifci and Ünlu note that new literacy skills are constantly developing, and they

outline a five-step process for online research and reading comprehension that includes “(1) identification of a problem (2) reaching information to solve a problem (3) evaluation of the information, (4) synthesis and (5) reporting” (p. 290).

In alignment with the research shared, connectivism recognizes skills fundamental for students to possess in digital learning environments. These skills, which are well aligned with other news and media literacy skills explored in the literature and the findings from this story, include the ability to identify important details when presented with an abundance of information, staying current and informed, and ensuring validity of resources (Siemens, 2006; Foroughi, 2015). Participants in this study already integrate digital citizenship into news and media literacy topics. They recognize the importance of digital resources in supporting arguments, conducting research and building research skills, and identifying reliable resources. There is hope that other teachers will include digital citizenship discussions when teaching general and argumentative research skills (Öztürk, 2021; Capuno et al., 2022).

Non-Cognitive Competencies

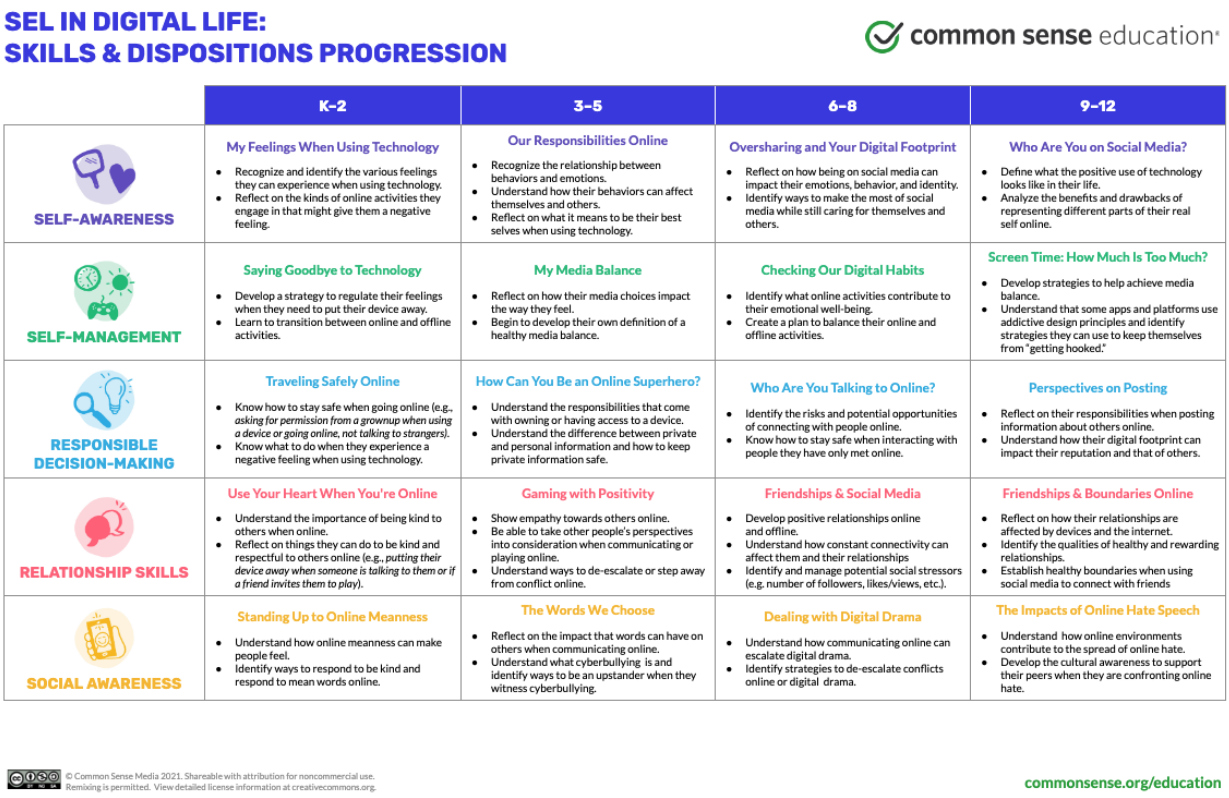
The National Educational Technology Plan recognizes the importance of non-cognitive competencies needed for success with technology integration. These non-cognitive competencies (also referred to as social and emotional learning or SEL) include "successful navigation through tasks such as forming relationships and solving everyday problems. They also include development of self-awareness, control of impulsivity, executive function, working cooperatively, and caring about oneself and others" (Office of Educational Technology, 2017, p. 10). Connectivism also identifies related skills essential for students to possess in digital learning environments. Skills include staying focused on tasks despite distractions, connecting to and relating with others, recognizing patterns and trends, accepting uncertainty, and accepting

responsibility when navigating online learning (Siemens, 2006; Foroughi, 2015). Like other non-cognitive competencies, both online and off, these skills need to be taught.

The Collaborative for Academic, Social, and Emotional Learning (CASEL) is the preeminent resource for social and emotional learning in the United States. They offer an SEL framework, referred to as The CASEL 5, that identifies important areas of competence, including self-awareness, self-management, social awareness, relationship skills, and responsible decision-making. They provide developmentally appropriate resources for schools to use and help students develop these competencies from kindergarten through 12th grade (Collaborative for Academic, Social, and Emotional Learning, n.d.). In collaboration with CASEL, Common Sense Education, presented a webinar on SEL and digital citizenship. Figure 6 aligns the CASEL 5 to lesson plan objectives from the Common Sense curriculum.

Figure 6

Common Sense Education Alignment to CASEL 5



SEL IN DIGITAL LIFE: SKILLS & DISPOSITIONS PROGRESSION

common sense education

	K–2	3–5	6–8	9–12
SELF-AWARENESS	**My Feelings When Using Technology** • Recognize and identify the various feelings they can experience when using technology. • Reflect on the kinds of online activities they engage in that might give them a negative feeling.	**Our Responsibilities Online** • Recognize the relationship between behaviors and emotions. • Understand how their behaviors can affect themselves and others. • Reflect on what it means to be their best selves when using technology.	**Oversharing and Your Digital Footprint** • Reflect on how being on social media can impact their emotions, behavior, and identity. • Identify ways to make the most of social media while still caring for themselves and others.	**Who Are You on Social Media?** • Define what the positive use of technology looks like in their life. • Analyze the benefits and drawbacks of representing different parts of their real self online.
SELF-MANAGEMENT	**Saying Goodbye to Technology** • Develop a strategy to regulate their feelings when they need to put their device away. • Learn to transition between online and offline activities.	**My Media Balance** • Reflect on how their media choices impact the way they feel. • Begin to develop their own definition of a healthy media balance.	**Checking Our Digital Habits** • Identify what online activities contribute to their emotional well-being. • Create a plan to balance their online and offline activities.	**Screen Time: How Much Is Too Much?** • Develop strategies to help achieve media balance. • Understand that some apps and platforms use addictive design principles and identify strategies they can use to keep themselves from "getting hooked."
RESPONSIBLE DECISION-MAKING	**Traveling Safely Online** • Know how to stay safe when going online (e.g., *asking for permission from a grownup when using a device or going online, not talking to strangers*). • Know what to do when they experience a negative feeling when using technology.	**How Can You Be an Online Superhero?** • Understand the responsibilities that come with owning or having access to a device. • Understand the difference between private and personal information and how to keep private information safe.	**Who Are You Talking to Online?** • Identify the risks and potential opportunities of connecting with people online. • Know how to stay safe when interacting with people they have only met online.	**Perspectives on Posting** • Reflect on their responsibilities when posting information about others online. • Understand how their digital footprint can impact their reputation and that of others.
RELATIONSHIP SKILLS	**Use Your Heart When You're Online** • Understand the importance of being kind to others when online. • Reflect on things they can do to be kind and respectful to others online (e.g., *putting their device away when someone is talking to them or if a friend invites them to play*).	**Gaming with Positivity** • Show empathy towards others online. • Be able to take other people's perspectives into consideration when communicating or playing online. • Understand ways to de-escalate or step away from conflict online.	**Friendships & Social Media** • Develop positive relationships online and offline. • Understand how constant connectivity can affect them and their relationships • Identify and manage potential social stressors (e.g. number of followers, likes/views, etc.).	**Friendships & Boundaries Online** • Reflect on how their relationships are affected by devices and the internet. • Identify the qualities of healthy and rewarding relationships. • Establish healthy boundaries when using social media to connect with friends
SOCIAL AWARENESS	**Standing Up to Online Meanness** • Understand how online meanness can make people feel. • Identify ways to respond to be kind and respond to mean words online.	**The Words We Choose** • Reflect on the impact that words can have on others when communicating online. • Understand what cyberbullying is and identify ways to be an upstander when they witness cyberbullying.	**Dealing with Digital Drama** • Understand how communicating online can escalate digital drama. • Identify strategies to de-escalate conflicts online or digital drama.	**The Impacts of Online Hate Speech** • Understand how online environments contribute to the spread of online hate. • Develop the cultural awareness to support their peers when they are confronting online hate.

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Note. From "SEL In Digital Life: Skills & Dispositions Progression," by Common Sense Media, 2021. (https://docs.google.com/document/d/1Eb07J2xsgqYRqbdGZOVC3VvnnVN5b_ioEUbRjgrYz1Y/preview). CC BY-NC-SA.

Teachers are beginning to recognize the overlap between digital citizenship and these non-cognitive competencies, including executive functioning. With increased awareness and training, teachers should be able to include digital citizenship as they teach non-cognitive competencies such as self-awareness and problem-solving in other classroom contexts. Growing evidence shows the importance of these skills as they relate to academic success and a need to increase educator capacity for implementation in the classroom. These skills must be taught from

a young age and be modeled for students (Curran & Ribble, 2017; Office of Educational Technology, 2017; Strosnider & Sharpe, 2019; Lauricella et al., 2020).

Teachers in this study also addressed difficulties finding balance with technology. Finding balance online is difficult for teens. In a 2022 study, only 36% of teens admit to spending too much time online, but 54% believe that it would be hard to give up social media. YouTube was the most commonly used app among this age group, with 19% revealing they are almost constantly on YouTube and an additional 41% using the app multiple times per day. TikTok was the second most used app, with 16% of teens confessing they are almost constantly on the app and an additional 32% admitting to visiting the app multiple times a day (Vogels et al., 2022). These are obvious distractions to learning, and there is some misunderstanding by students and teachers about using technology to multitask. Selwyn & Aagaard (2019) argue that "The phenomenon of digital distraction does not relate to students' attention simply being divided between multiple tasks at once, but to their attention being diverted from the primary educational task by the use of digital devices for off-task purposes" (p. 12). Educators and students must identify these misconceptions and find ways to work together to minimize diversions from learning.

Technology Use

Teachers' attitudes and beliefs towards teacher-centered pedagogies versus student-centered pedagogies impact their views on technology use in the classroom and their ability to integrate digital citizenship concepts into their core content area instruction. Educators who prefer teacher-centered pedagogies typically do not consider technology an essential tool for accomplishing learning outcomes. However, "student-centered teachers see technology-mediated instruction as vital to 21st century learning" (Hilton & Canciello, 2018, p. 4). Classrooms can no

longer be places where the teacher is the expert and students are handed the information to use for assignments. This does not prepare students for future careers. Learning in classrooms must shift to learner-centered, cooperative, and social learning, where students work together to explore a variety of resources online and use that knowledge to show understanding (Burclaff & Johnson, 2016; Rank, 2018; Lang, 2016; Foroughi, 2015).

Digital citizenship is not simply using technology, but setting goals, cultivating skills, and becoming fluent in technology skills, but students must be active and participate online to build these skills (Kim & Choi, 2018). Two subthemes emerged from participants under the theme of technology use. There is a dichotomy between learning about technology and using technology to learn. Ribble (2021) addresses these two technology use issues noting there are things that educators need to do to prepare students for the future:

> [They] need to infuse technology literacy into the established curriculum. These skills pose a unique problem, which is difficult in the digital realm, where educators need to be aware that there is a quick leap from being just connected in the classroom to access out to the entire world. A curriculum of appropriate usage will need to be taught at two levels at once—the horizontal (the space immediately around them) and the vertical (the connection to the rest of the world). These will not be easy concepts to master, especially in a synchronous practice, but they need to be taught to prepare students to work and compete in a digital world (p. 76).

Often teachers are unsure how to use technology for learning and help their students focus and use technology appropriately. When teachers are more comfortable using technology for learning, they have better success keeping students on task. Gleason and von Gillern (2018) provide ideas for teachers that promote using technology to learn and learn about digital

citizenship. For example, teachers could have students use a digital infographic tool to create a public service announcement to share information about a topic with the community or write a letter to an elected official. Activities like these provide students with experience using digital tools, identifying an authentic audience, and research and writing skills, among others.

Two teachers in this study addressed technology use for personalized learning, which is loosely defined as individualized instruction through the use of technology. Educators can use technology to shift the role of the teacher from the one who seeks information to one who assesses learning. This shift provides teachers with additional tools they can use to support students in learning. However, teachers need training and practice with technology and these new pedagogical shifts to successfully implement personalized learning, and students need training and practice to learn this way successfully (Hallman, 2019). Mr. Pearson summed up this concern by noting, "These students know how to do so many things in this digital world, but they lack so many other skills when it comes to the academic side of it. Those are skills that definitely have to [be] taught."

Teachers' Professional Development Experiences and Needs

Digital citizenship skills are not inherent to educators today. To teach students these important skills, teachers must also learn them. With the speed at which technology changes, professional development is the best way to extend learning to in-service educators (Martin, Gezer, et al., 2020; Gilmour, 2019). There are many requirements for professional development in the Every Student Succeeds Act (2015) to help school leaders support teachers in the classroom. Professional development should be "sustained (not stand-alone, 1-day, or short-term workshops), intensive, collaborative, job-embedded, data-driven, and classroom focused" (Every Student Succeeds Act, 2015, p. 295). Every teacher deserves professional development

opportunities to help them meet the needs of their students. However, many educators do not receive high-quality professional development; in-service training opportunities are often dreaded by teachers who do not find value in the one-size-fits-all model employed by many schools and districts (Cabusao et al., 2019).

Research question three sought information about the impact of professional development experiences on digital citizenship integration into core content area subjects. Data analysis found a scarcity of impactful professional development opportunities for these teachers. However, there were more informal, self-directed ways that these teachers learned about the topic of digital citizenship outside of the traditional professional development construct (Schugurensky, 2015). These effective methods included developing personal learning networks, parenting & personal family connections, self-exploration, support from technology facilitators and other technology champions, and participating in the digital world. Research question four asked about teachers' professional development needs. Although participants in this study learned about digital citizenship outside of traditional professional development, they still need training to integrate digital citizenship into their core content area curriculum more often or more effectively. Those needs include ideas on making digital citizenship relevant and authentic for their students, ways to build awareness and community with other educators around digital citizenship topics, and resources to use in core content area classes. To prepare students for this evolving technological landscape, teachers need more than the short-term professional development sessions that are currently being offered. Because these traditional professional development opportunities have not been impactful on the teaching practice of participants in this study, something different is needed.

Participants' experiences and needs are aligned with the concept of personalized professional learning that has increased in the literature over the past decade. Personalized professional learning is defined as, “Ongoing, job-embedded, and relevant professional learning designed and led by teachers with support from other experts” (Office of Educational Technology, 2017, p. 45). Although both are intended to improve student outcomes, there are major differences in practice. The key element that differentiates personalized professional learning from traditional professional development is the inclusion of teacher agency. Teacher agency is “the capacity of teachers to act purposefully and constructively to direct their professional growth and contribute to the growth of their colleagues” (Calvert, 2016, p. 4; Scherff, 2018).

Connectivism supports the concept of personalized professional learning by offering four foundations for learning: autonomy, connectedness, diversity, and openness. The first, autonomy, relates to learners being self-directed and having control over the connections they make. Connectedness is focused on the ability for knowledge-building to occur when connections are made. Diversity refers to the different experiences and perspectives of those who contribute to the network. The final foundation of openness is based on the exchanges that happen in the network. These foundations align well with adult learning theory and should be considered when discussing personalized professional learning (Downes, 2019; Corbett & Spinello, 2020).

The discussion that follows will focus on the various themes from the findings in the fourth chapter related to participants' professional learning experiences and needs and their relationship to connectivism and personalized professional development.

Personal Learning Networks

Seven participants learned about digital citizenship through personal learning networks (PLNs), which are groups of educators who communicate and collaborate online for professional development on their own time. PLNs can be developed by educators who work together, are members of the same professional organizations, or find one another online through similar interests. PLNs are rooted in connectivism and the ability to learn through connections with others in the network. They support teacher agency through choice and collaboration with other educators working towards common goals (Calvert, 2016; Tour, 2017; Downes, 2019; Oddone et al., 2019; Haas et al., 2020).

Parenting & Family

Although this theme is not directly related to professional learning, it was still a clear theme among participants. Being a parent or family member who cares deeply about a child is a learning experience and will impact teaching practice. Stewart (2014) offers the principle of praxis as part of professional learning and defines it as "learning is applied to real-life practice" (p. 29). Three participants, Ms. Travers, Ms. Mellay, and Ms. Melton, seamlessly switched between discussing their students' digital citizenship habits and their children's difficulties and successes with digital citizenship. It was evident that what they were learning from their children at home was impacting their teaching practice and vice versa.

Self-Exploration

Five participants from this study discussed how they've learned more about digital citizenship through self-exploration by coming across information on the topic by luck or by seeking it out to learn more. Lifelong learning is a tenant of connectivism. When one recognizes that new knowledge is constantly being created, learners must continuously seek out new

connections to remain current. Life-long learning is also a tenant of professional growth. Self-exploration supports teacher agency because it is often the result of an intrinsic desire to improve (Siemens, 2006; Foroughi, 2015; Labone & Long, 2016).

Technology Facilitators & Other Technology Champions

In North Carolina, a technology facilitator is a professional educator who leads digital learning in schools. Educators who serve in this role support teachers in 21st century teaching and learning practices. This role is found under various titles in other regions, but the goal is the same; provide educators with a school-based champion of digital teaching and learning to empower teachers as they integrate technology into their practice (North Carolina Department of Public Instruction, 2015). Four participants from this study shared about a specific person who has impacted their digital citizenship practice. It is also important to recognize that sometimes these champions are not in leadership roles but can be someone in the building who is leading the way due to their own passion about the subject. Teacher agency in professional learning supports this concept as well through providing teachers with leadership roles and having them present professional learning for their peers (Labone & Long, 2013; Calvert, 2016).

Participating in the Digital World

Only three participants explicitly addressed learning about digital citizenship by participating online. However, the literature strongly supports the notion that you cannot learn to be a digital citizen without being an active member in the in the digital world. Educators need to see the risks online and understand the expectations to be Safe, Savvy, and Social in order to teach their students about it (Choi, 2015; Krutka and Carpenter, 2017; Buchholz et al., 2020). Additionally, connectivism encourages participation so members of the community can see

patterns to grow and evolve (Siemens, 2006; Foroughi, 2015; Downes, 2019). Teachers need experiences online in order to better understand the world they are preparing students for.

Relevant & Authentic

In order to make meaning in the learning process, students need to see the value in what they are learning (Nachtigall et al., 2022). This applies to all learners, from kindergarteners learning to add and subtract, to middle school students learning about the periodic table of elements, and to teachers participating in professional development. Participants in this study want to help students to make meaning in learning by providing them with relevant and authentic learning experiences. Relevant and authentic lessons ask students to combine critical thinking skills with the content knowledge they are learning in the context of real-world scenarios (Office of Educational Technology, 2017; Mims, 2003). Relevant and authentic learning experiences naturally include each area of the connectivism learning ecology: learning content, context, subjects, and technologies (Rule, 2006; Hung, 2014; Utecht & Keller, 2019). The issues students face with digital citizenship largely occur outside of the classroom, without a teacher to guide them through these complex situations. Providing teachers with professional learning experiences that guide them in developing relevant and authentic activities for their students is critical. Students need to practice digital citizenship skills in situations with guidance from educators before they can be expected to apply them on their own (Nachtigall et al., 2022; Lombardi & Oblinger, 2007).

Awareness & Community

As evidenced in this study and other recent studies, teachers do not have a comprehensive understanding of the complexities of digital citizenship (Martin, Gezer, et al., 2020; Tangül & Soykan, 2021; Capuno et al., 2022). There is a need to build awareness of the topic and provide a

community for teachers around the topic. Participants in this study are already using their own personal learning networks to learn about digital citizenship, but schools can provide more support in this area. The importance of building awareness of issues and a learning community is evident throughout Siemens' (2005) principles of connectivism and other literature on teaching in the 21st century (Utecht & Keller, 2019; Lombardi & Oblinger, 2007; Glaze-Crampes, 2020).

Resources

Although there are some free and low-cost digital citizenship teaching resources available, they are designed to be taught separately from core content area instruction (Common Sense Education, n.d.a; Google, n.d.). Teachers who are attempting to integrate digital citizenship topics into the core content areas must develop their own materials. Educators need ample resources to ensure they can provide high-quality instruction in all areas, including digital citizenship (Mims, 2003; Bell, 2011; Martin, Gezer, et al., 2020). Because so many teachers are inexperienced with this content, they likely do not have the skills needed to develop their own resources, as they would for a subject area in which they are more comfortable.

Addressing Teachers' Personalized Professional Learning Needs

When planning professional learning experiences that meet teachers' needs regarding digital citizenship opportunities in core content area classes and trying to find ways to promote teacher agency, it is also helpful to consider Wiggins and McTighe's (1998) concept of backward design. With backward design, one considers the desired end result first, then determines how that can be evaluated, and then plans instructional learning experiences (Bowen, 2017). In this instance, the desired result would be for educators to integrate digital citizenship into their core content area instruction more often. Evidence of that could come in multiple forms, but one example might be that teachers have a short discussion on each of the S3 Guiding

Principles in class once a month during core content instruction. One might see why traditional professional development experiences are not impactful when thinking about the goals of the training this way. Teachers need personalized professional learning experiences to integrate digital citizenship into core content area subjects (Office of Educational Technology, 2017).

Although teachers could not identify meaningful professional development experiences, several themes emerged that have been discussed, including using personal learning networks, parenting and family, self-exploration, technology facilitators and other technology champions, and participating in the digital world. Neither parenting and family nor participating in the digital world are particularly applicable to professional development. However, developing personal learning networks, increasing motivation for self-exploration, and connecting with technology facilitators and other technology champions can be cultivated by schools. Teachers need these opportunities to fulfill the needs identified during the data analysis of research question four: make digital citizenship relevant and authentic for their students, raise awareness of digital citizenship among their peers to build a community around teaching students about this topic, and discover resources to integrate this subject matter into their curriculum effectively (Ertmer et al., 2012; Dexter & Barton, 2021). Table 14 provides examples of how to meet teachers' digital citizenship needs with impactful personalized professional learning experiences.

Table 14

Impactful personalized professional learning opportunities based on teachers' needs

Learning Opportunities	Personal Learning Networks	Self-Exploration	Technology Facilitators & Other Champions
Relevant & Authentic Opportunities for Students	Follow hashtags or join groups on social media where teachers share information on digital citizenship.	Talk to students to identify areas for growth and interests regarding digital citizenship topics.	Record model lessons to share with teachers.
Build Awareness & Community	Participate in Twitter Chats on digital citizenship topics.	Use a social bookmarking tool to save and share articles with peers.	Share relevant current event articles on digital citizenship topics with other staff members via email or blog.
Resources	Follow experts in the field on social media to identify resources and stay updated on current digital citizenship news.	Listen to podcasts or watch documentaries about digital citizenship topics to discover additional resources.	Work with teachers or teams to find appropriate curriculum-related resources.

Although these are just a few ideas for how this work can be done, this table shows how schools can address teachers' needs while providing personalized professional learning experiences that align with how they learn.

Implications & Recommendations

This study examined how teachers define digital citizenship and integrate digital citizenship topics within their classes through formal and informal instruction. It also sought to identify digital citizenship professional development experiences and needs of core content area teachers. This study focused on teachers in core content areas such as literacy, science, and social studies because students spend the most time with these teachers in these subject areas throughout their schooling.

Although there is still progress to be made, looking at this work through the lens of connectivism provides some valuable insights into digital citizenship in schools. Proponents of connectivism recognize that this theory alone cannot explain learning in a technologically enabled world, but educators are important in this work. As the volume of information that we can access inside and outside the classroom grows, it is more important than ever to develop "norms of appropriate, responsible, and empowered technology use" (Ribble, 2021a, p. 76; Goldie, 2016; Guder, 2010).

Digital citizenship is "more comprehensive than practical technology use because it encompasses values and morals such as ethics, character, and moral order, which are deemed critical for society, [and] ethical misconduct leads to social consequences and criminal threats as a result of violations such as cyberbullying and hacking" (Prasetiyo et al., 2023, p. 396). This researcher hopes that implications from this study will help school leaders and teacher education programs better understand teachers' experiences with digital citizenship and how they can support growth in this area.

Implications for School Leaders

This study holds implications for school leaders, including technology facilitators, academic support specialists, and administrators. Although digital citizenship is the specialty of the technology facilitator, educators in that role need to work closely with academic support and school administration to ensure the successful implementation of digital citizenship across the school. More recent work on connectivism underlines the importance of using the framework to redefine leadership. Corbett and Spinello (2020) discuss the importance of looking at leadership through the lens of connectivism. They equate leadership to the "process of developing a

knowledge network and making connections to create collective influence," which aligns well with Siemens' definition of connectivism (Corbett & Spinello, 2020, p.7).

In 2018, ISTE published updated Standards for Education Leaders, which include several areas relevant to this study:

> Equity and Citizenship Advocate — Leaders use technology to increase equity, inclusion, and digital citizenship practices. Education leaders:
>
> 1a — Ensure all students have skilled teachers who actively use technology to meet student learning needs.
>
> 1b — Ensure all students have access to the technology and connectivity necessary to participate in authentic and engaging learning opportunities.
>
> 1c — Model digital citizenship by critically evaluating online resources, engaging in civil discourse online, and using digital tools to contribute to positive social change.
>
> 1d — Cultivate responsible online behavior, including the safe, ethical, and legal use of technology (ISTE, 2018, "Equity and Citizenship Advocate" section).

Findings from this study can provide practical ideas for all school leaders as they help their teachers prepare students for the future.

School leadership's priority should be to ensure that all educators working with students know digital citizenship and its intricacies. An essential part of this process is choosing a digital citizenship framework. Learning all nine of Ribble and Bailey's Elements may not be necessary, as the educators in this study had a firmer grasp of Ribble and Park's simpler S3 Guiding Principles. Alternatively, a school could use the language from the ISTE Standards for Students or Common Sense Education. Leaders want to focus on fewer topics to make it easier for teachers to implement.

The next recommendation for school leaders is to build a professional learning community around digital citizenship where teacher agency is at the forefront. Leaders must ensure their teachers have a community to help them through this process. Some other ideas for leaders include modeling good digital citizenship in their leadership practice, sharing relevant information on digital citizenship in newsletters or at staff meetings to keep it at the forefront of teachers' minds, and encouraging discussion among staff. School leaders should also provide ample opportunities for personalized professional learning for their staff. Recognizing that non-traditional professional development can be powerful and encouraging staff to build personal learning networks around digital citizenship and other topics of interest will lead to positive change in schools.

Lastly, school leaders should help promote digital citizenship for the parents and caregivers of students in the community. Parents recognize that they often struggle with digital citizenship practices, so they rely on teachers for information about the topic (Auxier et al., 2020). Participants in this study acknowledge that their students' families do not always have the tools they need to help their children with digital citizenship. When students hear a unified message promoting positive digital citizenship at home and school, they are more likely to think twice and make a positive choice online. Although these changes will not "fix" the problems students, families, teachers, and schools face with digital citizenship overnight, they will help their students prepare for the future.

Implications for Teacher Education Programs

One of the biggest challenges with digital citizenship is keeping up with technological changes. Participants in this study are veteran teachers. These participants have from six to 24 years of experience, with almost half having taught for over 20 years. Technology was not as

advanced as today when these educators were in preservice education programs. However, even for participants enrolled in more recent graduate programs, none had meaningful experience learning about digital citizenship. Teacher education programs should require that all pre-service teachers participate in meaningful coursework to prepare them to teach students in today's digital world. Future educators should learn what is expected of teachers and students according to the ISTE standards. They should be provided with authentic experiences, related to core content area curriculum, that make them conscious of their own roles as digital citizens. For example, an undergraduate course in teaching social studies could use current events related to news and media literacy to model finding reliable sources online. A course for future mathematics educators could practice data collection and analysis using screen time data from cell phones. This is challenging because many experiences that are authentic today may be outdated in three months, much less three years. However, by reflecting on these currently authentic experiences, they will identify ways to make digital citizenship relevant to future students using future technology. Pre-service coursework should also include opportunities for future educators to build a community of educators and identify resources and tools to help their future students become digital citizens (Hui & Campbell, 2018; Choi et al., 2018; Prasetiyo et al., 2023; Ditchburn, 2015; Garza & Smith, 2015).

Recommendations for Further Research

This qualitative study focused on a very small sample of participants who are currently or were recently core content area teachers with experience teaching digital citizenship lessons. There are many more avenues of this topic to explore. The first few recommendations are focused on the methodology of the study. Since this study focused on teachers with experience teaching digital citizenship lessons from a curriculum, further research is needed on teachers

without experience teaching packaged digital citizenship lessons. These teachers likely have very different vocabulary and definitions regarding digital citizenship. Although they are less likely to be integrating it into their curriculum, there is a chance that they could be teaching these topics in innovative ways. This future study may benefit from quantitative data collection since these educators may not be able to speak to the topic to the same depth that teachers familiar with digital citizenship can. It would also be interesting to compare digital immigrant teachers with digital natives who have more recently entered the field (Li et al., 2020). This could illuminate the lingering questions about digital citizenship being addressed through teacher education programs for recent graduates. Additionally, more information is needed on the impact of personalized professional learning on the classroom practice of digital citizenship. This could take the form of a case study of educators who participated in traditional professional development on digital citizenship compared to those who participated in personalized professional learning opportunities.

These final recommendations focus on findings from the study that are not well supported in the literature. First, more research is needed on how digital citizenship and diversity, equity, and inclusion practices overlap. There is a strong undercurrent of diversity, equity, and inclusion concepts in the literature on prosocial behavior and in the ISTE standards for education leaders. However, little research was available on this specific topic. There are also opportunities to address classroom management with technology. Although student activity monitoring software is not a new phenomenon, most of the research was from companies selling the software, not independent researchers looking at safety and effectiveness. More information is needed to address these areas, as well as student privacy concerns raised by Hankerson et al. (2022). There were also many opportunities to address executive function and technology, but no

direct research was identified. These areas of growing importance would benefit from research through the lens of digital citizenship and add to this conversation.

Summary

When looking at the history of education, digital citizenship is a relatively new phenomenon. However, as our world changes, the importance of this topic will only increase. We have seen access to technology grow exponentially since the turn of the 21st century, which is likely to continue. This study aimed to understand how core content area teachers define digital citizenship and how they integrate digital citizenship topics into their core content area curriculum. It also sought to identify the impact of professional development teachers have experienced and the support they still need to incorporate digital citizenship into their lessons more often and effectively. This discussion of the findings has identified that there is much more work to be done.

Chapter 1 of this study introduced the problem that students in schools face today regarding their participation in our growing and changing online world. It introduced Ribble and Bailey's (2007) definition of digital citizenship along with the theoretical framework of connectivism that was used throughout the study (Seimens, 2005). It sets the purpose of the study and outlines the methodology. Chapter 2 provided an in-depth review of the literature on digital citizenship and connectivism. It included a variety of frameworks on digital citizenship that have been proposed over the years, along with national and North Carolina state standards and laws related to the topic. Research on the importance of digital citizenship was presented alongside research on the challenges of implementation. Relevant research on professional development was shared. The literature review ended with an overview of Connectivism, its key principles, and connections to digital citizenship.

Chapter 3 provided a synopsis of the methodology for this study which used Merriam and Tisdell's (2014) basic qualitative approach. This chapter included participant selection and sampling procedures along with an overview of participant information. It summarized data collection and instrumentation. Fereday and Muir-Cochrane's (2006) hybrid approach of inductive and deductive coding was described. The researcher's strategies for quality maintenance were described. This chapter concluded with possible benefits, risks, and ethical considerations of the study.

Chapter 4 outlined the findings from the interview and follow-up questionnaire data collected from current and former core content area teachers with experience teaching digital citizenship lessons to students. It was organized by the research questions, where major findings were explored, and participants' experiences were shared. Throughout this chapter, the data was linked back to the research from the literature review.

Chapter 5 concludes this study by revisiting the theoretical framework of connectivism and providing a comprehensive discussion of the findings and implications of this study for school leaders and teacher education programs, and it provides recommendations for future research. Even though some significant gaps were identified, this study does not intend to pass judgment on educators, school leaders, families, or teacher education programs. Still, it identifies some critical areas that need to be addressed by all parties to ensure that the next generation is prepared to thrive in our digital world.

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APPENDIX A: RECRUITMENT EMAILS

Participants Recruited Through NSF Digital Citizenship Grant

Dear NSF Digital Citizenship Participant,

You are receiving this email because you participated in digital citizenship professional development in the summer of 2018, 2019, or 2022 at the University of North Carolina at Charlotte. Researchers at the University of North Carolina at Charlotte are conducting a research study to better understand how teachers of subjects such as literacy, science, social studies, and math integrate digital citizenship concepts into their core content area curriculum.

The researchers are looking for participants to complete an audio-recorded Zoom interview with a follow-up digital questionnaire several weeks later. Total participation time should be less than 1.5 hours.

Participants must be current K-12, core content area teachers with 3 or more years of experience AND have experience teaching students about digital citizenship through a program or curriculum.

Click the link to access the study eligibility questionnaire if you are interested: <insert link here>

More questions? Contact Heather Ramsey and/or dissertation co-chairs Dr. Beth Oyarzun (beth.oyarzun@uncc.edu) and Dr. Drew Polly (drew.polly@uncc.edu) in the Departments of Educational Leadership and Reading & Elementary Education.

Feel free to share this information with others who may be qualified and interested, even if they did not participate in the Digital Citizenship professional development at UNC Charlotte.

Thank you!
Heather Ramsey
Educational Leadership Ed.D. Program
h.ramsey@uncc.edu

Participants Recruited Through Listservs and Social Media

Hello,

I am a doctoral student at the University of North Carolina at Charlotte. I am conducting my dissertation research to better understand how literacy, science, social studies, and math teachers integrate digital citizenship concepts into their core content area curriculum.

I am looking for participants to complete an audio-recorded Zoom interview with a follow-up digital questionnaire several weeks later. Total participation time should be less than 1.5 hours. If

you qualify and complete both the interview and follow-up questionnaire, you will be entered into a drawing for one of five $20 Target gift cards.

I am recruiting participants who meet the following criteria:

- Current or former K-12 core content area teachers
- Three or more years of teaching experience
- Experience teaching students about digital citizenship through a program or curriculum.

Click the link to access the study eligibility questionnaire if you are interested: <insert link here>

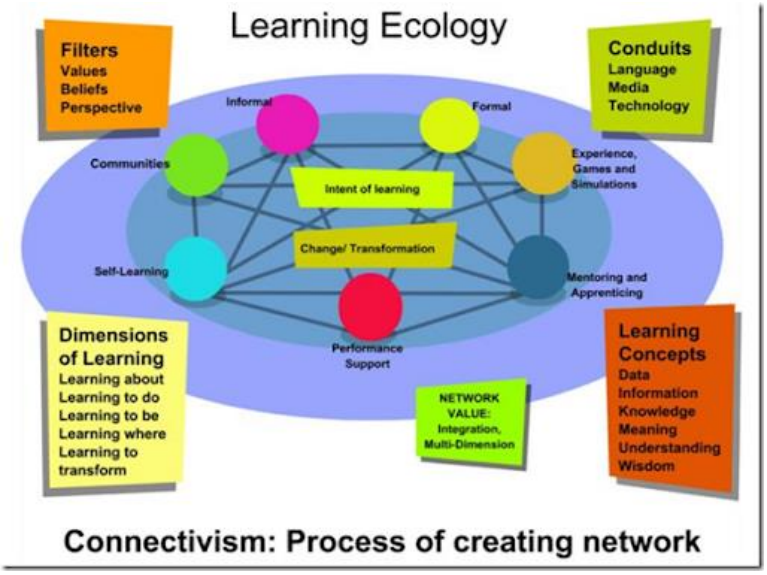
If you have more questions, please contact Heather Ramsey and dissertation co-chairs Dr. Beth Oyarzun (beth.oyarzun@uncc.edu) and Dr. Drew Polly (drew.polly@uncc.edu) in the Departments of Educational Leadership and Reading & Elementary Education.

Please share this information with others who may be qualified and interested.

Thank you!
Heather Ramsey
Educational Leadership Ed.D. Program
h.ramsey@uncc.edu

APPENDIX B: CONNECTIVISM ONE-PAGER FOR INTERVIEWS

Connectivism Overview



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.

Resource References:

Siemens, G. (2005). Connectivism: A learning theory for the digital age. International Journal of *Instructional Technology and Distance Learning*, *2*(1). https://itdl.org/Journal/Jan_05/article01.htm

Siemens, G. (n.d.) *Connectivism mindmap*. https://www.visual-mapping.com/2008/03/connectivism-learning-theory-for.html

APPENDIX C: SEMI-STRUCTURED INTERVIEW PROTOCOL

Examining How Teachers Define and Integrate Digital Citizenship into Core Content Area Curriculum

Research Questions:

1. How do core content area teachers define digital citizenship?
2. What are teachers' experiences integrating digital citizenship into their core content curriculum?
3. How have teachers' professional development experiences impacted the integration of digital citizenship into core content area subjects?
4. What professional development opportunities do teachers need regarding integrating digital citizenship into their core content curriculum?

Procedure:

1. The interviewer will begin with an introduction and explain the interview procedure.
2. The interviewer will request permission to audio-record the interview in Zoom. If the participant verbally agrees, the recording will begin; if the participant does not agree to be recorded, the interview will be stopped.
3. The interview will ask the interview questions. Because this is a semi-structured interview, the interviewer may ask different probing questions than those listed in the protocol.

Introductory Protocol:

To facilitate our note-taking, I would like to record our conversations today using the Zoom built-in recording feature. For your information, only researchers on the project will be privy to the tapes which will be destroyed after they are transcribed. Additionally, you must sign a form devised to meet our human subject requirements. Essentially, this document states that: (1) all information will be held confidential, (2) your participation is voluntary, and you may stop at any time if you feel uncomfortable, and (3) we do not intend to inflict any harm. Thank you for agreeing to participate.

We have planned this interview to last no longer than one hour. During this time, I have several questions that I would like to cover. If time begins to run short, it may be necessary to interrupt you to push ahead and complete this line of questioning. If there are any questions you would like to skip, you are free to do so.

Introduction:

My name is Heather Ramsey, and I am a doctoral student at UNC-Charlotte in the Educational Leadership program. My studies are focused on Learning, Design and Technology. My research focuses on teachers’ understanding of digital citizenship and how teachers integrate digital citizenship lessons into content area curriculum. You were asked to participate in this study because you are a content area teacher, and you have experience teaching digital citizenship lessons to your students. This study does not aim to evaluate your techniques or experiences. Rather, we are trying to learn more about teachers’ understanding of digital citizenship and how it is being taught to students.

Establishing Rapport:

- Tell me a little bit about yourself as an educator.
    - How long have you been a teacher?
    - What grade levels have you taught? What are you currently teaching?
    - What subject(s) do you teach?
    - What is your level of comfort with technology?
    - Are you familiar with the terms digital native and digital immigrant? Which do you identify with?
        - *Digital native-you've been familiar with the internet from an early age.*
        - *Digital immigrant-raised or grew up without internet technology.*

Connectivism:

My study will use the theoretical framework of Connectivism to better understand digital citizenship and its importance to students and teachers. If you aren't familiar with Conectivism, it is a learning theory developed in the early 2000s by George Siemens and Stephen Downes. Connectivism proposes that learning is "actionable knowledge" and focuses on "connecting specialized information sets, and the connections that enable us to learn more are more important than our current state of knowing" (Siemens, 2005, "Connectivism" section). Connectivism recognizes that available information is always growing and changing and that it is essential for learners to recognize when this happens. It also acknowledges that we are constantly surrounded by information, and we must continuously determine what is necessary and relevant.

This one pager (see bottom of Appendix B) has a graphic developed by Siemens to explain the theory more visually as well as a list of the key principles of connectivism. Please take a moment to review this document and then I will have a few questions for you.

- How would you describe connectivism?
- How do you see any of these ideas in your classroom?

Defining Digital Citizenship:

- Describe what you think of when you hear the term "digital citizenship."
    - *What are some topics that fall under this term?*
    - *What are some topics that don't fall under this term?*
    - *What is the primary purpose of digital citizenship?*
- What skills do you think students need to be good digital citizens?
- How do you think your students view digital citizenship?

Integrating Digital Citizenship:

- Tell me about your experiences teaching digital citizenship lessons to your students.
    - *Stand-alone lessons or integrated into your subject area lessons?*
    - *From a curriculum? If so, which digital citizenship curriculum?*
- Tell me about a lesson when you integrated digital citizenship topics into your content area.
    - *What subject?*
    - *How often do you do activities like this?*
    - *Do you have another example?*

Improving Digital Citizenship Instruction:

- Who should be responsible for teaching students about digital citizenship?
- Tell me how you learned what you currently know about digital citizenship.
    - *Was this covered in any college courses you've taken?*
    - *Have you attended any professional development sessions on this topic?*
    - *What did you learn from those professional development experiences?*
    - *How did those opportunities impact your view of digital citizenship and your classroom practice?*
- What are some successes you've encountered in integrating digital citizenship into your lessons?
- What are some challenges you've faced in integrating digital citizenship into your lessons?
- What supports do you need to integrate digital citizenship into your lessons more often or more effectively?
    - *Do you feel supported by your school administration? If so, how?*
    - *Do you feel supported by families at your school? If so, how?*

Wrap Up:

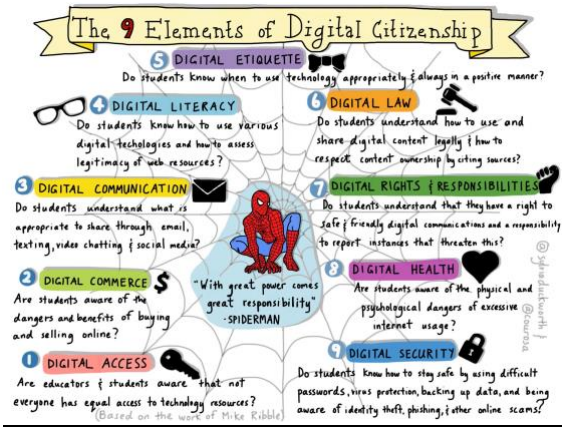
- Are there any questions you expected me to ask you about this topic that I didn't ask?
- Is there anything else you'd like to add?
- Thank you for your time. I plan to share a copy of the transcript with you to make sure that my notes align with your thoughts and experiences. I would appreciate it if you could review the transcript and share any additional comments with me within a few days.
- Additionally, I will be asking you to complete a follow-up questionnaire in a few weeks. Please be on the lookout for an email with the link to the questionnaire and reach out to me with any questions.

APPENDIX D: QUESTIONNAIRE

Thank you for your participation in the interview on digital citizenship a few weeks ago. This questionnaire was designed to gather information you may not have thought about during the initial interview. As you answer these questions please think about your classroom and students over the past few weeks.

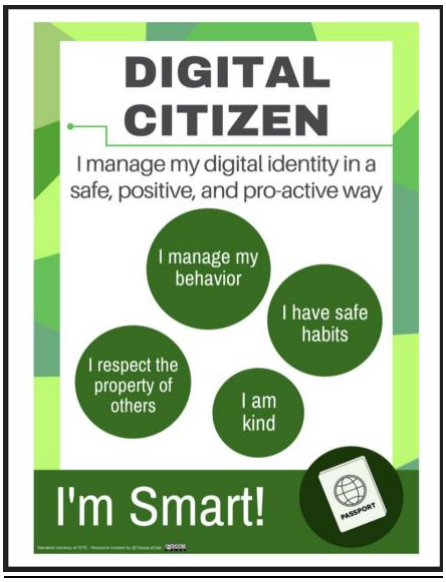
There are several digital citizenship themes that are commonly addressed in research. The following graphics provide an overview of the themes:

The first comes from research by Mike Ribble and are referred to as the Nine Elements of Digital Citizenship.



(click to enlarge)

The next set are based on the International Society of Technology in Education (ISTE) Standards for Students.



(click to enlarge)

There is some overlap in these two models. Please keep these themes in mind as you answer the following questions. Please provide as much detail as possible to help us understand the whole situation.

1: What, if any, problems with digital citizenship issues have you had to address over the past few weeks? Have any of these issues been escalated outside of your classroom to an administrator? Please explain.

2: What, if any, digital citizenship "wins" have you had over the past few weeks where you've been able to celebrate your students making good choices online? Please explain.

3: Thinking back over the last few weeks, how have any of the digital citizenship themes you reviewed above come up in your classroom formally or informally? Please provide as many examples as you can think of.

4: Are there any areas of digital citizenship you would like to learn more about in the future?

5: Is there anything else related to digital citizenship in your classroom you'd like to tell us about?

Resource References:

Duckworth, S. (2015). The nine elements of digital citizenship. https://pbs.twimg.com/media/CDEINZ2UgAE0x_6?format=jpg&name=large

LeClair, T. (2018). I am a digital age learner: Digital citizen. https://drive.google.com/file/d/1Pi59n44OcoxZKgp6lgMB8xb1q-_yBQOk/view