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Chasing a Moving Target: Examining Shifts in Elementary Teachers' Language and Conceptions of Digital Literacy During Professional Learning

by

Stephanie M. Branson

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
with a concentration in Literacy Studies and Elementary Education
Department of Language, Literacy, Ed.D., Exceptional Education, and Physical Education
Department of Curriculum, Instruction, and Learning
College of Education
University of South Florida

Co-Major Professor: Jenifer Jasiniski Schneider, Ph.D.
Co-Major Professor: Jennifer Jacobs, Ph.D.
Jolyn Blank, Ph.D.
Danielle V. Dennis, Ph.D.
Julie Coiro, Ph.D.

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DEDICATION

I dedicate this dissertation to my husband, my mom, my grandparents, my family, and my close friends for supporting me along my journey and never wavering in their love and encouragement. I would not be at this point without them. The journey was long, and I am grateful I had each of you by my side to pick up the pieces when I couldn't.

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ABSTRACT

Emerging and transforming innovations carry with them new ways of conceptualizing literacy practices in the classroom. As the technology revolution forges ahead and permeates the elementary school setting, teachers must consider how they talk about and model digital literacy practices. Digital literacy goes beyond merely operating technology tools and devices. It includes the cognitive and social processes that take place when reading, writing, and communicating in digital spaces and with digital tools. To understand the integration of digital literacies into the classroom, we must better understand how teachers develop digital literacy competencies and dispositions through focused and intentional professional learning experiences. This qualitative, multi-analysis design explored how elementary teachers who engaged in a professional learning experience made sense of digital literacies and how that thinking manifested through their language. The dissertation aimed to inform our understanding of inservice teachers' conceptions of digital literacy and digital literacy professional learning experiences. I analyzed existing data from the institute (e.g., survey data, interview data, video transcripts, institute texts, and participant artifacts) to examine how teachers acquire and use a specialized professional language associated with digital literacies. Through a multi-analysis approach, the data highlight findings related to quality digital literacy professional learning, the acquisition of a specialized language as an outcome of professional learning, and the importance of design, structure, and activities related to professional learning.

CHAPTER ONE: INTRODUCTION AND OVERVIEW

During our first interview together, I asked Janine, "What is digital literacy?" She responded, "I'm not entirely sure about digital literacy, but I think it's using technology in the classroom to make learning easier." Janine didn't elaborate and she was unsure about how to explain or describe digital literacy when probed further. Her written survey definition included a bit more, but was still a broad, encompassing response (i.e., using various forms of technology within the classroom to enhance lessons taught). However, Janine mentioned in her interview using technology in her kindergarten classroom. In fact, she explained that she was always willing to try something new, declaring, "I love [technology] and I think it's great". Her principal usually made a point of reaching out to her or highlighting what she did in her classroom. However, this made her uneasy saying, "but then I almost feel like everyone else is looking at me. You know what I mean right?" She went on to explain how her colleagues often told her they were too old to learn something new, with one saying, "I'm not touching this", speaking about a new device provided by the school. Janine commented that she felt like an "overachiever" whenever she did use something new and although she mentioned helping her colleagues, she often felt uncomfortable with her role. At the end of a weeklong digital literacy institute, Janine was talking differently. She used new words and phrases such as produce, collaborate, and understanding good and bad information, to describe digital literacy. Not only did she use more precise language to define digital literacy, but she also started speaking differently about how she would approach planning in her classroom and how she might support

her colleagues. She left the institute with a newfound confidence and a different way of talking and thinking about digital literacy and her role as a teacher.

It is clear Janine had some knowledge and skills related to technology use in the classroom pre-institute but was unsure of what digital literacy was or how to describe it to someone else. Within the span of a 42-hour professional learning week, something changed for Janine. Her confidence and self-efficacy grew as she engaged in different activities and interacted with other colleagues and professionals. For me personally, I noticed a shift and change in her language connected to the language and experiences of the institute she was a part of. I wondered what it was about this professional learning experience that had an impact on her language and thinking. This dissertation further explores the shift in language and developing conceptions of digital literacy across four elementary participants who attended a digital literacy institute.

Background of the Problem

Methods used to change thinking about technology and develop understandings of digital literacy lies in quality professional learning and development resources, programs, organizations, and initiatives. The US Department of Education's 2020 National Education Technology Plan explicitly states, institutions responsible for pre-service and inservice *professional development* must ensure "all educators are capable of selecting, evaluating, and using appropriate technologies and resources to create experiences that advance student engagement and learning". They further recommend any governing body responsible for designing learning experiences for educators, should:

> Provide pre-service and in-service educators with professional learning experiences powered by technology to increase their digital literacy and enable them to create

compelling learning activities that improve learning and teaching, assessment, and instructional practices. (Department of Education, Office of Educational Technology)

The statements are important yet broad, and the words are rather vague as to what exactly teachers should learn and understand. What further catches my attention and makes me wonder is what is meant by "increase their digital literacy". This is where I have personally spent time trying to muddle through the vast domain of *digital literacy* definitions and professional learning opportunities available for assisting educators in understanding conceptions of digital literacy. This is also where my inquiry began.

Call for Qualified Teachers

The International Literacy Association's *Rights to Read* initiative (2018) includes 10 fundamental rights every child needs and deserves. At the forefront is the "basic human right to read" followed immediately by the "right to access texts in print and digital formats". Also included are the right to share and communicate what they are reading and writing locally and globally. This initiative is a call for digital literacy instruction and a demand for knowledgeable teachers who can identify the complexities of reading, writing, creating, and participating in digital spaces and effectively prepare their students with multiple literacy skills and knowledge. While others have asked what it means to be literate, I am focused on how we are equipping teachers with the capacities and skills needed to understand digital literacy beyond the apps and tools.

Effective teachers, today and in the future, must exhibit a special understanding and knowledge of the intersection of content, instructional practices, pedagogy, and technology to meet the needs of learners and demands of educational reforms (Mishra & Koehler, 2006; Shulman, 1986). National calls, educational reforms, and teacher preparation standards express a

need for educators who are knowledgeable and skilled in the use of digital technologies for teaching and learning (CAEP, 2022; ISTE Standards for Teachers, 2017; National Education Association, 2020; National Education Technology Plan, 2020). Aside from the basic skills of operating the equipment, teachers must also have the knowledge and understanding to plan with technology, integrate digital literacies practices into the curriculum, model digital literacies across content areas, communicate a language of digital literacies, and critically evaluate digital technologies. The Council for the Accreditation of Educator Preparation or CAEP (2022) expects teacher candidates will have the pedagogy, dispositions, and content knowledge to effectively model effective use of technologies and integrate technology to "engage and improve learning for all students" (i.e., R1.3 Instructional Practice). Accordingly, once in the field, teachers are expected to design, facilitate, and model digital literacy and learning (ISTE Teaching Standards, 2017), integrate technology into teaching and learning and promote the use of digital literacies across content areas to create relevant learning experiences "that mirror students' daily lives and the reality of their futures" (National Education Technology Plan, 2010, p. 3).

Throughout the national calls and reforms are a list of specific words (e.g., access, create, design, facilitate, locate, relevant, integrate, digital age, etc.) and threads of discourse intended to paint a picture of innovation in the American education system, while also pushing the diffusion of innovations widely. The national discourse for what is expected of teachers is clear and professional development is one way to best support teachers' thinking and competencies for the continual evolution of new digital tools and spaces, and the changing nature of teaching and learning in the digital age.

Professional development or PD can be anything from job-embedded practices, online learning, professional articles, social media groups, conferences, and county-wide offerings.

However, professional development to develop technology competencies and dispositions are often limited to tool-centric workshops, where the focus is predominately on the management of the tool, the practical or novel features, and the associated software rather than on pedagogical practices, developing dispositions, or an inquiry mindset. Once teachers can operate the technology, what then? Moreover, operating technology does not mean teachers will change their beliefs or value the inclusion of tools in the classroom (Ertmer et al., 2012; Vongkulluksn et al., 2016). Nor do tool-centric workshops address digital literacy and the differences between integrating technology and understanding the multifaceted and interconnected process of digital literacies. All of this to say, professional development opportunities can either reinforce or maintain existing thinking about what teachers believe "using technology" is or isn't in the classroom or it can begin to shape and develop professional capacities and expand thinking and beliefs about digital literacy.

New Literacies Studies

New Literacy Studies (NLS) is an interdisciplinary field which focuses on the social and cultural aspects of literacy. It argues that literacy is not just the ability to read and write, but also the ability to use language in a variety of contexts and for a variety of purposes. It emphasizes the role of power and social inequality in shaping literacy practices and experiences, and it is a movement towards social practices as a participatory culture, distributed expertise, collective intelligence, collaboration, innovation, and creative enterprises. Influenced by Street's research of daily, multiple literacies (1985), literacy as a social practice (what people do with literacy connected to and shaped by social interaction) is analogous to the term *New Literacy Studies,* which "represents a new tradition in considering the nature of literacy… and what it means to

think of literacy as a social practices" (Street, 1985, p. 77) and challenges outdated paradigms of literacy (Lankshear & Knobel, 2003).

Included in the NLS movement is the understanding of literacy beyond cognitive processes and what's happening in the mind. It also includes embodied (Gee, 2008), social (Street, 2003), multimodal (Hull & Schultz, 2002), participatory (Jenkins, 2007), multimedia (New London Group, 2000), and digital literacies or the practices, skills, and dispositions that take place in a digital space or with digital tools (Coiro, 2003; Lankshear & Knobel, 2003; Leu, et al., n.d.).

With respect to literacy learning and education, NLS suggests that traditional approaches to literacy instruction may not be effective for all learners and teachers should consider the diverse literacy practices and experiences of their students in and outside of classroom spaces. NLS further suggests literacy instruction should focus on helping students develop the ability to use language in a variety of contexts, rather than only on decoding and encoding text. New Literacy Studies has tackled the nature of literacy in light of emerging technologies and the "social practices they engender" (Leu, et al., n.d.) and literacy practices yet to be imagined. "New literacies, whether intentionally or unintentionally, impact instruction in classrooms" (Leu et al., 2004, p. 1571).

Digital literacy and how teachers develop conceptions of digital literacy through professional learning is at the center of this dissertation. Expanded notions of literacy beyond traditional modes of reading, writing, and participating are necessary for developing conceptions of digital literacy and understanding how technologies are a language mechanism, inviting us to think, communicate, and act in different ways and for different reasons (Alvermann, 2008; Coiro et al., 2008; Gee 2010).

Purpose of this Study

The purpose of this dissertation was to identify and describe the shift in elementary teachers' language of digital literacy during a professional learning institute. Previous research has provided outcomes of professional development, which include improved teacher practices, increased knowledge and skills, increased collaboration, and increased self-efficacy to name a few (Desimone, 2002, 2009; Guskey, 2002; Kennedy, 2016). However, not specifically named is professional language as an outcome of quality professional development. Language is another layer of understanding and competence teachers demonstrate, connected to content knowledge and expertise, and words are arguably the most important tool at their disposal throughout the day. As Peter Johnston (2012) suggests, teachers use words and the tools of language in the classroom to "construct the classroom worlds ... that offer opportunities or constraints" (p. 1). Teachers are tasked with apprenticing students to "read and write in certain ways", according to the value, norms, practices, and beliefs of the educational community (Gee, 2010, p. 3). Part of that apprenticeship involves the intentional use of language and vocabulary. Qualified, knowledgeable teachers understand the words they are using (e.g., digital literacy), model and reinforce the words in context and in appropriate ways (e.g., how to read and apply reading strategies online), and assist students as they demonstrate and actively use words to communicate their learning and understanding.

Professional learning can provide teachers with the opportunity to learn a specialized language and terminology commonly used in their content area, as well as the conventions of social and academic discourse. This knowledge is crucial for teachers to be able to communicate effectively with colleagues, administrators, stakeholders, and other professionals in their field, as

well as to understand and use research and other sources of professional information to improve student learning in their classroom.

This dissertation focused on the shifts in language of a group of teachers who attended a digital literacy institute. Specifically, I addressed the following questions:

1. How do elementary teachers define digital literacies throughout the institute?
2. What terms and descriptors do elementary teachers use to label and discuss their emerging conceptualizations and instructional practices in digital literacies?
3. In the context of professional learning, in what ways do the teachers' language practices align with or diverge from the language practices, texts, and artifacts used by the professional learning provider (e.g., the institute)? What does the relationship between the participants and the institute reveal about acquiring a specialized professional language?

To address these questions, I analyzed data from a 2016 digital literacy institute (survey data, interview data, institute texts, and digital artifacts) to examine how teachers acquired and used a specialized professional language associated with digital literacies and what that language revealed about their conceptions of digital literacy.

Theoretical Positioning

This dissertation is based in a situated, sociocultural approach (Gee, 2010), engaging the overlapping, yet distinct theories under the umbrella of sociocultural theories including (1) *new literacies* as a way to understand literacy as a social practice (Coiro et al., 2008; Lankshear & Knobel, 2011), (2) *critical theories* as a way to understand institutional power relations (Feller, 2017; Gee, 2011) and language-in-use as a product of social practices (Fairclough 2004; Gee, 2011) during professional learning, and (3) *situated learning theory* as a way to understand

teachers' language as embedded in the activities, culture, and context of professional learning (Lave, 1988; Lave & Wenger, 1991). Applied to this study, a situated, sociocultural approach (Gee, 2010), emphasizes the importance of understanding the situation or context in which people are learning and how this shapes their learning and development needs. It also emphasizes the importance of actively engaging individuals in the process of identifying their own learning needs and goals and supporting them in developing the skills and knowledge required to be effective in their specific fields or disciplines. This approach values the active participation of professionals in their own learning and development and recognizes that knowledge and skills are not easily transferable across different contexts. Employing a critical lens within this approach means analyzing how language is taken up and used, and how other factors influence communication and language acquisition. In respect to professional learning, it means being aware of how an organization uses language and its effects on others, while being mindful of how language is used to maintain, challenge, or disrupt existing concepts and structures. This served as a lens for me to understand and analyze teachers' language and conceptions of digital literacy during a professional learning experience.

Operational Terms

This exploratory qualitative study, grounded in a situated sociocultural theory of language and discourse, aimed to examine the language-in-use of elementary teachers throughout a professional learning institute, committed to developing conceptions of digital literacy. Therefore, the operational terms are of particular significance. Further, my research questions draw on the institutes and participants' language of digital literacy. Digital literacy is often referred to as a moving target (Coiro & Hobbs, 2016), as the term itself is deictic in response to changing social, cultural, and political contexts. It is also highly contextualized, and different

fields will provide varying definitions, with some overlap. As such, a broad definition of digital literacy promoted by the institute in 2016 is used here, with the understanding that the literature will reveal other definitions of digital literacy.

One additional term that needs to be addressed is *professional development*. Broadly speaking, it is an umbrella term to describe spaces and experiences associated with teacher learning. However, a term that has been used more recently is *professional learning*, used to indicate participatory and collaborative types of teacher learning. I will use the terms accordingly depending on what I am referring to. As an example, if I am speaking about the literature review or a public statement by an entity or organization, I will use the same terminology, which is typically *professional development*. However, this dissertation took place at a professional learning institute, therefore, when I am speaking about the context of this study and the outcomes of this study, I will refer to *professional learning*.

The following operational terms are defined for consistency and clarity:

Context: Gee (2011) defines the context as "the physical setting in which the communication takes place and everything in it" and any "shared cultural knowledge".

Digital literacies: Umbrella term which includes the ability to use digital tools and spaces to find, evaluate, create, communicate, and share information, requiring cognitive, social, dispositional, and technical skills (adapted from Summer Institute in Digital Literacy, 2016).

Digital and Media Literacy: Digital literacy in relation to media literacy that further encompasses the collaborative, critical, and creative aspects of literacies (Hobbs, 2012).

Digital tools: I'll use the term digital tools broadly throughout the dissertation to refer to any digital device, website, app, or software that could be used for teaching and learning.

Institute: An organization whose purpose is to advance the study of a particular subject (Cambridge Online English Dictionary, n.d.).

Literacies: The distinct written and oral language practices evident across varying social circumstances, domains, and classes. As such, literacies are plural, with multiple manifestations, that cover various aspects of human life and social organization (ILA Literacy Glossary, 2020).

Media Literacy: The ability to access, analyze, evaluate, and communicate messages in different forms, across different systems (Martens, 2010).

New Literacies: For this dissertation, I embrace the ontological shift of the term, which focuses on the impact of the Internet and digital tools on literacy practices (Coiro, et al., 2008) and which uses the plural form ‘literacies. The plural form of literacies represents multiple and varied digital literacy practices (Coiro, et al., 2008).

Online Reading Comprehension: A problem-based inquiry process involving new skills, strategies, and dispositions on the Internet to generate important questions, and then locate, critically evaluate, synthesize, and communicate possible solutions to those problems online (Castek et al., 2015).

Professional Development: Participation in a process to improve teaching (Guskey, 2000).

Professional Learning: A modernized version of professional development that emphasizes educator empowerment through a participatory and collaborative learning process (NCTE, 2019).

Specialized Professional Language: An important part of professional communication (Lubina, 2002), specialized professional language is a formalized language found within a

particular discipline or community, including specific language and precise vocabulary associated with a field.

Signature Pedagogies: As defined by Shulman (2005), signature pedagogies are the "types of teaching that organize the fundamental ways in which future practitioners are educated for their new professions" (p. 52).

Texts: Any instance of language in use, including written, printed, and visual documents, transcripts, video, audio, and digital artifacts, and web pages (Fairclough, 2003).

Words: The meaningful representations of thought and language (Vygotsky, 1986).

Summary

In this dissertation I conceptualize professional learning as based within a situated sociocultural approach, recognizing that knowledge and language are not only influenced by social and cultural factors, but also by the specific context in which they are used and acquired. Interconnected theories under the umbrella of sociocultural theory served as a lens for understanding how teachers develop a specialized language and conceptions of digital literacy during a professional learning institute.

In an era dominated by technological innovations and increased participation and collaboration in digital-mediated spaces, there is an assumption that our classrooms resemble the outside world. However, many classroom spaces still privilege the tools and structures of the past, creating missed opportunities and inequitable experiences for students. National calls in the United States have emphasized the importance of teachers effectively using technology in the classroom to support student learning. They stress the need for quality professional learning to acquire the necessary knowledge and skills to use technology effectively and "increase digital literacy". The current study emphasizes the importance of acquiring and engaging a professional

language, the necessity for qualified teachers who understand the complexities of digital literacies, and the need for quality professional learning.

CHAPTER TWO: REVIEW OF THE LITERATURE

This dissertation identified and described elementary teachers' language of digital literacy during a professional learning institute and how that language was connected to evolving conceptions of digital literacy. The study underscored the importance of the professional learning context and the embedded activities and components in developing teachers' knowledge, skills, and language. Specifically, I addressed the following questions:

1. How do elementary teachers define digital literacy throughout the professional learning institute?
2. What terms and descriptors do elementary teachers use to label and discuss their emerging conceptualizations and instructional practices in digital literacy?
3. In the context of professional learning, in what ways do the teachers' language practices align with or diverge from the language practices, texts, and artifacts used by the professional learning provider (e.g., the institute)? What does the relationship between the participants and the institute reveal about acquiring a specialized professional language?

In this chapter, I review theoretical foundations of sociocultural learning models that undergird the structure of the institute and focus on the shift of language during professional development. I also review research on digital literacy, which serves as the content for the institute. Next, I review the research on teacher professional development practices, establish the importance of quality teacher professional learning, and explore research on technology literacy

professional learning for teachers broadly. Finally, I review current research focused on methods of digital literacy professional learning to support elementary teachers.

Theoretical Foundations

Vygotsky stated, "It is through others that we develop into ourselves" (Vygotsky, 1981, p. 161). Sociocultural perspectives (as an umbrella term) of literacy development are grounded in the work of Lev Vygotsky (1978) and emphasize the "social and cultural contexts in which literacy is practiced" (Perry, 2012, p. 51). Social interaction, joint human activity, and individual experiences are necessary for developing language, thoughts, and ideas. Vygotsky suggested that it is through experience and interaction that we learn the ability to think, problem solve, and connect to the world. He further suggested that social and participatory learning takes place in a zone of proximal development (ZPD) or the distance between what a learner can do independently and what they can do with guidance or from collaboration with a knowledgeable other (Vygotsky, 1978). Considerations of ZPD include the knowledgeable other, the social environment and interactions, and the scaffolding to learn and acquire new skills.

Although Vygotsky's theory is applied as a way to understand the development of children, it has been adapted to adult learners as well as they engage in learning and construct knowledge through dialogue (Warford, 2011). Vygotsky asserted learning and becoming are a result of our shared experiences and social interactions in a cultural context, mediated by language and social and cultural tools (John-Steiner & Mahn, 1996). Social and cultural tools (such as technology) and ways of thinking about and using tools are learned through experience and interaction with people and the environment. They are a way to connect the internal self (thoughts and ideas) with the external (lived experiences and interactions). As posited by John-

Steiner and Mahn, (1996), "tools, [including] the computer, are central to the appropriation of knowledge through representational activity by the developing individual" (p. 193).

Vygotsky (1986) further advanced the interconnected relationship between thought and language describing a back and forth, evolving process between what we are thinking (thoughts) and the words that we use to describe our thinking (language). Vygotsky explains that one informs and transforms the other during the process. Thoughts, he believed, can never be separated from language and culture. Therefore words, he explains, represents a "…close amalgam of thought and language…" (p. 212). From an adult learning perspective, the words we use to communicate are representative of thoughts, knowledge, and identity. Research has often applied a Vygotskian approach to studying adult communication processes, second language acquisition, and dialogue (DiCamilla & Anton, 2004; McCafferty, 1992). For this dissertation, I used the tenets of Vygotsky's theory to understand how adults acquired a specialized language in a dynamic, learning setting.

Learning is Social and Situated

Situated learning theory, as proposed by Lave and Wenger (1991), views learning as a social process whereby meaning is co-constructed by members of a community in a particular space through observation, reflection, and practice. It is social, physical, and cultural, marked by the interconnected relationships of meaning, community, learning, landscape, and knowledge (Wenger, 1998).

Communities are an important element of situated learning because they provide participants with a common social space to acquire knowledge, interpret and reflect on learning, engage in dialogue, grapple with content, and apply new learning. As Wenger (1998) states, "we all have our own theories and ways of understanding the world, and our communities of practice

are places where we develop, negotiate, and share them" (p. 48). Rogoff (1994) further elaborates on communities of learners, suggesting a perspective that embraces the *transformation of participation* during shared experiences, stating "...how people develop is a function of their transforming roles and understanding in the activities in which they participate" (p. 209). Social structures are formed and fostered within the community through social, literacy practices. Community members establish identities, negotiate social positions, use tools, collaborate to maintain the community, and create new forms of communication (Wenger, 1998).

Similar to Lave and Wenger, Gee (2003) referred to these domains as *affinity groups* whereby groups of people are actively engaged in meaningful interactions, acquiring and distributing knowledge, joint activities, and shared social practices around a common interest or goal. Group members are valued for their active roles and recognized for the diverse and extensive knowledge they bring to the group. Each community creates their own specialized form of communication and meaning-making processes according to the negotiations and social practices of the group members. It is this complex communication system that teachers must navigate, foster, and develop in their own classrooms. Every word, gesture, visual, and symbol serves to communicate knowledge, expectations, mandates, and suggested practices to enact. The language is reinforced and diffused by facilitators who belong to an organization (corporate, private, school-based). This is especially important and useful to understanding a professional development institute and how teachers develop a professional language and how that language is taken up within the community.

Language is Social and Situated

Language is an ever-evolving key function of our social existence. It is a social concept that is developed through experience and participation in social groups and mediated by the tools

and technologies of the culture. Language is a distinctive social convention, necessary to create and maintain a social reality and reliant upon the interactions of humans. Within a complex communication system, humans generate messages, express thoughts, and feelings, and convey meaning in a variety of ways (Gee, 2011). Although language is typically associated with traditional forms of speech and textual forms of communication, it can also encompass non-verbal forms such as visual representations, gestures or body movement, touch, societal artifacts, and paralanguage to name a few. Without language in all its forms, we would fail to develop relationships, create innovations, or even survive as a species.

In word-based communication (reading, writing, listening, speaking), words are never neutral. Language is the result of social practices, and all social practices are situated within a historical, cultural, and political context that uses language to serve a purpose (Fairclough, 2011, 2013; Gee, 2005). Halliday (1975) proposed that language developed because people wanted to communicate with one another and make meaning from the world around them. He later added, "language is the essential condition of knowing, the process by which experience becomes knowledge" (Halliday, 1993, p. 94). The innovations surrounding us, our beliefs and values, the ways we interact and identify, are all a result of the power and structure of language. As Bakhtin (1981) theorized, "word is born in a dialogue…" (p. 279). The word contains meaning and is formed and manipulated in relation to others. "There are no neutral words and forms…" (p. 291) and a struggle occurs in every verbal act as words and language from different periods, different contexts, and different social groups collide, remix, and meld together to form new meaning, with a new purpose.

The ways in which people communicate continuously shift with new ideas and constantly evolving innovations. This evolution is evident by taking a moment to reflect upon the multiple

forms of human communication and considering how new innovative tools continue to change communication practices. Transformed manifestations of language can be found in digital spaces, bristling with competing social groups, and influenced by the political, historical, and cultural forces. Leu (2001) suggests, social contexts influence how we communicate and what tools we use for communication. But new tools also influence social contexts; for example, consider the impact of new contexts such as social media or the invention of new tools, such as Twitter. Along with dialogue, literacy takes place by applying, experimenting, and practicing concepts through writing, leading to new forms of language construction (Bakhtin, 1981). In the digital space, conversational dialogue and communication in all its forms, can happen through messaging platforms (e.g., WeChat; WhatsApp; Telegram), on a blog or microblog (e.g., Twitter; Tumblr), through social networking video, image, and text-based platforms (e.g., Facebook; Instagram; TikTok), and in virtual spaces (e.g., gaming platforms; second life). There is still a complex, cultural conversation occurring where utterances, words, and symbolic representations are constantly being borrowed, reused, and repurposed by others to create new languages and new meanings.

Language in Institutions

Institutions can be defined as any corporate, educational, religions, or social organization. Institutions, by their very nature, communicate a particular agenda (Hardy, 2011; Lammers, 2011) and are designed to achieve a specific goal, while operating within defined ways of thinking, believing, and acting (Feller, 2017). As Feller (2017) suggests, a "better understanding of why and how people communicate within institutions is key to arriving at a better understanding of the institution itself (p. 319). In the context of a professional learning experience, the choice of words can alter how participants communicate information, what

details we should attend to or dismiss, and how others should act or what others should believe. The type of language we cultivate creates habits of mind, which influences thinking, decisions, and actions. When thinking about professional development spaces, language, activity, thinking, and power relations are inextricably entwined.

For example, noticing and naming is a social practice (Laman, 2012) and a central component of becoming a communicating human being, capable of participating in community activities (Johnston, 2004). Through our noticing and naming in the institutional setting of instructional spaces, teachers draw attention to significant features and structures of language and literacy that may go unnoticed (Johnston, 2004). Therefore, teacher professional development involves a component of noticing and naming language that transpires between the facilitators, colleagues, and participants to further develop specialized content knowledge and the acquisition of a professional language.

Conceptions of Language as Literacy Practices

Literacy encompasses the interrelated skills, dispositions, and meaning-making practices occurring in a variety of social spaces and contexts, which allow us to identify as part of a group and access, create, and communicate information. Street (2003) defines literacy as "the broader cultural conception of particular ways of thinking about and doing reading and writing in cultural contexts" as he views literacy as a social practice rather than isolated skills out of context (p. 79). As a social practice, *literacy* is not considered a singular entity, but rather includes multiple literacies, such as content literacy, cultural literacies, practical literacies, political literacy, visual literacy, multimodal literacies, and ICT literacies (to name a few). The term *literacy* will mean something different to each person depending on his or her cultural group, situation, and context (Harste, 2013; Street, 1998).

As social human beings, literacy encompasses daily communication (talking, listening, composing, and creating) in multiple forms (spoken, text, image, movement, gestures, art, objects, and multimedia) and varies according to cultural and contextual influences. And as wondering individuals, literacy involves seeking information and problem solving through exploration, socialization, activities, and technology. As such, literacies are multiple, interrelated, complex, and culturally situated and spoken and written words underpin literacy learning and practices.

Multiliteracies

The New London Group (1996) coined the term multiliteracies to identify the shift in communication and literacy practices taking place in different contexts. Multiliteracies focus on culture, language, and context and are embedded in social understandings. It allows participants and co-constructors of knowledge to combine language with other modes of meaning, while considering their cultural purpose (The New London Group, 1996). In Alvermann's (2008) words, literacies are, "the socially mediated ways of generating meaningful content through multiple modes of representation …" (p. 9). The digital space expands social spaces and encourages people to participate in conversations, develop their own forms of communication, and engage in collaborative problem solving (Davidson, 2012; Dowdall, 2009; Gillen, 2009; Marsh, 2011; Wohlwend et al., 2011). Words and language, used and transformed, are central to the focus of this dissertation.

Teacher Learning

Teacher professional learning over the course of their career is complex, multifaceted, and situated within political, social, and cultural contexts. Professional development serves as a necessary vehicle for continuously developing the capacities of teachers working in a dynamic

field. As Avalos (2011) states, “understanding professional development is about teacher learning, learning how to learn, and transforming their knowledge into practice for the benefit of their students’ growth” (p. 10). At the center of successful professional learning, is the teacher’s involvement in the process, their belief systems and perceptions, and their willingness to engage (Fullan, 1995; Guskey, 2002). Teachers merely attending professional development doesn’t necessarily lead to new knowledge or learning. As Guskey (2002) pointed out, a teacher’s beliefs, attitudes, and perceptions arise from a positive change in outcomes and performance. Belief systems are connected to a teacher’s prior experiences and their “evaluation and judgment” of what works or does not work (Pajares, 1992). Beliefs and attitude are powerful elements in learning something new. This signifies the importance of acknowledging both the technical content alongside the personal and social dimensions of teacher learning (Bell & Gilbert, 1996; Chalmers & Keown, 2006).

While teacher “learning and improvement” is necessary over the course of their career, Knobel and Kalman (2016) stress the importance of developing “professional practice” as well. They suggest teaching is a social practice, situated, and complex, and each teacher carries with them “specific sets of beliefs, ways of doings things, ways of using resources, … and ways of speaking…” (p. 4), all of which informs and shapes the professional development landscape and how we approach digital literacy PD. Ways of speaking and awareness of language as professional practice are of primary importance in this dissertation.

In the context of this study, professional competence, professional practice, and how they communicate in the context of the classroom are influenced by a teacher's knowledge, their willingness to change, and their career stage development. Each facet is explained next followed by the professional development literature.

Teacher Knowledge

Knowledge is the understanding and awareness of information, people, and things, acquired through lived experiences and education. Knowledge is both the practical everyday logic needed to solve common problems and the more specialized, learned expertise. It is a dynamic in nature, continuously shaped by experiences, interactions, education, culture, and society. Knowledge and language cannot be separated since language is how knowledge is gathered and communicated. Teachers express their knowledge through intentionally chosen words and phrases and the words they speak shape how they think. Therefore, an understanding of teacher knowledge is essential for this dissertation.

Teacher knowledge has been described and conceptualized in different ways, revealing the complex layers that construct knowing and understanding and the intersection between personal and professional spaces. Connelly, Clandinin, and He (1997) describe a teacher's personal practical knowledge as narrative stories of "past experience, in the …present mind and body, and in the future plans and actions" (p. 666). While the *teachers' professional knowledge landscape* (Clandinin & Connelly, 1996) is a complex combination of personal, practical, intellectual, and physical environments that are continuously changing and developing over the course of their careers. It is "what teachers know and how their knowing is expressed in teaching" (Connelly et al., 1997, p. 665). Cochran-Smith and Lytle (1999) narrow in on the professional landscape and describe three conceptions of professional knowledge related to practice. The first, "knowledge-*for*-practice", is formal knowledge and theory to improve practice. The second, "knowledge-*in*-practice", is the practical, reflective knowledge rooted in educational practices. The third, "knowledge-*of*-practice", occurs when knowledge and theory are generated as a result of intensive investigation and exploration of the teacher's own

classroom or school context and then connected to the larger educational landscape. Developing teacher knowledge requires an understanding of multiple intersecting facets working together and against each other. Connelly, Clandinin, and He (1997) explained how improving education means acknowledging and understanding both the teacher's personal practical knowledge and their professional knowledge landscape.

Professional language awareness and how language is employed during teaching is also a facet of a teacher's personal practical knowledge. Swart et al. (2018) explain that although expert communicative proficiency is necessary and expected in any educational context, teachers' language awareness is largely unexplored in professional learning literature. They describe how personal practical knowledge or "knowledge based on classroom practice as a result of past experience, present awareness and future expectation" (p. 168), is the primary catalyst of thinking and behavior and that thinking and behavior manifests as language. Therefore, teachers can develop their professional practice and communicative abilities by becoming aware of their "language-oriented learning" or language in use in the classroom.

Pedagogical Content Knowledge

Specific knowledge domains help us to understand what teachers need to know in the context of a specialized discipline. Lee Shulman (1986) proposed effective teachers exhibit a special understanding and knowledge of the intersection of content, instructional practices and pedagogy in the classroom setting. This pedagogical content knowledge develops at a different rate for teachers depending on their personal and professional experiences, interactions, and school culture.

Mishra and Koehler (2006) built onto Shulman's PCK framework by considering how teachers uses technology and what they need to know to harness the benefits of new innovations

and effectively integrate the tools into the classroom. Technological Pedagogical Content Knowledge or TPACK reinforces the notion that today's teacher requires skills, understanding, and knowledge of technology and how technology intersects with content, context, and pedagogy. It acknowledges the "complex, multifaceted, and situated nature of [technology] knowledge" that sometimes leads to frustration and anxiety from a lack of technological content knowledge or not knowing how to set up equipment and use various tools for productivity. Further, it recognizes the special skills and knowledge needed to integrate technology tool with current instructional practices, with a diverse range of learners, and across content areas (Mishra & Koehler, 2006). However, this framework has been critiqued for its broad conceptualizations and incomplete or insufficient descriptions of domains (Anderson et al., 2013; Cox & Graham, 2009; Graham, 2011), as well as its lack of specificity for how teachers should go about developing or changing their practices in the classroom (Cox & Graham, 2009; Pareto & Willermark, 2019). Further, when the original framework was introduced, there was no mention of digital literacy as it is defined and conceptualized in this paper. However, it should be noted that Kereluik, Mishra, & Koehler (2011) later introduced their own definition and understanding of new literacies and the need for teachers to engage in "deep play and creativity" to subvert traditional and limited technology practices.

Teacher Change

Change is a necessary and expected part of life. Simply defined, *change* is the act or instance of becoming different. It requires a departure from the norm, a journey through unknown terrains, mixed feelings and confusion, and entry into a new normal. Without change, we would cease to move forward and progress as individuals, communities, and organizations. Although this is a natural part of living and becoming, it is often met with trepidation. The mere

act of shifting away from a comfortable and familiar state can be disorienting, especially in an entrenched culture. Asking individuals or an organization to change in order to innovate and develop practices, programs, or thinking can potentially create cognitive dissonance, resistance, and stress as is sometimes the case in education.

Teacher development, teacher socialization, and teacher learning are terms used within the literature to describe teacher change as part of the professional learning process (Richardson & Placier, 2001). Teachers are tasked with changing practices, routines, pedagogy and thinking in an effort to meet the needs of stakeholders, to reach a desired academic outcome, or to develop personally and professionally. Sometimes change is natural, anticipated, and even solicited, while other times, it is imposed by authority, as is often the case in education. Imposed change produces resistance to new ideas, innovations, or ways of operating even if the outcomes are constructive and necessary (Waddell & Sohal, 1998). Since resistance is a common barrier to change, understanding the nature and process of the resistance is helpful when planning for the implementation and diffusion of ideas and innovations (Waddell & Sohal, 1998). Furthermore, resistance can be a healthy indicator of "unnecessary change" (de Jager, 2001; Mitchell, et al., 2015). Ultimately, whether the change will be successful or met with resistance depends on the teacher's perception of the proposed idea and what they are willing to invest, learn, and adopt (Ellsworth, 2000).

Evolving technology innovations in and out of the classroom are a form of change that has been met with a combination of interest, fear, and resistance. Whenever new tools are introduced to the teaching context, some corresponding change in instruction is necessary. Schools are challenged to consider where, when, and how digital technology impacts teaching and learning. As innovations continue to transform, and physical and virtual spaces blur, digital

tools and online spaces are changing the manners in which people read and write and what is regarded as literacy (Milton & Vozzo, 2013) and therefore changing what teachers need to know and be able to do in the classroom.

Career Stages

Observing and talking with a group of teachers would reveal a range of knowledge and skills across and within various career stages. Career stages are used to describe points in a teacher's professional life that indicate a body of knowledge, awareness, beliefs, or comfort. Some people view a career as a linear progression from beginning to end, while others view it as a dynamic cyclical process that continues to build, grow, and fluctuate depending on the teacher (Guskey & Huberman, 1995). Novice educators may be primarily concerned with classroom management, learning curriculum, establishing relationships with their students, navigating the school setting, or paperwork procedures. Others further along in their career begin to move away from the need to survive and focus more on the needs of their students and honing their skills as teachers. A teacher who has found some stability may begin to seek opportunities to grow and expand beyond their own classroom or school and support the profession as a whole.

Masuda, Ebersole, and Barrett (2013) conducted a qualitative study with 16 teachers at different phases of their career and their attitude and willingness to engage in professional development and found that although reasons for attending and engaging may have differed, overwhelmingly, teachers at all career stages wanted learning that was relevant and applicable. They further noted, PD that was perceived to be imposed or based on compliance, had less reported value or usefulness.

Given that career changes can impact teacher change, in this study, I draw on data from teachers across different career points with an understanding that career stages help inform

professional development practices as the ways in which identity, knowledge, skills, and dispositions may vary depending on career shifts and change.

Professional Development Literature

The professional development literature suggests that teacher knowledge, thinking, and learning is situated within a physical, social, and political context, with experiences comprising on-going, collaborative activities and opportunities to engage in "thoughtful and critical conversations", inquiry, and reflective practices (Feiman-Nemser, 2001; Putnam & Borko, 2000). This study examined teachers engaged in a professional learning context; therefore, it is important to understand how professional development and professional learning are defined, what constitutes professional learning, and what the determining characteristics of effective professional development are. Finally, since this dissertation took place at a digital literacy institute, I examine technology professional development practices and digital literacy professional development practices.

Throughout this portion of the literature review, I will be using *professional development* rather than *professional learning* to align with what previous research has reported and used, unless I am explicitly speaking about the difference between the terms. The term professional development is still widely used in the educational domain as a broad overarching term.

Defining Professional Development

How we talk about and define professional development has changed over time, influenced by the research, policy, and beliefs. Simply put, professional development is "learning activities related to the profession of teaching" (Fishman, 2016, p. 14). However, many more nuanced definitions have encompassed the range of complexities and intricacies of professional development. Fullen (1995) originally described professional development as a continual process

in a teacher's career lifespan that included all the "formal and informal learning pursued and experienced by the teacher in a compelling learning environment under conditions of complexity and dynamic change" (p.265). Similarly, Desimone (2009) described professional development as any type of learning experience in any context that improves instructional techniques, student achievement, or professional practices. Correspondingly but more specifically, Guskey (2002) viewed professional development programs as "systematic efforts to bring about change in the classroom practices of teachers, in their attitudes and beliefs, and in the learning outcomes of students" (p. 381). Each definition overlaps and emphasizes places and forms of learning, teacher involvement and investment, and the pursuit of learning to impact students.

Even more nuanced than the definition is the subtle shift in language used to refer to teacher learning. Phrases that often appear in the literature are teaching training, teacher development, professional development, and teacher learning. However, the differences between the words training, development, and learning frames the involvement and investment of the teacher. "Training" is perceived as a linear, skills-based application and process where the teacher often sits and gets the information from the expert, while "development" implies a progression of knowledge and understanding with the teacher taking an active role in the activity and experience. However, some have gone even further to differentiate between "development" and "learning" (Bostock, 2012; Easton, 2008; Stewart, 2014). Although used interchangeably to describe teachers' continuous learning, development, and professional growth, *professional development* and *professional learning* are not the same according to the literature. The National Council of Teachers of English (2019) recently updated their language from *development* to *learning* to signify a different way of conceptualizing a teacher's development and engagement in the process of learning that aligns more closely to their core tenets and vision. They suggest

that professional development is often a “top-down, one-size-fits-all” or “directed at” approach as opposed to professional learning that is defined and conceptualized as an empowering, collaborative, and participatory process that acknowledges and utilizes the skills and knowledge of the participants. This is echoed in the literature (Bostock, 2012; Easton, 2008) and draws attention to the need for teachers to have choice, voice, support, and participation during learning or to shape their learning experience. This conception of professional learning is important to how we envision teachers learning about technology integration and digital literacies.

Quality Characteristics of Professional Development

Necessary components of any professional learning context are the communicated core concepts or objectives and the facilitation of content. However, identifying quality indicators or features of professional development help elucidate the expected outcomes and answer the questions what do teachers learn and how does learning present itself? Borko, Jacobs, and Koellner (2010) provided a comprehensive overview of content and process characteristics of effective PD and compare outdated notions (traditional design workshop, focus on activities, shorter duration, transference of knowledge, outside of context) versus newer models (building capacity, variety of formats, extended duration, co-construction of agenda, variety of contexts). While Darling-Hammond and Richardson (2009) describe specific PD practices such as content, context, and design, to develop teacher competence. Desimone along with a team of researchers examined different factors and characteristics of professional development to determine effective (Garet et al., 2001). Findings across studies have influenced the design of PD programs and what best support teacher learning and impacts student outcomes.

Thinking about best practices and characteristics across studies, Desimone (2009) developed a framework of thinking through effective experiences with a particular focus on each

aspect of professional learning from the experience to the enacted practices to the subsequent student scores at the end that is still used today as the key indicators of quality professional learning. From her analysis of extant literature, Desimone identifies five "core features" (content focus, active learning, coherence, duration, and collective participation) or quality indicators every professional development experience should have: (1) have a specific focus on content matter, (2) involve active, minds-on learning, (3) align with school or district policy and be in coherence with personal knowledge and beliefs, (4) extend over a period of time, and (5) involve collective participation with peers from the same school or district. She suggests these five indicators should be present in opportunities but acknowledges that these alone do not ensure effectiveness. *Content focus*, the first feature, necessitates professional development that is concentrated on specific innovations or subject matter, and which allows a deeper exploration or investigation into those innovations and subjects. The teachers directly responsible for using the innovation or delivering the content should determine the professional development content. The second feature, *active learning*, involves teachers having the opportunity to observe, interact, give, and receive feedback, review student work, share information, and participate in discourse. The third feature, *coherence*, states professional development opportunities be aligned with organization goals or missions, state standards, national reforms, and teacher goals and needs. The fourth feature, *duration*, requires ongoing, continued professional development. "Sufficient duration" depends on the needs of the teachers and organization. The final feature, *collective participation*, is the collaborative efforts between change agents, leadership, stakeholders, and participants in planning professional development, engaging in learning, and co-constructing knowledge. This is arguably the most important feature in that it ensures a sense of community, builds trust, fosters relationships, and encourages ongoing communication.

Ultimately, effectiveness is measured as a change in teacher practice resulting in an impact on student learning. This may appear as an increase in teachers' pedagogical content knowledge in a content area, development of special skills and expertise, changes in attitudes or beliefs, and/or changes in pedagogical practice.

This framework emphasizes professional development models that not only include knowledge "in" and "of" practice, but also knowledge "for" practice where teachers generate knowledge by investigating their own classroom practices, challenge and scrutinize ideas, and collaborate and communicate with other professionals to capitalize on the collective knowledge (Cochran-Smith & Lytle, 1999). In addition, it emphasizes the need to include participants and their personal practical knowledge (Connelly et al., 1997). Not specifically mentioned or possibly implied is the need for the facilitator to model a specialized language as part of the content focus or how teachers might develop a specialized language as part of the content focus. Through this dissertation, I will be contributing to this aspect of the framework as an outcome of professional learning.

Signature Pedagogies in Professional Development

Lee Shulman (2005) describes signature pedagogies as the teaching approaches, specific to certain fields or disciplines, which adjust and evolve in light of changing sociopolitical and cultural landscapes. He argues each discipline has its own distinct knowledge base, set of practices, and ways of thinking, which leads to unique approaches to teaching and learning within that field or discipline stating, "novices are instructed in critical aspects of the three fundamental dimensions of professional work –to *think*, to *perform*, and to *act with integrity*" (Shulman, 2005, p. 52) within that profession or organization. According to Shulman, signature pedagogies are not only specific to disciplines, but also to institutions or programs, and therefore

can be seen as a way to differentiate teaching and learning in different context. Signature pedagogies are important because "they implicitly define what counts as knowledge in a field and how things become known" (Shulman, 2005, p. 54). Shulman identifies three dimensions of signature pedagogies including (1) *surface structure* or the visible acts of teaching and learning, (2) *deep structure* or the assumptions about how knowledge is best imparted, and (3) *implicit structure* or "beliefs about professional attitudes, values, and dispositions" (p. 55).

McLain (2022) suggests, "the concept of signature pedagogies provides a framework for recognizing, discussing and critiquing pedagogical approaches, or a lens by which to examine them" (p. 1643). In his literature review attempting to answer questions related to the signature pedagogies of design and technology education, McLain identified four themes consisting of, locations, capability, uncertainty, and challenges. He defined "uncertainty" as "an emotionally uncomfortable, but pedagogically necessary component of learning, where students learn to become autonomous and resilient" (p. 1643). This is especially important with the rapid evolution of innovations. With respect to technology education, he identified project-based learning, and the three supporting features of design thinking, design studios, and design critique, as a promising signature pedagogy to reinforce how to think, perform, and act.

Formats of Professional Development

Understanding what type of professional development opportunities to offer and plan essentially depends on the existing needs and knowledge base of the educators and the range of career expertise. Additionally, educators want an experience that is meaningful and relevant to their current practice. Some suggest the best model of professional development would include ongoing experiences, ownership, opportunity for reflection, hands-on practice, peer dialogue,

and professional inquiry (Cochran-Smith & Lytle 1999; Dana & Yendol-Hoppey, 2009; Feiman-Nemser, 2001; Putnam & Borko, 2000).

Formats of professional development vary, and each serves a specific purpose or goal. Teacher professional development may conjure after school workshops, in-service training, or countywide offerings (Borko, 2004; Desimone, 2009) and in some places that is still the accepted norm, but professional development offerings can include anything from book clubs, professional journals, professional conferences and institutes, to more flexible formats online such as social media groups or discussion boards (Greenhow et al., 2018; Harvey & Hyndman, 2018; Hutchison & Colwell, 2012) and synchronous and asynchronous online programs (McAleer & Bangert, 2011; Surrette & Johnson, 2015), or more intensive job-embedded formats such as content coaching to support pedagogical practice (Scott, Cortina, & Carlisle, 2012; Mundy, et al., 2012) or professional learning communities (MacPhail, et al., 2014).

Technology Professional Development Practices

The technology professional development literature is largely focused on supporting technology integration practices (Pan & Franklin, 2011; Tondeur et al., 2017), teacher beliefs and attitudes towards technology (Ertmer et al., 2012; Petko, 2012; Tondeur et al., 2017), fostering technology-related knowledge and skills (Saubern et al., 2020), and approaches towards technology PD (Avci et al., 2020). Throughout the studies is a notable focus on the use of technology and how teachers respond to technology.

Other technology focused PD literature is related to the evaluation, application, and use of specific integration frameworks such as the SAMR model (Puentedura, 2006) for support varying levels of classroom integration within four domains (Hamilton et al., 2016) and literature pertaining to the widely used TPACK framework (Mishra & Koehler, 2006) examining areas

such as technology proficiency (Saubern et al., 2020); 1:1 device initiatives (Blau et al., 2014), and teacher learning and PD practices (Guggemos & Seufert, 2021; Morsink, et al., 2010). While the TPACK framework was designed to address what teachers need to know and understand to use technology effectively and how technology is integrated in the classroom (Koehler et al., 2013), the SAMR Model was created to describe how technology could be integrated throughout the K-12 curriculum, according to different taxonomies related to enhancement and transformation (Puentedura, 2014). Interestingly, Puentedura also saw the SAMR model as a way to promote a unifying language about technology integration across vastly different disciplines to facilitate a community of practice. Both models have been criticized for not acknowledging contextual factors such as access and resources, support for teachers, unique needs of educational settings, and student needs (Hamilton et al., 2016; Pareto & Willermark, 2019). However, the frameworks have been a useful catalyst for understanding how teachers come to learn and use technology in the classroom, while also becoming an invaluable tool for designing technology professional development opportunities (Pareto & Willermark, 2019).

As evidenced above, technology professional development literature has overwhelmingly focused on technology integration skills and on learning or using devices, apps, and software (Hutchison, 2012; Kalman & Guerrero, 2013, Knobel & Kalman, 2016). As Knobel and Kalman suggest, “this literature places “digital technology itself at the heart of the professional development experience”, disregarding how technologies can support literacy teaching practices and student learning. One example is provided by Paulus, Villegas, and Howze-Owens (2020) where they discuss the “use of educational technologies” in the classroom and the equivalence of technology tools to other traditional materials. And while this literature is important and needed,

professional development for teachers should also address the "literacy learning experiences" and the role in the literacy classroom (Hutchison, 2012; Knobel & Kalman, 2016).

Digital Literacy Competencies and Professional Development

Literature related to how teachers use and understand digital literacy in the classroom is necessary for understanding why digital literacy PD is needed and what types of professional learning would best support teachers' thinking and professional practice. My search focused on inservice teachers' use and conceptions of digital literacies in the classroom rather than studies focused on student outcomes and student experiences. The literature included teacher perspectives and beliefs about digital literacies (Daniels et al. 2019; Sadaf & Johnson, 2017), teacher use of digital literacies in classroom instruction (Price-Dennis et al., 2015), and teachers' conceptions about digital literacies (Lindstrom & Niederhauser, 2016).

Lindstrom and Niederhauser (2016) for example, conducted a cross-case analysis of digital literacy practices in an elementary classroom, which revealed the teachers' role in inviting or preventing out-of-school digital literacies into the classroom. They underscored the need for teachers to develop an understanding of digital literacy practices in and out of the classroom to model the differences of language across various modes of communication and to support literacy learning (Lindstrom & Niederhauser, 2016). This study aligns with previous research suggesting students out-of-school literacy practices are often overlooked or underutilized in classroom instruction (Alvermann, 2010; Moje, 2015). Moreover, this speaks to a larger issue of what we assume teachers understand about digital literacy because they use devices and socialize in digital spaces outside of the school context. Expecting teachers to rely on their own out-of-school literacies and digital experiences to support in the classroom instruction is unfair to

teachers and in some cases adverse to students' literacy learning and development (Daniels et al. 2020).

Teacher Professional Development in Digital Literacy

Digital forms of reading, writing, creating, participating, and communicating are a part of digital literacy competencies and integrating those forms into classrooms that privilege traditional modes of literacy teaching and learning is challenging. Especially when PD focuses on tool-centric practices and skills out of context or PD. To develop conceptions of digital literacy, teachers need access to professional development that provides additional insight and support to help them understand digital literacies in and out of the classroom and how the integration of digital literacies beyond the equipment and devices, promotes literacy growth and development.

Although professional development literature addressing how to support K-12 teachers' thinking and conceptual understanding of digital literacy does exist, much of it is focused on pre-service teachers in teacher education programs. Pedagogical content knowledge and experiences of inservice and pre-service teachers differs, so the types of professional development offered will look different as well. I am concerned here with literature on K-12 educational contexts and inservice teachers. What I found mentioned in the literature are models and formats of digital literacy PD and outcomes of participation in digital literacy PD.

Models of Digital Literacy PD. Models of digital literacy professional development mentioned in the literature varies from school-based action-research (Lotherington et al., 2016), social media such as Twitter PD (Biddolph & Curwood, 2016), virtual coaching support (Zimmers & Matthews, 2022), self-driven learning (Bostock, 2012), and inquiry and project-based digital literacy institutes (Hobbs & Coiro, 2016, 2019; Spires et al., 2009). Each method

above emphasizes a move away from traditional PD structures (i.e., sit and take and lecture) and a move towards more authentic and professionally driven models offering learning on demand experiences, exploration, or coaching-style supports. Although they vary in how the PD is offered and supported, each acknowledges and values inservice teachers' professional knowledge, skillsets, and autonomy.

In addition to the criteria for effective professional development outlined by Desimone (2009), Jenkins (2009) suggests models of digital literacy PD should be hands-on play, active, exploratory, and collaborative learning. Henry Jenkins and colleagues from Project New Media Literacies reimagined professional development for teachers that considered the skills, knowledge, and dispositions needed to participate in a digital culture. Jenkins' team believed PD focused on digital and media literacies should resemble a participatory culture. In digital realms, members of a participatory culture act as consumers, producers, and contributors of knowledge. According to Jenkins, a participatory culture includes a strong support system and mentorship, values member contributions, and has relatively few barriers to participation. Four values shape the design of participatory PD. The first value is stated as *participation, not indoctrination* where PD is *with* teachers not *for* teachers. This suggests, "knowledge is distributed across … people and tools". The second value, *exploration, not prescription*, encourages teachers to explore their professional goals and believes PD is based on what teachers want, not what is required. The third value, *contextualization, not abstraction* asks for PD programs that are tailored to and connected to real world needs. The final value, *iteration, not repetition*, asks that PD be ongoing and relevant and allow for constant improvement through evaluation.

In a similar way to Project New Media Literacies, Hobbs and Coiro (2016, 2019) reimagined a professional learning institute to foster and promote digital literacy. They designed

a digital literacy program, which included methods and frameworks of inquiry, inviting the use of a range of skills and practices, collaborative and interdisciplinary supports, coaching, hands-on experiences, and opportunities to create products, putting learners at the center of the learning, not the tools. The participants' motivation for learning about digital literacy and choice in what they learn and create at the institute, under the guidance of expert facilitators, are essential design considerations for fostering conceptions and dispositions of digital literacy.

Outcomes of Digital Literacy PD. Few studies address the outcomes of participating in digital literacy professional development. Van Allen and Zygouris-Coe (2019) designed a professional learning experience for an elementary teacher to support conceptions of digital literacy. Specifically, they sought to support one teacher's understanding of online comprehension practices and examine how the teacher enacted the new learning in her classroom. Grounding their research in the online comprehension and online inquiry literature of Coiro & Dobler (2007) and Leu et al. (2017), they designed a professional development sequence that began with a starting definition of online research and comprehension, along with a purpose for classroom integration in the classroom, then addressed five online research strategies and dispositions of online readers, accompanied by explicit definitions of each. Teacher outcomes of this study included an increased awareness of how to approach online research in the classroom, how to explicitly support students' thinking while online, and role changes between the teacher and students, where the students felt empowered to engage in the work and the teacher assumed a more strategic role of facilitator and guide.

Language of Teachers

Language is a tool of knowledge that develops through social experiences and informs how people construct and understand their world (Halliday, 1975; Vygotsky, 1987; Rogoff,

1990). “Language is central to our experience of being human, and the languages we speak profoundly shape the way we think, the way we see the world, the way we live our lives” (Boroditsky, 2009, p. 129). Although this applies to any person in any context, here I argue that the language we choose to speak profoundly shape our professional identity, how we think about literacy practices and digital technologies, how we teach in the classroom, and ultimately how students come to know and understand digital literacy in and out of the classroom.

Professional Language and the Literature

Aldous Huxley (1958) stated, “Language permits its users to pay attention to things, persons and events, even when the things and persons are absent, and the events are not taking place” (p. 168). Words and phrases serve as a beacon to shed light on what is hidden or to call students forward in a particular direction. Teachers employ words to promote interest, to clarify, to model, to draw attention, to facilitate thinking, and to transmit important disciplinary content.

In most classrooms, teachers generate majority of the talk and language, through teaching, providing directions, prompting, redirecting, noticing and naming, and asking questions. Language, therefore, becomes a valuable resource and tool throughout the day. Teacher language, also described as teacher talk, dialogic practices, and classroom discourse, has been studied at length, generating a list of specific practices teachers intentionally employ throughout the day for different purposes. Some studies have demonstrated how precise language and intentional questioning techniques can promote comprehension (Boyd, 2015), others have examined the effectiveness of dialogic classroom talk on engagement and learning (Wegerif, 2009), and still others have examined how teacher talk during reading can impact not only comprehension, but also the social-emotional development of students (Johnston, 2019). Moreover, studies have shown the demands of content area language instruction and the need for

teachers to develop more precise language and dialogue when they teach (Mercer, 2008; Mortimer & Scott, 2003).

Teachers develop purposeful and intentional classroom talk and discourse practices through teacher education programs, job-embedded supports, and through other professional learning experiences. The following studies demonstrate how professional language has been studied in professional learning contexts. Sedova, Sedlacek, Svaricek (2016) examined how a professional development program focused on dialogic classroom techniques improved classroom discourse and ultimately student reasoning. Secondary teachers voluntarily signed up for a professional development program that consisted of explicit instruction in dialogic techniques and classroom practices, opportunities to engage in group discussions, and video-recorded lessons enacting dialogic techniques for review. Researchers reported a change in teacher talk and questions that lead to a "compelling change in classroom discourse". This was attributed to the professional development program. In other related studies, Swart, Onstenk, Knezic, and Graaff examined language-oriented development in teachers and the impact on awareness and use in the classroom (2018) and teachers' conceptualization of ongoing language development (2017). While they mention this is not new and has been studied in second-language teaching and vocational studies, Swart et al. (2017) apply the trend of language-oriented development to teacher education using Socratic dialogues with peer groups. They posed the question "what is language-developing learning?". Findings demonstrate a change in how they conceptualized language-developing learning and shifting from language as a tool to language as a target in the classroom. The authors recommend integrating "both pedagogical and language knowledge into teacher educators' pedagogical repertoire" (2017, p. 422).

The studies emphasize how professional development can and does have an impact on professional language acquisition and how language is an outcome of professional learning experiences.

Language of Digital Literacy

The new literacies field does not have a distinctive language; it is constantly evolving and shifting. However, the language of digital literacies is used as a tool to think about and discuss concepts and practices related to the field. Understanding of these concepts is essential if teachers are to make sense of the way digital literacies should be enacted in the classroom.

Opinions and purpose of definitions vary from using definitions as a starting point for a conversation, using a definition to inform research directions and analysis, using a definition to categorize information, and using definitions as shared meaning and understanding as part of a community. As noted previously, traditional definitions of literacy are insufficient and that includes outdated notions of digital literacy as merely ICT skills and technology use. However, as mentioned throughout this dissertation, digital literacy is a highly contextualized umbrella term, described as a moving target, evolving with the technological advances. So why would a definition that is so nuanced and varied be paramount? The answer is two-fold. First, definitions help situate a study and open dialogue about a topic. How I define and talk about digital literacy throughout ultimately impacts how I designed my study and how I analyzed the data. Second, elementary teachers' self-generated definitions of digital literacy over the course of a 42-hour institute serve as a piece of data. The definition provides insight into participants' thinking, beliefs, and evolving conceptions of digital literacy over the course of professional learning. The definition and the words elementary teachers choose to include are a starting point.

Furthermore, we know digital literacy is no longer only technical skills. Digital literacy was once described in the same way as ICT skills, which included everyday technology skills from how to operate equipment and software, how to use a device, or how to send an email. Paul Gilster however, (1997) promoted a definition of digital literacy that changed how some fields came to understand it. He said, "it is literacy in the digital age. An ability to understand and use information from a variety of digital sources." He added, "digital literacy is beyond keystrokes".

Web 2.0 was the next big digital turn to further evolve how we use the term digital literacy across different fields for different reasons. Web 2.0 brought online communities and social platforms to a global audience and invited users to participate in content creation (i.e., texts, videos, images). This opened the proverbial floodgates and users needed to adapt and evolve their notions of reading, writing, and communicating and how to navigate different sources of information. With this shift, came new way of thinking and talking about digital literacies. Some defined it in terms of social practices and conceptions of reading and writing. Others defined it in terms of the digital messages circulating across cultural and political landscapes. And still others defined digital literacies as a cognitive process associated with online reading comprehension. Technology tools and digital spaces are certainly a part of digital literacy, but there is something more going on and something more we need to talk about with teachers.

Further reaffirming the need to add to the research in this area is the use of the term digital literacy in current research and how scholars use a definition of "digital literacy" or lack thereof to design a study and analyze findings. My own search of "digital literacy" and "professional development" in "education" literature revealed the variance in how scholars either discuss digital literacy without naming it or in how they define digital literacy but use an

outdated definition of the term. For example, one study described teachers' digital literacy training as developing ICT skills and competence, familiarity with classroom tools, creating content, and integration practices (Stoican et al., 2015). In K-12 educational settings, if we are still using the term digital literacy as a substitute for ICT or e-learning or information literacy, then we remain focused on tools driving the conversation and professional learning. Without identifying what digital literacy could be as it relates to the K-12 education setting, we are missing an opportunity to address a multitude of rich and varied literacy practices, critical for engaging in a connected world. We may also miss the opportunity to design K-12 professional learning experiences that support expanded conceptions of digital literacy and appropriate pedagogical practices. This is in line with what other scholars have mentioned previously about moving the focus away from tools towards a focus on literacy practices and teachers as learners (Hutchison, 2012; Hobbs & Coiro, 2019; Knobel & Kalman, 2016).

Summary

The purpose of this chapter was to review the extant literature to situate this study centered on a shift in language during professional learning and to provide a foundation for understanding the choices I made in my study design and analysis. The review described existing research on teacher professional learning, technology professional development, digital literacy professional development, and teacher language.

CHAPTER THREE: THE RESEARCH DESIGN

The classroom ecosystem is varied and multifaceted. It includes a plethora of tools to support teaching and learning, and language, as a tool for teaching, is a critical component of a functioning, thriving system. Teachers' professional language and how they describe and talk about concepts, disciplines, and practices define the parameters within which they construct the classroom environment. This holds true for how they discuss or communicate digital literacy concepts and competencies in their classrooms. Professional learning experiences are a solution for developing a new professional language and supporting teachers as they envision connected devices, technology tools, and online spaces in their classrooms. Therefore, in this dissertation, I explored how teachers acquired a professional language of digital literacy and developed conceptions of digital literacy during professional learning. Specifically, I addressed the following questions:

1. How do elementary teachers define digital literacy throughout the professional learning institute?
2. What terms and descriptors do elementary teachers use to label and discuss their emerging conceptualizations and instructional practices in digital literacy?
3. In the context of professional learning, in what ways do the teachers' language practices align with or diverge from the language practices, texts, and artifacts used by the professional learning provider (e.g., the institute)? What does the relationship between the participants and the institute reveal about acquiring a specialized professional language?

Methodological Approach

I approached my study from an interpretivist frame in which I sought to understand the phenomenon of acquiring a specialized professional language and how teachers developed notions and understandings about a specific discipline, learned through a socially situated experience of professional learning (the Institute). In this study, I brought "my own experience and understanding" (Merriam, 2009, p. 45) as a former attendee of the institute at the center of this study. As such, I considered the context of the language and the social interactions taking place throughout this organization. Interpretivism, within a subjectivist epistemology, rejects objectivist views and claims knowledge, as a human and social construct, is impossible to separate from who we are, and therefore influences how we understand and perceive the world. Knowledge is gained inductively through situations, unique contexts, and personal experience, and language is acquired through interactions and engagement in the world. This paradigm assumes a relativist ontology whereby reality is constructed intersubjectively and socially and experientially situated (Crotty, 1998; Guba & Lincoln, 1994). As Myers (2008) states, "access to reality is only through social constructions such as language, consciousness, shared meanings, and instruments" (p. 38).

A situated sociocultural approach (Gee, 2010), grounded in and informed by new literacies studies (Coiro et al., 2008; Lankshear & Knobel, 2011), critical theories of language and literacy within an institutional setting (Feller, 2017; Fairclough 2011; Gee & Green, 2011), and situated learning theory (Lave & Wenger, 1991), informs this study and how I analyzed and interpreted a shift in language and acquisition of a specialized professional language, during a professional learning experience. The institute at the center of this study is laden with words, phrases, activities, and practices unique to their context and the field of digital literacy. By its

very nature, the organization is an amalgamation of text and talk set in the currents of sociopolitical and sociocultural ebbs and flows. The participants who attend the institute both contribute to and are changed by the text and talk over the course of the week. Language emerges in social conversations, cultural artifacts, survey responses, interviews, documents, websites, sessions, and keynote proceedings. For these reasons, I chose an exploratory qualitative study using different analytical approaches and tools for text mining to closely examine the use and development of language across four individual participants and the relationship of their language with that of the institute. I used both a content analysis and a discourse analytical approach as forms of empirical inquiry, to answer questions related to words used to describe digital literacies and language in use.

A content analysis of disciplinary vocabulary aligned with digital literacy aims to understand the symbolic qualities of those words within the cultural context of the professional learning (Krippendorff, 2018). While a discourse analytic approach emphasizes the contextual meaning and social aspects of language and how people employ language to achieve a particular goal or become part of a community (Gee, 2014). For this study, language is the verbal, visual representations, and artifacts taken up and created by the institute and participants. These analytic approaches were best suited to answer my research questions because I explored the phenomena of language use during a professional learning space to generate valid inferences about the shift in teachers' language and what those shifts represented.

This qualitative study is situated within a larger, design-based research study investigating multiple aspects of a professional learning institute including participant identity, leadership development, and inquiry as professional learning (Director 1 & Director 2, 2016). Through this study, I aim to contribute to this ongoing research by exploring the ways in which

the teachers adopt and use a professional language as they engage in various professional learning opportunities during a digital literacy institute and what that means in terms of their expanding notions of digital literacy. I used data collected from a previous offering of the institute to generate implications for professional learning practices and provide insight on the ways in which teachers begin to develop conceptions of digital literacies and how they develop a professional language.

The Institute History and Overview

The first institute took place in the summer of 2013 with 60 attendees and grew to over 100 participants in subsequent years. This 42-hour professional learning institute is hosted by a university in the northeastern US. Two faculty members conceptualized the institute as a result of an interdisciplinary collaboration spanning Communications and Media Studies and the School of Education. The co-directors sought to create an innovative professional learning program to develop, expand, and challenge conceptions of literacies and the impact of new media communication tools in educational settings.

The intended purpose of the institute was, and continues to be, a professional learning experience founded on the principles of hands-on, inquiry-based methods and creative media making through "dyadic partnerships", the cornerstone of the institute philosophy "everyone learns from everyone" (Director 1 & Director 2, 2016). The institute is a departure from make-and-take workshops, knowledge transmission models, or a training course where the intent is only on learning new technical skills, tools, or devices. Instead, learning is situated within sociocultural activities and participation through a collaborative inquiry learning model (Director 1 & Director 2, 2018), whereby the participants engage with one another in different experiences across the course of the week to create a final project of their choice.

Faculty

A team of 13 leadership faculty, composed of professors, education and media professionals, and graduate students, from various institutions and disciplines, oversaw the daily operations of the institute, under the guidance of the directors. The directors chose the faculty for their diverse perspectives and expertise in digital and media literacies, as well as their shared commitment to develop digital literacy competencies and dispositions. Higher education faculty represented the fields of education, English, applied linguistics, media, and communication, and came from the several research universities across the US. School-based professionals were represented by administration and teachers from public charter schools at the school and district level. Other professionals within the fields of education and leadership development worked in government or private organizations. The range of fields, backgrounds, and locations of the participating faculty ensured attendees received a range of perspectives and support for their respective fields.

Prior to the iteration of data collection that is the focus of this study, the leadership faculty met online leading up to the institute to determine the daily structure, sessions, activities, and goals. The faculty discussed the importance of a common nomenclature to avoid inconsistent messages and terminology. This included a shared understanding of the institute frameworks and the expectation to embed the language of the frameworks throughout their sessions, discussions, and interactions.

Attendees

During 2016, the institute hosted 107 attendees from across the nation. The institute was promoted through word of mouth from previous attendees and through targeted social media platforms such as Facebook, Twitter, the university, and institute affiliated websites, and through

email blasts to different schools, universities, and organizations. Attendees included K-12 professionals (classroom teachers, administrators, specialist), media specialists (library sciences K-12), higher education (faculty, graduate students), and other professionals (organizations, community groups) from across disciplines who shared a desire to learn more about digital and media literacies (Table 3.1). According to the survey, participants were diverse in terms of their professional backgrounds, experience with technology, and their knowledge of digital literacies.

Table 3.1. *The Self-Reported Demographic Characteristics of Attendees*

Attendee Demographics	Frequency	%
Gender		
Female	85	80%
Male	22	20%
Age Range		
	11	10%
21-29	24	22%
30-39	30	28%
40-49	32	31%
50-59	10	9%
60 +		
Race/Ethnicity		
White/Caucasian	95	88%
Black/African American	4	4%
Asian American	2	2%
Mixed/Other	3	3%
No Response	3	3%
Tier Participation		
Tier 1	93	87%
Tier 2	14	13%
Occupation		
Higher Education	24	22%
Library/Media	24	22%
K-12 Education	52	49%
Other fields	7	7%
	107	100%

Participants attended the institute by choice rather than through incentives or institutional initiatives. The cost of the institute was $800 and includes all activities, materials, and keynotes associated with the institute, along with breakfast, lunch, and refreshments daily. There was a registration process and up to 120 participants were accepted. The participants also had the

option to earn graduate credit for the 42-hour institute through the university for an additional cost.

Institute Design

The institute was similar in design to a professional conference, but with additional features and flexibility intended to foster community, inquiry, and exploration. Similar to a conference, the institute featured a conference theme, opening reception, daily schedule, expert keynote speakers, breakout sessions focused on thematic strands, and the opportunity for networking. However, unlike a conference, the institute offered a space for collaborating with a peer (dyadic pairs) throughout the week on a common project, a flexible afternoon schedule that responded to the needs of the whole group and individuals, team building exercises (team scavenger hunts, marshmallow challenge, visualization activity), "design studio" time supported by faculty, and a final "gallery walk" to share design studio projects. The six-day institute began on Sunday evening and continues through Friday afternoon. The daily schedule included sessions, workshops, and keynotes, facilitated by faculty, past participants, and invited speakers. An overview of the schedule is presented in Figure 3.1.

Attendees participated in either Tier 1 or Tier 2 programs. Tier 1 participants were new to the institute and therefore explored content related to "how digital tools, texts and technologies require competencies of critical analysis and creative production and the role of inquiry, voice, and choice in creating learning environments" (Director 1 & Director 2, 2016, p. 10). Tier 1 attendees collaborated with a dyad partner throughout the week, creating a project intended for their educational setting. Tier 2 attendees were returning participants in the leadership strand who wanted to extend their learning and consider how to lead and inspire others in the change

process. The Tier 2 group was much smaller in size, and the focus was on leadership development and program change.

<table>
<tr><th>Sunday</th><th>Monday</th><th>Tuesday</th><th>Wednesday</th><th>Thursday</th><th>Friday</th></tr>
<tr><td rowspan="6"></td><td>Introductions</td><td colspan="4">Warm Up</td></tr>
<tr><td>Tier 1 Keynote

Tier 2 Keynote</td><td>Tier 1 Keynote

Tier 2 Keynote</td><td>Group Keynote</td><td>Special Session- Panel and Digital Debate</td><td>Final Design Studio</td></tr>
<tr><td colspan="3">Digging Deeper Session</td><td rowspan="2">Design Studio AM</td><td>Gallery Walk Celebration</td></tr>
<tr><td colspan="2">Teaming Together- Teamwork</td><td>Research Roundtables</td><td>Reflections</td></tr>
<tr><td>Tips & Tools and Amazing Texts</td><td>Tips & Tools and Promising Practices</td><td>Tips & Tools and Un-conference</td><td>Leadership Activity and Promising Practices & Un-conference</td><td rowspan="2"></td></tr>
<tr><td colspan="4">Design Studio</td></tr>
<tr><td>Institute Kickoff Meeting</td><td colspan="4">Wrap-Up</td></tr>
</table>

Figure 3.1. *Institute Schedule Overview*

Standard Operating Procedures of the Institute

Yearly summer institutes follow a general daily schedule. Typically, the institute begins on a Sunday night with a kickoff reception to set the tone for the rest of the week. Then throughout the week, beginning Monday, participants attend daily keynotes, workshops, roundtables, and sessions organized by themes. Tier 1 attends morning sessions meant to develop digital and media literacy background and introduce conceptual frameworks. Tier 2 attends a morning workshop designed to develop leadership capacities. During the afternoon, all Tiers had the opportunity to attend thematic sessions of their choice, focused on Tips and Tools, Amazing Texts, Promising Practices, and Research Roundtables (Table 3.2). At the end of each day, participants have time to work in self-chosen dyad teams to produce a project-based inquiry,

presented on the final day. The 2016 institute followed a similar format to previous years. The daily schedule for that year is in Figure 3.2.

Table 3.2. *Description of Sessions and Workshops*

Title	Description
Tips & Tools and Amazing Texts	Opportunity for participants to see how various tools or digital texts are used in an educational context and discuss implications in the classroom, with time for participants to try out the tools or explore the texts.
Promising Practices	Opportunity for participants to engage in a conversation around digital practices and the inherent issues and challenges.
Research Roundtable	Opportunity for participants to engage in conversations about current research and contribute to new ideas or inform thinking about a particular research area.
Unconference	A flexible option designed around the needs and requests of the current attendees. Also, an opportunity to connect with like-minded individuals on topics of interest. This special session occurs midweek, and the topics are at the request of participants.
Great Debates	Explores different perspectives on digital literacy topics (ex. writing vs. keyboarding; tools vs. content, etc.…)

Monday - Friday

- 8:00-8:30 Breakfast (Optional Focus Groups)
- 8:30-8:45 ~ Daily Warm-Up Activities to build collaboration and teamwork (e.g., Birds of a Feather)
- 9:45-10:00 ~ Looking Up and Out Keynote Presentations and follow-up Q&A
- 10:00-10:45 ~ Digging Deeper Sessions: A deep dive into important topics
- 10:45-11:15 ~ Break
- 11:15-12:00 ~ Teaming Together: Facilitated activities to build understanding across communities
- 12:00-1:00 ~ Lunch
- 1:15-3:00 ~ Afternoon Workshops [Tips & Tools, Amazing Texts, Promising Practices, and Research Roundtables] 10 or more simultaneously running small-group presentations focused on demonstrating a range of digital tools and technologies
- 3:00-3:15 - Exercise Break
- 3:15-4:45 ~ Design Studio: Participants work with others toward creating an innovative instructional plan that incorporates interdisciplinary content and digital literacies prompted by emerging technologies.
- 4:45-5:00 ~ Daily Wrap-Up (Finish at 1PM on Friday)

Figure 3.2. *Institute Daily Schedule Overview*

Methods

Participants

Since my specific background and interest lies in the field of literacy and elementary teacher development, I selected data from elementary teachers who attended the institute in 2016 as the focus for further study. I determined possible participants from the initial survey who identified as K-5th grade classroom teachers and who also met the following criteria: Tier 1

participant, pre- and post-interview data available, pre- and post-survey data available, participants artifacts uploaded, and signed consent to participate in recorded research activities during the institute. Although I initially identified a group of ten elementary teachers, only four met all the criteria. All ten of the elementary teachers who attended the institute in 2016 identified as white and female on the survey. The following table represents available demographic data from the four selected participants, self-reported from the survey (see Table3.3).

Table 3.3. *Demographic Data of Selected Participants*

Participant	Age	Race	Position	Years Teaching	Highest Degree
"Janine"	29	white	Kindergarten	4-6 years	Bachelor's Elementary
"Laura"	40	white	Elementary reading specialist	7-10 years	Master's
"Clara"	37	white	First Grade; Special Ed	10+ years	Bachelor's Elementary
"Natalie"	40	white	Elementary curriculum resource	10+ years	Master's

Data Creation

I was previously invited to participate in research and data collection for this institute during 2016. Therefore, I chose data from 2016 for this study. To address the research questions, I chose from a range of data that highlighted language in use. Because I focused on elementary participants, and because I wanted language data from participants and the institute, I chose from interview data, pre- and post-survey data, daily Flipgrid video reflections, audio recordings from daily sessions and keynotes, conference artifacts (website, communications, handouts), and participant artifacts (reflections and projects). Data represents verbal and written artifacts associated with conceptions and definitions of digital literacy. Table 3.4 includes my research questions and data choices.

Table 3.4. *Overview of Data Choices Aligned to Research Questions*

Research questions	Data choices
1. How do elementary teachers define digital literacy throughout the professional learning institute?	Interviews Survey Participant artifacts
2. What terms and descriptors do elementary teachers use to label and discuss their emerging conceptualizations and instructional practices in digital literacy?	Flipgrid videos Participant artifacts Interviews Survey
3. In the context of professional learning, in what ways do the teachers' language practices align with or diverge from the language practices, texts, and artifacts used by the professional learning provider (e.g., the institute)? What does the relationship between the participants and the institute reveal about acquiring a specialized professional language?	Institute artifacts Institute schedule Institute website Keynotes

Data Sources

This aforementioned data captures the language of the participants and the institute to help shed light on the different aspects that may have promoted or hindered the acquisition of a professional disciplinary language. Additionally, multiple methods of data collection provide the opportunity for me to validate and triangulate the findings (Patton, 2014), while also providing a way to create rich descriptions.

Survey. Each year, the institute sends out a pre- and post-survey to attendees. The pre institute survey is used to discover the participants' baseline conceptions and uses of digital literacy, while the post survey seeks to identify growth during the week and provide faculty with feedback to help develop future institutes. This data point helps me to identify elementary teachers, while also providing insight into how participants initially explained digital literacies and the types of language they used at the onset of the institute (see Appendix A). The survey includes demographic information, self-ratings on specific digital literacy practices, familiarity with digital tools, teacher planning practices, and digital literacy use in the classroom. It includes

open-ended response questions such as asking participants to explain digital literacies and what they hoped to gain from participation at the institute.

Interviews. The interviews are an extension of the surveys and add an additional layer of understanding to the teachers' language use as they described their understanding of digital literacies. I conducted all the interviews as part of the institute, which followed a semi-structured format (Patton, 2014) allowing me to follow unexpected lines of thought and dig deeper into participant responses (Janesick, 2015).

Interviews with each participant took place at the beginning of the institute and at the conclusion, giving me a total of eight interviews. For this initial interview, I composed questions to elicit participants' initial understanding of digital literacies. While I had their initial self-reported definition of digital literacies from the survey, I felt the interview would encourage participants to expand on their thoughts and ideas. The final interview questions resembled the initial questions with additional questions added about the structure of the institute and their overall impression of the institute (see Appendix B). Interviews lasted approximately 30-45 minutes each. I recorded all interviews using an app called VoiceRecord. Recordings were sent to the Dropbox folder for secure storage.

Flipgrid. Flipgrid is an online video-based tool that offers users a way to record and post a video for an audience. At the end of each day, participants were asked to use Flipgrid to record their daily reflections, based on a prompt generated by institute leaders. However, participants had the choice to deviate from the prompt to share their experience. Video responses lasted no more than 3 minutes each.

Participant Artifacts. Participant artifacts included anything created and uploaded to the participant wiki page. During the institute, participants worked in dyad groups (i.e., partnerships)

to create a collaborative inquiry project. Each project was posted on a wiki page along with written explanations of inquiry, video reflection, and digital artifacts. The projects were created within an inquiry framework designed for the institute. Participants also received daily guidance and support from the faculty, morning presentations, workshop sessions, and through the institute wiki page. Participant reflections and projects demonstrated language-in-use, generating additional data of how they understood digital literacies and how they anticipate enacting them in the school.

Institute Artifacts. Institute documents included handouts, the institute wiki, and other institute social media spaces. Including these cultural artifacts will provide additional insight into the structure of the institute, the nature of communication, and the nature of language used to develop digital literacies.

Data Preparation

I sorted and organized data by video files, audio files, and artifacts (website pages, handouts, participant projects, and survey results). From the interviews and video reflections, I transcribed the audio, creating "broad" transcriptions, relevant to the analysis (Davidson, 2009; Gee, 2005). Transcribing was necessary to capture language in a different way but was also a part of the analysis process (Davidson, 2009). The transcriptions included the participants' actual words and any utterances deemed necessary for me to understand the context of the situation or reveal a connection to specific language. I transcribed video files, but I used MAXQDA 2022 as my analysis program where I could concurrently listen to the audio as I coded because of the competing voices on the video, and ambient sounds (VERBI Software, 2021). It made more sense to maintain the integrity of the institute as participants experienced it.

My next step included formatting the remaining artifacts and organizing them into a manageable file system for retrieval and analysis. Patton (2014) recommends a systematic process for organizing and securing data. Therefore, I saved data records in a consistent format and used a systematic labeling system. First, I converted raw data into a common digital format, such as PDF, and saved the data in case files with a labeling system. To avoid data loss, I saved all data on my external laptop hard drive, as well as, in a password protected folder in Dropbox. I kept hard copies of field notes, artifacts, and the researcher journal in a poly file folder for safe transport.

I uploaded data for analysis into the qualitative software program MAXQDA Analytics Pro 2022 (VERBI Software, 2021). I chose this specific software for its flexibility and intuitive platform and because the focus of this study is to examine words and language used to talk about digital literacy. I systematically color-coded words and phrases across data for the content analysis. As I identified the language of digital literacy, I coded according to context, individual participant language, and institute language and then mapped the participants language onto that of the institute. For the discourse analysis, I was able to write and retrieve memos on data as seen in Figure 3.3. Additionally, MAXQDA supports large data sets, in multiple formats (e.g., audio, video, images, text). This allowed me to work between data types fluidly and quickly transition to another location in the data.

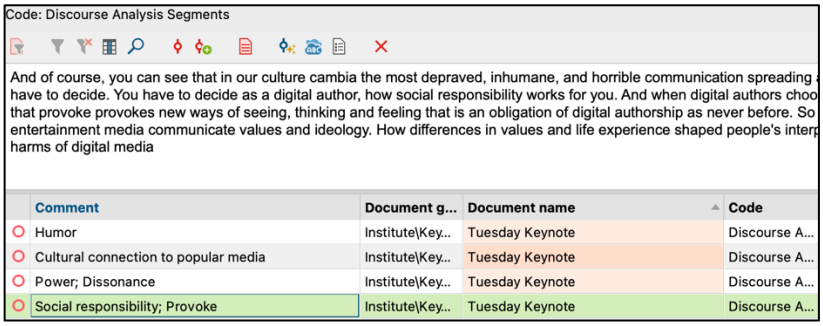

Figure 3.3. *Coding Discourse Analysis Segments in MAXQDA*

Another advantage of MAXQDA is the ability of the software to systematically highlight connections I may have overlooked with a more traditional hand-coding approach. Additionally, there are features to look across and compare key words (such as words associated with digital literacy) and word frequencies (how often particular words associated with digital literacy appeared in keynotes, artifacts, transcripts) as seen in Figure 3.4.

Word	Word length	Frequency	%	Rank	Documents	Documents %	Institute	Participants
digital	7	926	1.90	1	40	85.11	174	752
use	3	926	1.90	1	45	95.74	136	790
think	5	852	1.75	3	43	91.49	196	656
student	7	798	1.64	4	41	87.23	164	634
learn	5	674	1.38	5	45	95.74	191	483
tool	4	609	1.25	6	40	85.11	67	542
create	6	535	1.10	7	40	85.11	117	418
literacy	8	488	1.00	8	42	89.36	87	401
know	4	469	0.96	9	38	80.85	112	357
work	4	434	0.89	10	44	93.62	93	341
question	8	418	0.86	11	36	76.60	155	263
inquiry	7	383	0.79	12	36	76.60	146	237
medium	6	372	0.76	13	31	65.96	73	299
school	6	354	0.73	14	36	76.60	133	221
teacher	7	338	0.69	15	37	78.72	108	230
make	4	315	0.65	16	37	78.72	151	164
technology	10	300	0.62	17	33	70.21	91	209
learner	7	269	0.55	18	29	61.70	38	231
share	5	257	0.53	19	35	74.47	47	210
people	6	251	0.52	20	30	63.83	64	187
time	4	250	0.51	21	32	68.09	57	193
kid	3	240	0.49	22	19	40.43	120	120
read	4	234	0.48	23	35	74.47	51	183
teach	5	232	0.48	24	36	76.60	76	156
idea	4	225	0.46	25	38	80.85	79	146
support	7	214	0.44	26	32	68.09	22	192
classroom	9	211	0.43	27	33	70.21	48	163
project	7	198	0.41	28	31	65.96	59	139
relevant	8	194	0.40	29	19	40.43	12	182
text	4	192	0.39	30	27	57.45	34	158
talk	4	187	0.38	31	28	59.57	77	110
different	9	182	0.37	32	35	74.47	51	131

Figure 3.4. *Word Frequencies in MAXQDA*

Analytic Approach

For this study, I analyzed participants' language, the language espoused by the organization, and the context in which the language was used. To explore and understand participants' language, situated within a bounded context, my interpretation consisted of both a content analysis of language and phrases associated with digital literacy and a discourse analysis of language-in-use and the different social texts within the organization. A blend of approaches highlighted and exposed language and language use in multiple ways. Content analysis was useful to examine and parse out language across texts. While discourse analysis aimed to reveal the underlying meaning of texts and language. For content analysis, I took a systematic approach

of deductive and inductive coding and with discourse analysis I applied analytical tools in the form of questions, adapted from Gee's discourse analysis tools (2011).

The following details my analytic choices, aligned to my research questions and lays out how I analyzed the data to answer the guiding research questions and justify the quality of the research and findings (Patton, 2014).

Analytic Choices

Data analysis occurred throughout the research process, improving the quality of the data collected *and* the analysis (Patton, 2014). The analysis process began early on as I conceptualized the study and collected data and then as I prepared and read through the data. I divided my analysis into multiple phases to ensure I was attending to all aspects of the data, while addressing my research questions. I chose my analytic approaches (i.e., content analysis and discourse analysis) to highlight words and phrases, language in use, language patterns, and context (activities and interactions within the institute) to reveal language shifts as they relate to participants' understanding of digital literacy and the underlying meaning and relationships of texts and language, situated within a specific time and space. Each of my choices and approaches are described next.

Content Analysis. Content analysis is an analytical technique for analyzing, describing, and making inferences from texts (Krippendorf, 2018; White & Marsh, 2006). Although content analysis can be utilized as an objective, systematic, quantitative methodology based in a positivist paradigm, I conducted a qualitative approach focusing on "the characteristics of language as communication with attention to the content or contextual meaning" (Hsieh & Shannon, 2005, p. 1278). Content analysis has been used in the field of literacy to study curricular texts, character representations in literature, teacher and student discourses, student

writing samples, and reading responses to name a few (DeJulio et al., 2020). For my purposes, I used this approach to identify specific language and phrases associated with digital literacy and inspect for patterns, anomalies, and characteristics of the language as it is used at the institute (DeJulio et al., 2020). Analytic strategies included a process of categorizing and comparing the key words and phrases associated with digital literacy. For this study, sampled texts for the content analysis (Krippendorf, 2018) included previously collected data in the form of open-ended survey questions (what is your definition of digital literacy?), interview transcripts (how do they define and discuss digital literacy), participant artifacts (how do they discuss digital literacy), participant Flipgrid reflections (how do they discuss conceptualization of digital literacy daily), institute keynotes (what words and phrases does the institute use to discuss digital literacy), and the institute website (what words and phrases does the institute use to define and describe digital literacy).

Discourse Analysis Tools. Based on Gee's framework of discourse analysis (2005, 2011), I answered questions about what type of language elementary teachers used to describe their conceptions of digital literacy, how they defined digital literacy, what a definition revealed about their understanding of digital literacy and identity related to digital literacy, and how their language and definitions mapped onto the language and definitions of the institute. I chose to employ different analytical and theoretical tools to help complexify the language-in-use and make *new* what is familiar to me, while taking a closer look at how participants are acquiring and using a socially situated professional language and what role the institute has in the acquisition and enactment of their language in a particular context (Gee, 2011). As Gee (2011) states, context is crucial and includes the "physical setting in which the communication takes place and everything in it; the bodies, eye gaze, gestures, and movements of those present; what has

previously been said and done by those involved in the communication; any shared knowledge those involved have, including cultural knowledge" (p. 206).

Since I am intimately familiar with the data and the context of the institute and in order to answer my research questions, I chose particular analytic tools in advance. These "tools" are not digital devices or apps; rather, these are framing questions "to ask of data" to illuminate "language-in-use" that can be adapted and modified to the needs of the study (Gee, 2011). I drew upon two closely related tools, "the fill in tool" as a way to reveal language and context and "the situated meaning tool" as a theoretical tool for examining "different and specific meanings [of words] in different contexts in which they are used and in different specialist domains that recruit them" (p. 154). The fill in tool is useful to "fill in" what is not explicitly stated but needed to achieve clarity and to make inferences about what the participants and institute wanted to say, their intentions, and the goals they had hoped to achieve. While the situated meaning tool recognizes the varied nuances and varieties of words spoken and written in and out of different contexts. For example, the term *digital literacy* may have a general meaning that may change over time, but when those words are put into use and discussed in a specialized or nuanced context, they "take on much more specific meanings". Additionally, new words and phrases (a primary focus of this study) or familiar language that has a different meaning, requires that the listener actively do more work to understand what is meant. With the situated meaning tool, the speaker assumes the listener has related prior knowledge and experiences to understand what is being talked about. In this case, the listeners (the teachers) have knowledge of teaching, pedagogy, curriculum, the elementary context, content, and students.

Next, I describe the coding process and phases of analysis, including both content analysis and discourse analysis.

Coding Process

Coding is an interpretive, linking process, whereby the researcher engages in a cycle of intentionally breaking the data apart and reading and rereading the data for sense making. The first reading of the data was for decoding (Saldaña, 2021) and reorienting myself to the participants and context. During the next readings, I parsed out and coded the words and phrases used by participants and by the institute. I began with an analysis of each individual interview transcripts and survey responses, using an inductive, open-coding method (Saldaña, 2021) to identify language instances and phrases. Multiple readings helped me determine meaningful units and phrases or anomalies, keeping in mind that I categorized a unit or phrase in multiple places depending on how it was interpreted. Coding filters included "In vivo" codes (maintaining participant's language) and descriptive codes. I repeated this process with each new set of data (each participant and the institute).

As I looked across my codes, I searched for prominence in word or phrase patterns or outliers to create categories. Saldaña, (2021) defines a pattern as the researcher's deliberate process of seeking consistency, repetitiveness, or a natural reoccurrence of human actions documented in the data. He cautions to look beyond only similarities in data and consider what Hatch (2002, as cited in Saldaña) characterizes as differences, frequency, sequence, correspondence, and causation.

Multiple rounds of reading, coding, revising, combining, and refining categories led to new categories. I continued until I saturated the data set. At that point, I narrowed and combined categories and classified them. This resulted in categories related to elaboration, word choice, affective concepts, role of tools, expanded view of literacy, and acquiring new understandings of digital literacy.

I applied this process with each participant and with the institute data, creating individual cases to examine deeper and to identify unique occurrences that would not normally be apparent if I grouped the data as a whole. As an example, when I grouped participant data together, the words "create," "engage," and "tools" appeared in pre, during, and post institute interviews and reflections. However, when I parsed out the data individually, I had a more complete view of who chose or omitted those words and how they used them in the context of what they were saying. As an example, Clara used the word "engage" in her initial definitions, indicating technology could *engage students*. She did not use that word again in her reflections or post definitions, opting to discuss digital literacies differently.

Phases of Analysis

I used phases of analysis to ensure efficiency and organization. In phase 1, I conducted a content analysis of the word, phrases, and ideas associated with digital literacy, starting with the four participants, and then moving to the institute data. For phase 2, I look across participant data and institute data to map the participants language and conceptions of digital literacy onto that espoused by the institute. Finally, in phase 3, I drew on discourse analysis techniques (Gee, 2005) and Gee's analytic tools (2011), which involved identifying and describing the organizations and participants' language as a function of social activity and social identity, interpreting texts, and describing the relationships between the language of the participants and the organization. Next, I describe each phase, aligned with the research questions and data.

Phase 1 Content Analysis. How participants define a concept versus how they discuss that content are two different processes. Therefore, I began with the participant-produced definitions first in the open-ended survey data and interviews before reading for the words and

descriptors they used as they discuss their understanding of digital literacy. Table 3.5 provides an overview of the research questions and analytic process.

Table 3.5. *Phase 1 Content Analysis of Participant and Institute Language*

Research questions	**Analytical process**

RQ 1: How do elementary teachers define digital literacies?
● Data:
  ● Interviews
  ● survey (open-ended response- what is digital literacy?)
 	
RQ 2: What terms and descriptors do elementary teachers use to discuss their emerging conceptualizations and instructional practices with digital literacies?
 	
● Data:
  ○ Interviews
  ○ Flipgrid
  ○ Participant project artifacts
 	
What terms and descriptors does the institute use to define and explain digital literacies?
 	
● Data:
  ○ Institute artifacts
  ○ Institute schedule
  ○ Institute website
  ○ Audio recordings of keynotes
	Content analysis:
	● Step 1: What words and descriptors do *participants* use to define digital literacy?
	● Step 2: What words and descriptors do *participants* use to discuss digital literacy?
	● Step 3: What specific words and phrases does the *institute* use to define and talk about digital literacy?

I then read participant survey data where they first define digital literacy. I started by looking at each participant individually and coding their first definition of digital literacy as self-reported on the pre-institute survey, followed by what they stated in the first interview. I repeated this process for each participant, from pre to post. This generated definitions and associated language formed throughout the week (RQ 1) as seen in Figure 3.5.

PRE	POST
Clara	
Definition: Using digital tools such as computers, smartphones, and tablets to enhance curriculum and engage students while meeting the standards. (Clara, Pre-Survey) I think digital literacy is using technology to engage students and enhance teaching. (Clara, Pre-Interview)	**Definition:** The ability to understand, evaluate and interpret information from various digital sources. These sources will allow you to enhance your learning as well as socially network your findings. (Clara, Post-Survey) Digital literacy incorporates many different attributes. Four of which are very important to me: **collaboration**, inquiry, reflection, and digital citizenship. Digital literacy means we need to analyze and evaluate, create, reflect and act (Clara, Video Reflection). Digital Literacy now is the… I think it's the ability to realize that there's just more than just a good, printed text like in a book. And it could be the use of like, articles, or videos, or it could be through social networking or blogging. And I think with that we have to be weary. What we use, is it credible, is it an actual source versus you get a reference from a library. Digital literacy is being able to read and be able to decipher through all the different pieces of text that are out there. (Clara, Post-Interview)

Figure 3.5. *Participant-Produced Definitions Example Pre to Post*

Next, I went back through the interview data, the participant Flipgrid reflections, and participant artifacts, coding for words and phrases used to discuss and describe their emerging conceptualizations of digital literacy (RQ 2) as seen in Figure 3.6.

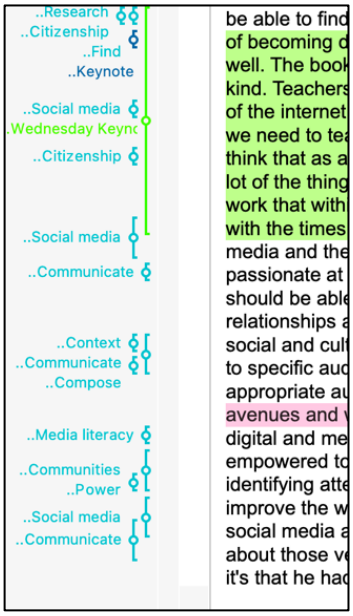

Figure 3.6. *Codes Within Participant Data*

I then applied the same process to the institute's language and coded for specific words, phrases and concepts associated with digital literacy. I started with their glossary of terms, homepage, schedule of activities, and website resource pages. This was to identify the written language, transparent and readily accessible to all participants throughout the institute as seen in Figure 3.7.

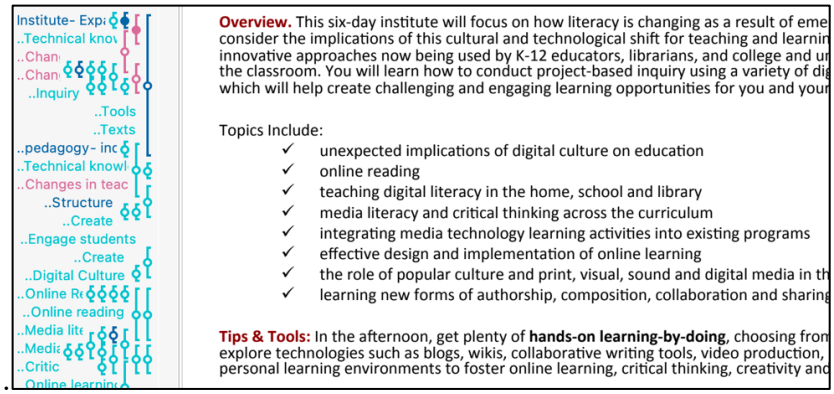

Figure 3.7. *Codes Within Institute Data*

Finally, I listened to the audio recordings of the keynotes starting with Monday (introduction of the institute and frameworks), Tuesday (group keynote), and Wednesday (invited keynote outside of the institute). I then used the transcripts and audio in MAXQDA to code for language (see Figure 3.8). This revealed language and terms associated with digital literacy that might not be used on the institute website, according to the speaker's expertise and focus.

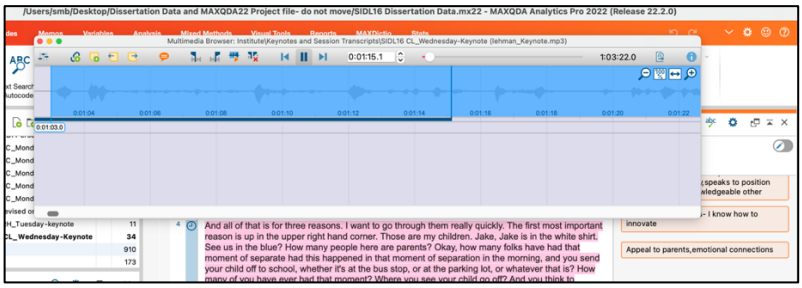

Figure 3.8. *Coding Example of Institute Keynote Speakers*

Phase 2 Mapping Language. In phase 2, I looked at how participant language mapped or aligned with the institute language (see Table 3.6). I reread the coding from phase 1(content analysis of each participant's words and phrases individually and as a whole and the institute's words and phrases) and generated memos in MAXQDA and then used tools within MAXQDA to compare frequencies (see Figure 3.9) and map the participants' language and the institute's

language (see Figure 3.10). Both the frequency table and code map visually displayed relationships of words and phrases. This additional layer of analysis revealed what words and phrases aligned across participants and institute.

Table 3.6. *Phase 2 Mapping of Participant and Institute Data*

Research questions	**Analytical tool** (Questions based on Feller, 2017; Gee, 2011)
RQ 3: In the context of professional learning, in what ways do the teachers' language practices align with or diverge from the language practices, texts, and artifacts used by the professional learning provider (e.g., the institute)? ● Data: ○ Institute keynotes ○ Institute schedule ○ Institute website ○ Audio recordings of keynotes	Mapping tool: ● What language practices map onto that of the institute?

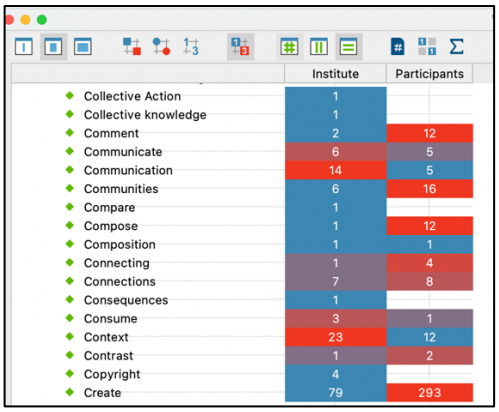

Figure 3.9. *MAXQDA Frequency Table Comparing Institute and Participant Words*

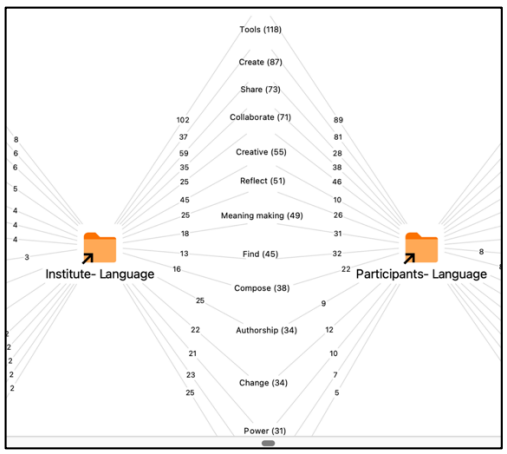

Figure 3.10. *MAXMaps Tool for Comparing Coded Words*

Phase 3 Discourse Analysis. Phase 2 demonstrated there indeed was a relationship between words and phrases used by the institute and the participants, but the relationship between the two needed further examination. For phase 3, I went back through the data and applied the analytical discourse analysis tools to examine how participants were trying to use the language (i.e., fill in tool) and what the relationship was between what participants said and how they used the language of digital literacy (i.e., situated meaning tool) as seen in Table 3.7.

Table 3.7

Phase 3 Discourse Analysis of Participant Data

Research questions	**Analytical process and tools** (Questions based on Gee, 2011)
RQ 3: In the context of professional learning, in what ways do the teachers' language practices align with or diverge from the language practices, texts, and artifacts used by the professional learning provider (e.g., the institute)? • What does the relationship between the participants and the institute reveal about acquiring a specialized professional language?	Fill in tool: • As they define digital literacy, what are they trying to say? As they use and discuss digital literacies, what are they trying to say? Situated Meaning Tool: • How is the context relevant to what is being said or produced? What do the words and phrases mean in this context?

According to Gee (2011), language is more than simply communicating a phrase or definition (saying something), it's about "doing" something and when people use language, they

are trying to achieve a goal or purpose. I adapted Gee's tools to examine the participants' language and phrases (the words they say) and what they do with those words and phrases in that context. For example, with shifts in participant definitions, I started with the first participant and reread the definitions on the survey and then their interviews, applying the questions to sections of the text and writing an interpretive analysis as seen in Table 3.8.

Table 3.8. *Phase 3 Written Interpretative Analysis Example with Fill in Tool*

Participant Definition	**Interpretative Analysis**
Clara Pre-Interview I think digital literacy is using technology to engage students and enhance teaching.	Broad notion of digital literacy that is closer to a definition of technology integration. Clara followed by sharing what type of school she works for and what type of access to technology they have. It's clear she has different tools and has used them with her own students in the classroom. Aside from the equipment, she seems to have some understanding of digital literacies, yet doesn't have additional words or phrases to describe it. This is reinforced in the interview where she talks about students creating digital stories as a form of writing. However, it's clear admin or the district have had an influence on what those tools accomplish- she talks about digital forms of assessment and computer programs for teaching and management.
Clara Post-Interview Digital Literacy now is the… I think it's the ability to realize that there's just more than just a good, printed text like in a book. And it could be the use of like, articles, or videos, or it could be through social networking or blogging. And I think with that we have to be wary. What we use, is it credible, is it an actual source versus you get a reference from a library. Digital literacy is being able to read and be able to decipher through all the different pieces of text that are out there.	She expands the meaning of "texts" and then considers what we need to be able to do as we encounter writing produced and shared online. "Weary" sticks out and is something the other participants didn't use but was similar in tone to being "cautious". She certainly expands on what she originally stated and includes different language to describe digital literacy. She focuses heavily on the media literacies here- She did mention the Tuesday keynote in her interview and reflection.

I also used the phase 2 analysis to determine what words and phrases aligned or overlapped between the institute and the participants. Additionally, I retrieved previous open coding memos where I noted similarities and commonalities. After narrowing in on common language taken up by participants, I wrote an interpretative analysis as seen in Table 3.9.

Table 3.9. *Words and Phrases Interpretative Analysis*

Words and Phrases	Interpretative Analysis
"Everyone learns from everyone"	Everyone learns from everyone is a motto and part of the identity of the institute. The meaning is complex and interconnected to disposition of digital literacy. The phrase is repeated verbally and in written form- it is also reinforced throughout the institute in actions. Even though not every participant used this phrase verbatim, the idea that we each have something to learn from one another (expert and novice; faculty and participant) resonated across participants and each used a version of the idea in their reflections in relation to becoming a digital literacy leader or learner. Laura applied this idea to her own context saying- We put ourselves in our students' shoes as we created a book trailer that would be an example of a student product and together, we worked through the tool and the writing process. Both of these collaborative activities would have been much more time consuming and a lot less rich if we were working through them alone. The work with my dyad reinforced the idea of the institute that, "everyone is learning from everyone" (Laura Reflection).

Trustworthiness

To maintain rigor, I performed each stage of analysis multiple times. Furthermore, to ensure I had an outside perspective and to check for bias, I utilized peer debriefing (Janesick, 2007), sometimes referred to as a critical friend or member checking, during the analysis process (Lincoln & Guba, 1985). Having a space to debrief with colleagues during the process improved the quality of my interpretive process. I met with my colleagues during analysis to discuss a particular language occurrence or to examine a piece of data. Although colleagues or peers are commonly used in action research methodologies where the researcher is deeply involved in each component of the process, in this study, data conversations with colleagues were useful for coding consistency, and having an outside perspective served to validate the process. The colleagues I chose were familiar with digital literacy and had experience with professional development contexts.

Ethics

Per professional research standards, I adhered to ethical guidelines and protocols to ensure participant confidentiality and safety. I completed IRB training and consideration of human subjects through both the University of South Florida and as an associate through the University of Rhode Island. IRB was obtained prior to the institute through the University of

Rhode Island and approved through the IRB process at the University of South Florida and they determined that there was no risk involved for participants. The consent included an explanation of the research, the type of data to be collected, and permission for audio recording. Each participant gave permission to the institute to collect audio, video, and artifact data as part of their participation (See Appendix C). Data were kept in a secure location and no personal identifiers were used on the case reports. Each case report was assigned a unique case number.

Summary

To summarize, the purpose of this qualitative dissertation was to identify and describe elementary teachers' language of digital literacy during a professional learning institute. I investigated the shift in participants' words and phrases throughout the institute and how those aligned with the institute's words, phrases, and activities. The study draws from sociocultural theories to analyze and understand how elementary teachers adopt and use a specialized professional language. In this chapter I explained the context of the study, the selected participants, and how I created the data. I then outlined my methodological process, using two different analytical approaches (content analysis and discourse analysis tools) to answer the research questions. Based on my analyses, I will next present my findings beginning with a content analysis of participant language and institute language, followed by the relationship between the institute and participants and how participants acquired a specialized language of digital literacy.

CHAPTER FOUR: FINDINGS

The purpose of this exploratory, qualitative study was to identify and describe the shift in elementary teachers' language of digital literacy during professional learning. The research questions guiding my study were as follows:

1. How do elementary teachers define digital literacy throughout the professional learning institute?
2. What terms and descriptors do elementary teachers use to label and discuss their emerging conceptualizations and instructional practices in digital literacy?
3. In the context of professional learning, in what ways do the teachers' language practices align with or diverge from the language practices, texts, and artifacts used by the professional learning provider (e.g., the institute)? What does the relationship between the participants and the institute reveal about acquiring a specialized professional language?

As stated in Chapter three, shifts in language and what it reveals, was a primary focus of this dissertation. I used multiple data sources to determine how elementary teachers label and discuss their emerging conceptualizations and instructional practices in digital literacy including survey responses, interviews, daily Flipgrid reflections, and written reflections. Across these data sources, I documented each person's use of specialized vocabulary and phrases. As I read data, I isolated words and phrases based on how the participants referenced or talked about digital literacy or associated practices. I gathered these words, along with corresponding descriptions, into MAXQDA.

In this chapter, I present the findings from the study. First, I describe the participants' definitions from pre to post participation and what a definition indicates about their understanding of digital literacy. Then, I identify and chart the participants' words and phrases associated with conceptualizations and practices in digital literacy, at three intervals during the professional learning experience, looking for additional nuanced language use or comments about digital literacy. I also describe the institute's language use and definitions associated with digital literacy. Finally, I describe the relationship between the participants' shift in language and the design of the institute, revealing the connection between how participants developed conceptions of digital literacy and how they acquired their own specialized way of talking about digital literacy, in the context of this institute.

Decomposing Participant Definitions

In the context of a professional learning experience, definitions serve as a way to capture participants' understanding of the concepts under study. Moreover, definitions function as a common starting point for understanding concepts at a particular moment in time. Therefore, I will start by describing the participants' definitions of digital literacy and what that might reveal about their change in thinking over the course of one week.

Definitions were collected through different means throughout the institute. The institute leaders asked participants to complete an initial survey prior to or upon arrival at the institute. One of the open-ended survey items prompted participants to provide an initial definition of digital literacy (i.e., How would you define digital literacy?). Participants then provided an oral definition during their initial pre-interview as well. At the conclusion of the institute, participants completed a post survey and post interview with their new definitions, both with similar prompts (i.e., How would you define digital literacy now?). In addition, the institute asked participants to

complete a reflection. Each participant reflection included a definition of digital literacy and therefore I included the post reflection definition in my data as well.

Table 4.1 includes data from each participant regarding their definitions. These data represent different communicative channels of thinking (i.e., oral and written language) from pre to post.

Table 4.1. *Participant Definitions from Pre to Post*

PRE	POST
Clara	
Pre-Survey Using digital tools such as computers, smartphones, and tablets to enhance curriculum and engage students while meeting the standards.	**Post-Survey** The ability to understand, evaluate and interpret information from various digital sources. These sources will allow you to enhance your learning as well as socially network your findings.
Pre-Interview I think digital literacy is using technology to engage students and enhance teaching.	**Post-Interview** Digital Literacy now is the… I think it's the ability to realize that there's just more than just a good, printed text like in a book. And it could be the use of like, articles, or videos, or it could be through social networking or blogging. And I think with that we have to be wary. What we use, is it credible, is it an actual source versus you get a reference from a library. Digital literacy is being able to read and be able to decipher through all the different pieces of text that are out there.
	Reflection Digital literacy incorporates many different attributes. Four of which are very important to me: collaboration, inquiry, reflection, and digital citizenship. Also, digital media competencies, these are the things we need to become a digitally literate society. We have to have access. We need to analyze and evaluate, create, reflect, and act. So, all of those together are going to add to what it means to be digitally literate.
Janine	
Pre-Survey I would define digital literacy as using various forms of technology within the classroom to enhance lessons taught.	**Post-Survey** Digital literacy is the ability to use multiple devices to enhance your teaching, knowledge, and skills in a variety of ways. It also allows you to network.
Pre-Interview I'm not entirely sure about digital literacy, but I think it's using technology in the classroom to make learning easier.	**Post-Interview** Digital literacy is the ability to understand good and bad information. This is where we're moving in the 21st century. And it's not going to slow down, you know, it's just gonna keep evolving.
	Reflection “Digital literacy is about more than just adding technology into teaching we already do.” (Hicks & Hawley Turner, 2013). Digital literate people are those who “can use technology strategically to find and evaluate information, connect and collaborate with others, produce and share original content, and use Internet and technology tools to achieve many academic, professional, and personal goals.” (Crowley, 2014). (Janine, Reflection)

Table 4.1. (Continued)

Laura	
Pre-Survey Knowledge related to the use of digital tools.	**Post-Survey** Digital literacy involves teaching students to read, create, analyze, and evaluate digital texts. It also involves teaching students to "read the world" since text includes more than just what is print based.
Pre-Interview I think the idea of digital literacy is relevant and I think it's something that I don't always feel comfortable with, and I don't know a lot about. There's so much out there and there's a lot of things I hear about and know about, but I can't actually use because I've never explored it on my own.	**Post-Interview** I think digital literacy is about supporting kids and being able to use and understand the digital tools that are available to them and to think critically about things that are in the digital world and be thoughtful consumers of that. Also be able to produce things and create things using digital tools.
	Reflection Digital literacy is the knowledge and skills that enable one to use technology in various ways, including to evaluate, collaborate, create, and achieve goals
Natalie	
Pre-Survey Knowing and understanding about a wide variety of digital tools and how to use them to search, create and present ideas and information.	**Post-Survey** Digital Literacy is being able to responsibly integrate digital media into our daily lives at various levels and for various reasons.
Pre-Interview I think that digital literacy, as far as learning to read things online and how to find information and all of this. I just think it's everywhere.	**Post-Interview** I guess, to me, digital literacy is being able to find information, being able to access that information, being able to synthesize that information to my daily life and how I'm going to use that and how I'm going to spread that and share that. Also, being aware, though. I think there's so much information and just being aware of your sources and where you're getting it from. I think it's also becoming digitally responsible….and how are you responsibly contributing and even when they talked about authorship. I don't really think about myself as an author of digital literacy or in that field at all, but I guess I kind of am sometimes and so having to really be aware of that.
	Reflection Digital literacy is about being aware. I am now thinking about my own digital authorship and need to be aware of what I am saying and to whom. “We must consider the balance between protection and empowerment and respond seriously to the genuine risks associated with media and digital technology.” (Hobbs). It is about finding personal balance. It is a balance to utilize technology while staying present and involved with the humans surrounding us.

Below, I present an analysis of changes in the length of definition, the types of words and descriptors used in the definition, and how the participants further described concepts.

Elaboration

Length. Between pre and post institute, there was a visible, surface level difference in the length of the definition (i.e., number of words used to define digital literacy) and through

deliberate elaboration (i.e., explaining what they meant by their definition), particularly with the interview and reflection definitions. I included all parts of speech and cited phrases (i.e., where participants cited someone else to describe digital literacy) in the total word count. Participants used 186 total words to define digital literacy pre-institute as represented in Table 4.2. By post institute, participants used 629 total words to define and describe digital literacy for a total of 443 additional words pre to post as represented in Table 4.3.

Table 4.2. *Number of Words Used Pre-Institute to Define Digital Literacy*

Participants	Pre-Survey	Pre-Interview	Total Pre
Clara	19	13	32
Janine	18	20	38
Laura	8	58	66
Natalie	23	27	50
Total	68	118	186

Table 4.3. *Number of Words Used Post-Institute to Define Digital Literacy*

Participant	Post-Survey	Post-Interview	Post-Reflection	Total Post
Clara	28	98	68	194
Janine	27	34	57	118
Laura	32	53	24	109
Natalie	21	119	74	214
Total	108	304	223	635

The open-ended survey definitions were shorter overall. There was a total of 40 additional words across participants used to define digital literacy from pre to post surveys. All but one participant (i.e., Natalie) increased the number of words used in their definitions. Results are presented in Table 4.4.

Table 4.4. *Total Words in Survey Definitions from Pre to Post*

Participant	Pre-Survey	Post-Survey	Difference
Clara	19	28	+9
Janine	18	27	+9
Laura	8	32	+24
Natalie	23	21	-2
Total	68	108	40

The post-interview definitions were longer and more detailed, apart from Laura who had little change in definition length from pre to post, using five less words to define digital literacy during her post interview; yet she altered the content as described below. Across all participants, a total of 186 additional words were used to define digital literacy pre to post as represented in Table 4.5.

Table 4.5. *Total Words in Interview Definitions from Pre to Post*

Participant	Pre-Interview	Post-Interview	Difference
Clara	13	98	+85
Janine	20	34	+14
Laura	58	53	-5
Natalie	27	119	+92
Total	118	304	186

The written or video-taped reflections varied according to participants and what they wanted to talk about. The final reflection did not include a specific prompt asking participants to explicitly define digital literacy, yet participants still included an explanation of what digital literacy was and what it meant to them while they were writing or recording the reflection.

Natalie and Janine cited other people in their reflection definitions. Natalie supported her statements about the importance of being aware of what you write and post in digital spaces by

adding a quote, “We must consider the balance between protection and empowerment and respond seriously to the genuine risks associated with media and digital technology.” Similarly, Janine also cited specific quotes, but did so in place of providing her own definition, using the following in her definition:

> “Digital literacy is about more than just adding technology into teaching we already do.” (Hicks & Hawley Turner, 2013). Digital literate people are those who “can use technology strategically to find and evaluate information, connect and collaborate with others, produce and share original content, and use Internet and technology tools to achieve many academic, professional, and personal goals.” (Crowley, 2014).

Adding the quotes in the post reflections increased the total words used to define digital literacy. Participants, as a whole, used 223 words to define digital literacy post-institute.

Content. Beyond the increase in the number of words used in the definitions pre to post, participants elaborated on what they meant in their definitions by providing additional information or making deliberate connections to support their statements. In Natalie’s pre-interview definition, she stated, “I think that digital literacy, as far as learning to read things online and how to find information and all of this. I just think it's everywhere” (Natalie, Pre-Interview). She elaborated further on this definition and went beyond “find information” in her post interview to include the following:

> Being able to access that information, being able to synthesize that information to my daily life and how I'm going to use that and how I'm going to spread that and share that. Also, being aware, though. I think there's so much information and just being aware of your sources and where you're getting it from. (Natalie, Post-Interview)

Natalie's definition represents her awareness of the skills and *abilities* needed to navigate a wealth of different "information."

In another example, Clara expanded her definition of "texts" as moving beyond print-based documents. She wrote, texts "could be the use of like, articles, or videos, or it could be through social networking or blogging." Clara further described why educators need to be "wary" when we come across those digital texts adding,

> What we use, is it credible? Is it an actual source? Versus you get a reference from a library. Digital literacy is being able to read and be able to decipher through all the different pieces of text that are out there. (Clara, Post-Interview)

Clara confirms her views about digital literacy in the final reflection definition where she states the four attributes of digital literacy that are important to her, "collaboration, inquiry, reflection, and digital citizenship" (Clara, Post Reflection). Clara explicitly describes and explains each concept throughout her final reflection, providing examples and connections to her school context.

Word Choice and Selection

Elaboration though length and content were apparent, but the participants' word choice provided additional information about what they personally understood about digital literacy. Across definitions submitted through various modes, the language used to describe digital literacy became more precise and specific to the institute context and discipline as the institute progressed.

As seen in Table 4.1 presented earlier, pre-institute, initial definitions were brief, straightforward, and focused on isolated skills and knowledge. The participants defined digital literacy through the objects (i.e., tools, technology, computers, tablets, curriculum, standards), or

as related to the classroom context (i.e., teaching, learning, classroom, standards, curriculum). Laura initially chose a broad definition stating digital literacy was "knowledge related to the use of digital tools" while Natalie, identified a few specific verbs (i.e., search, create, present, read). Clara and Janine's pre-definitions reflected similar patterns. They described digital literacy as using technology or tools to "to engage" students or "to enhance" teaching and learning. In contrast, Laura and Natalie focused on the knowledge of tools and technology.

By the end of the institute, participants selected additional words and descriptors, in different contexts beyond the classroom. Participants' post definitions retained some of the original words and descriptors (e.g., tools, technology, engage, enhance), but then included an expanded list of actionable or dynamic words related to digital and media literacy.

As an example, across Clara's three different definitions, in the survey, she identified digital literacy as a list of skills (e.g., understand, evaluate, and interpret) alongside the detailing of affordances of "digital sources". In the video reflection, she included different "attributes" of digital literacy and then listed skills again with the addition of new verbs (create, reflect, and act). In her final interview response, she focused on texts and the desire for students to become critical readers and thinkers in media spaces.

In Clara's post survey definition, she applied additional language to describe digital literacy beyond "using technology" and her definition included "understand," "evaluate," and "interpret" digital content. In her initial definition, Clara broadly states tools "enhance curriculum and engage students" and in her post, she spoke in broad terms saying "sources" enhance learning. Although there is an apparent shift in language from pre to post, the survey definition is still broad and across both definitions the "tool" or the "sources" enhance the learning.

During the Post Interview, Clara provided another definition of digital literacy this time saying,

> Digital Literacy now is the (pause) I think it's the ability to realize that there's just more than just a good, printed text like in a book. And it could be the use of like, articles, or videos, or it could be through social networking or blogging. And I think with that we have to be wary. What we use, is it credible? Is it an actual source versus you get a reference from a library? Digital literacy is being able to read and be able to decipher through all the different pieces of text that are out there. (Clara, Post-Interview)

Clara clarifies what she meant by "sources". She extends the definition by using words associated with media literacies (i.e., credibility) and how we need to be critical readers and ask ourselves questions as we read texts online.

Clara went on to provide a more detailed definition in her final video reflection (recorded after the post interview) saying, "Digital literacy incorporates many different attributes. Four of which are very important to me: collaboration, inquiry, reflection, and digital citizenship. Digital literacy means we need to analyze and evaluate, create, reflect and act" (Clara, Video Reflection). Here she recorded a screencast with a PowerPoint presentation of concepts and was sharing about what she learned. Interestingly, she describes digital literacy very differently in her post survey response adding the language "analyze," "create," "reflect," and "act" and then stating digital literacy includes the attributes of "collaboration," "inquiry," "reflection," and "digital citizenship." The words indicate a shift in how she is beginning to conceptualize digital literacy in terms of media literacies and as dispositions and actions to consider when incorporating tools.

Laura's definition evolved from the original survey definition including more precise and focused language. She first defined digital literacy as "knowledge related to the use of digital tools" and added a bit during the pre-interview by saying she knows it's "relevant" but couldn't pinpoint the exact reasons why. However, Laura's post definition demonstrates a change in her precise language, identifying cognitive components, the teacher's role, and the necessity of critical participation. She defined digital literacy as,

> … teaching students to read, create, analyze, and evaluate digital texts. It also involves teaching students to "read the world" since text includes more than just what is print based (Laura, post survey).

She elaborated a further during her interview saying,

> …everything you see is text, so I think digital literacy is about supporting kids and being able to use and understand the digital tools that are available to them and to think critically about things that are in the digital world and be thoughtful consumers of that. (Laura, Post Interview).

As documented in her responses, Natalie entered the institute with a more encompassing understanding of digital literacy and included more precise words and phrases in her initial descriptions. During her pre-interview, Natalie broadly described cognitive processes associated with digital literacy. For example, she mentioned digital literacy is "learning to read things online" indicating that extracting meaning from online texts differs from the processes used to access and comprehend print-based texts. Natalie also said digital literacy is "to find information and all of this" and "...it's everywhere" indicating that digital literacies are ubiquitous and there is something more to "using technology."

As the institute progressed, Natalie's word choice and selection shifted towards media literacies and online authorship, using words such as "responsible," "aware," and "balance". She focused on how authors need to responsibly access, share, and contribute content online and what we need to be aware of as we access information from "various" sources.

In contrast to the examples offered above, Janine's definitions were less precise in both the pre and the post, but there was still a noticeable shift in how she spoke about her emerging conceptions. In her initial definitions, she stated she was unsure of what digital literacy was, only to say it was using technology in the classroom to make things "easier" and it had to do with "using various forms of technology within the classroom to enhance lessons taught".

Her post survey definition included, "digital literacy is the ability to use multiple devices to enhance teaching, knowledge, and skills in a variety of ways. It also allows you to network" which is not much different from her initial definition except for a few additional words such as "knowledge," "skills," and "network". However, like Natalie, Janine connected to media literacies in her post-interview definition, offering, "digital literacy is the ability to understand good and bad information" and it will continue to "evolve". The definition she offered in post reflection included precise language but was the result of using a researcher's definition of digital literacy rather than her own.

Although her post survey definition was brief, she extended her original definition of "using technology" to one that was more action oriented and included "teaching, knowledge and skills in a variety of ways". In her post interview, Janine elaborated about the permanence and evolving nature of digital literacy and the need to be a critical consumer of "good and bad" information speaking of media literacies.

Decomposing Participants' Words and Phrases

While definitions are a useful starting point, they only provided a snapshot of participants' thinking. Additional data collected throughout the institute provided a more thorough understanding of the terms, descriptors, and phrases. As the participants' experiences and interactions increased throughout the institute, they gradually began to include more precise labels, terminology, and phrases to describe what they were doing or what they understood to discuss their emerging conceptions of digital literacy skills, knowledge, dispositions, and practices.

A closer examination demonstrates the addition of new and unique words and phrases and a progression of language and therefore new thinking about digital literacy. I have demonstrated this in Table 4.6, a collective overview of participant language, and Table 4.7, an individual view of participant language. Each is described further below.

Table 4.6 demonstrates the shift and evolution of all participants' language throughout the institute. Redundancies were removed within a column, meaning each word or phrase is listed only once even if it was stated by more than one participant. The words and phrases included in each column from pre to post represent words or phrases used in their definitions, reflections, and interviews to describe digital literacy including practices, equipment, dispositions, skills, and abilities. If the word was retained in their vocabulary collectively, it was included each time and bolded. As an example, each participant explicitly used the word "create" while describing or explaining digital literacy.

Table 4.6. *Distinct Terms, Descriptors, and Counts of Combined Participants' Data*

Pre-Institute (15)	During Institute (33)	Post-Institute (45)
Words and Descriptors: Computers **Create** **Engage** Enhance Find information Present Programs Reading online Relevant Search Smartphones Tablets Technology **Tools** "It's everywhere"	**Words and Descriptors:** Analyze Authentic Balance Benefits Code Collaborate Communicate Connect Constraints **Create** Curiosity **Engage** Evaluate Expand Find answers Flip instruction Garageband Incorporate Inquiry based learning Meaningful Motivate Play Purposeful Screencast Share Thinglink Think critically **Tools** Visualize Voki Wondering "Process over product" "Technology is like oxygen"	**Words and Descriptors:** Achieve goals Act Analyze Awareness Collaborate Comprehension Computers Connect Connections Contribute Contribute **Create** Critical consumers Devices Digital authorship Digital citizenship Digital media competencies **Engage** Enhance Evaluate Failure Find Good and bad information Inquire Inquiry driven approach Integrate Interact Internet Interpret Involve students Media messages Networking Problem Solving Produce Read Reflect Reflections Share knowledge Social media Strategic processes Strategic use of tools Synthesize Texts **Tools** "Process is the product" "Read the world" "Technology is like oxygen"

In Table 4.7, I used the same words and phrases in Table 4.6 but parsed out participant language individually over time to demonstrate shifts and word choice within each participant.

Table 4.7. *Distinct Terms, Descriptors, and Phrases of Individual Participants*

Pre	During	Post
Clara		
Computers Engage Enhance Programs Smartphones Tablets Technology Tools	Benefits Collaborate Communicate Constraints Create Engage conversations Motivate Screencastify Share Tools Visualizing	Act Analyze Collaboration Comprehension Computers Connect Connections Critical consumers Decipher Digital Citizen Digital Media Competencies Evaluate Inquiry Internet Interpret Media messages Problem Solving Read Reflect Reflections Social media Socialization Sources Strategies Understand
Janine		
Enhance Technology	Collaborate Incorporate Play Screencastify Tools “Technology is like oxygen”	Achieve goals Collaborate Connect Embrace failure Enhance teaching, knowledge, and skills Evaluate Find Internet Networking Produce Share Strategic Time Good and bad information “More than adding technology into what we do”

Table 4.7. (Continued)

Natalie		
Create Finding information Present Reading online Search Tools "It's everywhere"	Balance Coding Collaborate Create Finding answers Inquiry based learning Thinglink "Not about the technology" "Process over product" "The tool is not at the center"	Audience Awareness Contributing Digital authorship Digital citizenship Find Interpret information Responsibly contribute Responsibly integrate Role Share knowledge Social media Synthesize "Process is the product"
Laura		
Relevant Tools	Analyze Authentic Collaborate Curiosity Ethics Evaluate Flip instruction Inquiry Meaningful Purposeful Safety Screencastify Social Media Think critically Wondering "Beyond engaging and motivating" "Expand boundaries beyond walls" "Make technology like oxygen"	Achieve goals Analyze Collaborate Connect Create Evaluate Inquiry driven approach Interact Read Strategic Tools "Not about learning a specific tool" "Read the world" "Texts are more than print-based"

Table 4.6 and 4.7 represent the evolution of participants' new words and phrases acquired in relation to their experiences throughout the institute. Next, I will discuss these shifts in language and conceptions of digital literacy in relation to affective concepts, the role of tools, expanded views of literacy, conceptions of media literacy and citizenship, and digital literacy as part of inquiry.

Affective Concepts and Developing Dispositions

Participants' evolving definitions not only demonstrated a change in the words and phrases they associated with digital literacy, but also how participants discussed their developing

dispositions of digital literacy, expressed through affective language. Dispositional language refers to habits of behaviors and thinking such as risk-taking, resilience, and creative. Affective statements included how they felt or expressed emotions during the process of learning about digital literacy (e.g., I am happy, scared, uncomfortable, worried).

During Laura's pre-interview, she provided her definition of digital literacy and followed it by saying, it's something "I don't always feel comfortable with, and I don't know a lot about." She further elaborated, "There's so much out there, and there's a lot of things I hear about and know about, but I can't actually use because I've never explored it on my own" (Laura, Pre-interview). She mentioned a foundational understanding of digital literacy, but not feeling as "confident" with when and how to use tools herself, which was one of the primary reasons she wanted to attend the institute. In her post interview, Laura acknowledged she was still confident in her original definition but followed with her growing self-confidence in trying out different tools and websites or engaging in inquiry. In her reflection she wrote, "after learning about screencasting, I decided to experiment more with it, so I created one all on my own" (Laura, Reflection) indicating she felt more confident to take risks and to try something out independently. However, now she mentions lacking "confidence in how to get it all in and manage it in a classroom" and "finding time" (Laura, Post-Interview).

Janine talked in her pre-interview about not being "entirely sure about digital literacy" and what was involved beyond using different tools for teaching and learning. However, she did express some personal dispositions related to trying out something new and being open to change. She mentioned observing peers at her school who avoid new tools and technology and then thinking "I come in and I'm like, "Yes, this cool thing, I want to try this (Janine, Pre-Interview). She continues by saying although willing to try something out, she's unsure of what

is best in the classroom. In her post-interview, she echoed some initial sentiments, but connected with additional personal dispositions useful for considering how and when to use technology saying, “At first, you know, like, you might just try one thing, and it might be successful, or you have to fail before you have all those, you know, successes in digital literacy” (Janine, Post-interview). Like Laura, Janine was willing to take risks with something new even if it failed.

In her reflection, her confidence was expressed in terms of emerging leadership, with the realization that “yes there is a tremendous amount I can learn from these veteran teachers but there is also so much they need to learn from me. I would definitely say one of my biggest strengths in teaching is trying something new and not being afraid of the outcome” (Janine, Reflection). Janine went on to say she was excited to work with other teachers at her school to show them what she had learned and what was possible.

Janine also expressed excitement in learning new ideas herself as demonstrated in her post reflection where she commented on learning how to use Garageband and what that might look like in the classroom. She said, “It was easy for us to create and made me excited to make more. Who knew audio stories could be so much fun!” (Janine, Reflection). She also mentioned how she would take new knowledge back to her classroom to use with vocabulary activities and storytelling and then saying, “I can’t wait to start creating audio stories for my class. (Janine, Reflection).

Like Janine, Natalie also spoke of her growing confidence in her understanding of digital literacy and how it is a natural part of an inquiry approach to teaching and learning. Additionally, she also mentions how failure is a valuable part of the learning process. In her post reflection, she writes how the institute not only reinforced this idea, but also modeled this through their actions. She wrote,

> This [institute] gave me more confidence with the fact that the faculty was always willing and ready to lend a hand to me to solve any glitch I encountered even when the challenge was new to them. They stayed calm and helped solidify the fact that it is okay to struggle, and it is not possible, even as an expert, to know about every single thing media related. They would try things out to problem solve the issue or offer suggestions while asking probing questions. (Natalie, Reflection).

Natalie concludes her reflection by saying, "This sums up where I currently am on this digital literacy journey and reminds me that small steps, starts, and stops are all a part of the process" (Natalie, Reflection).

The Role of Tools: Moving from Tool-Centric to Process-Oriented

Collectively from pre to post institute, participants indicated digital tools and technology were a part of digital literacies and each included a variation of "using digital tools," "incorporating technology," or "using technology" in their definitions and reflections. The words "technology" and "tools" were used interchangeably throughout pre to post (i.e., use of tools; wide variety of tools; using technology; various forms of technology, etc.). Technology and tools seemed to be all-encompassing, nondescript terms or catch-all terms, taking the place of listing out specific hardware, software, or applications.

As the week progressed and with exposure to different ideas and concepts, participants transitioned from tool-centric language towards tools as a supporting piece of the planning process. In other words, they began to adopt a process-centric language.

Tool-Centric Focus. I noticed an initial tool-centric focus whereby participants centered the tools in their discussions, reflections, and definitions. They talked about the tool as if the tool did the work of engaging students or as if it was the central defining element of digital literacy.

Tool-centric language included the participants' references to tools acting on their own or having an impact without other influences and planning. Data from the pre-interview and pre-institute survey indicated participants centered tools and omitted their own instructional influence, suggesting technology was a useful tool for teaching, learning, and student engagement and tools could enhance teaching and learning by making it "easier." In these cases, the teacher was not an active agent.

Both Janine and Clara suggested technology and tools "enhance" learning and "engage" students, but how this occurs or what this involves is vague. During an interview, Clara mentioned the benefits of tools and technology in her classroom and stated it could "trick students into learning" (Clara, Pre-Interview). When prompted further, she described how students were drawn to lessons that involved a technology component. In other words, Clara echoed a common perception that technology extrinsically motivates learning. Clara's use of the words "trick students" implies understanding forms of pedagogical manipulation, but not necessarily how digital tools support learning.

In her pre-interview, Janine mentioned technology could "make learning better" (Janine, Pre-Interview). At a later point in the interview, she said,

> I think [tools] just make it more exciting and the students are more engaged. I think a lot of times they don't realize what they're actually learning or doing when they do it. It's not like, "God, I've got to read this book." It's like, "Oh yeah. I'm going to do it on here and highlight it here." I just think it makes it more exciting and engaging and they want to do it as opposed to, "Oh, you have to do this now. (Janine Pre-Interview)

Similar to Clara, Janine points out the novelty factor and what sounds like "tricking" students into reading because it appears in different formats and includes additional features that add entertainment.

Janine described the tools she had in her classroom, such as iPads, and how she used the Kahoot! app with students saying, "I use it all the time. The kids in my class think it is awesome. I just use it like a review or like an engagement thing" (Janine Pre-Interview). Janine recognized that tools have potential to engage students and noticed how students reacted to the tools. In this example, she did not refer to her role and what else is involved with technology. This was also evident in her other comment about using that same tool when she said, "I have a book and I'll read the story to them and then they can kind of answer some comprehension questions about character or something. I use technology that way" (Janine Pre-Interview).

Natalie initially named the tools she used in the classroom and identified some ways she used those tools. "I have a Smart Board in my classroom, four iPads, seven laptops, and five desktops" (Natalie, Pre-Interview), followed by saying she "pretty much" puts students on the device and lets them learn from the app or software. She went on to say, "we did create some things like voice threads, doing research-based projects; however, I didn't have support with me" (Natalie, Pre-Interview). Natalie stated that she taught a large group of first graders at different developmental levels and implied technology allowed for differentiation.

Process-Centered Approach. As the institute progressed, participants gradually shifted to a process-oriented approach where they began to center pedagogical practices and their role in mediating technology tools. The disciplinary vocabulary corresponded to the participants' descriptions of how to approach a new tool the first time, what to consider when choosing a tool,

and the importance of being intentional about choices. In other words, the teachers acquired vocabulary through their exposure, participation, actions, and reflection with tools.

In fact, participants' language shifted toward describing "strategic" uses of digital tools and social media to "achieve goals." This was evident in the words and descriptors they used alongside the word tool (i.e., meaningful, purposeful, authentic) and how they could foresee students using tools.

Importantly, while the words and descriptors associated with tools changed, the mention of the word "tools" in final definitions and post-reflections diminished. While Laura and Janine still mentioned the use of tools to engage and motivate students, they elaborated and described tools as a way for students to "communicate," "share ideas," "defend thinking," and "expand boundaries beyond walls," while also mentioning the idea of using tools to "flip instruction" to benefit students and change teaching practices.

I documented an increase in the mention of the word "tool" during the middle of the week and a gradual decrease by the end of the week. The increase corresponded to the workshop offerings on the first three days and whole group activities such as the group screencast session. The decrease corresponded to the focus on planning sessions the third and fourth day for the inquiry project. At this point, participants used a framework to scaffold their thinking and planning. Part of the planning process included questions to consider when including tools. The participants moved away from how the "tools" and "technology" enhance teaching and engage students to how the teachers use tools as part of their repertoire. The participants continued to alter their understanding, and in final interviews, they described their role in intentional and strategic planning that includes the use of tools to achieve goals.

By the post interview, participants started to see the role of the tool in a new way. Janine stated digital literacy is "more than adding in technology" and "not about learning a specific tool." Similarly, Clara explicitly stated that there was "something beyond" the use of tools and it was "not [all] about the technology". Although Janine continued to label tools as a necessary part of digital literacy, she alluded to the need for "balance" implying too much focus on only tools positions learning goals as secondary. Natalie also spoke of balance, but focused on the having personal boundaries in place and recognizing the need to look up from screens saying, "it is a balance to utilize tools while staying present and involved with the humans around us… I'm looking for balance between getting it all down and being comfortable putting it all down (Natalie, Reflection). Laura described intentionality, explaining,

> Learning about digital tools in the institute was useful, but I also became aware of how many options and possibilities there are for using tools within instruction. Although I would like to explore digital tools and how they can be used in instruction in more depth, I also want to design instruction that makes technology part of students learning process rather than just something added on to the end of a unit as an afterthought. (Laura, Reflection)

This new language demonstrates captures process-oriented thinking with participants recognizing the affordances and constraints of digital tools and being mindful about what is most important to consider when planning and incorporating tools for learning.

Expanded View of Literacy

Within their final reflections and interviews, all participants made statements about the changing nature of literacy and the expanding forms of texts (i.e., read the world, texts are more

than print-based). Their comments indicated a recognition of an expanded view of literacy as one that moves beyond the traditions of reading and writing reinforced in schools.

As Clara reflected on the institute experiences, she commented on the impact of the initial keynotes and workshops. She stated:

> Today [Wednesday, Day 3] I loved the presentation given by [invited speaker]. And I especially liked the fact that he said that literacy is changing and we as teachers need to change with it. We need to teach kids how to 'read their world' which I thought was very interesting. And the other thing I really liked was that kids need to be more thoughtful, wise, and passionate, and kind in school and we need to build that into our lessons. (Clara, Wednesday Flipgrid)

Clara also discussed digital literacy as part of a literacy classroom. She realized writing happens online through blogs and on social media and how video production is a form of authorship. She then suggested:

> No longer can we teach reading comprehension as separate and distinct from the practices of oral expression writing, composition, and multimedia production. Again, …in order to enhance learning, and our teaching, we need to allow our students to become digitally literate. (Clara, Final Video Reflection)

She goes on to say that literacy has changed and that means being a digital citizen and understanding "how to use the internet and social media effectively". To Clara, "reading their world" means teaching them to work in different texts and in different spaces beyond what we are currently using in classrooms.

Similarly, Laura mentioned in her post reflection her desire to incorporate varied forms of writing beyond what she had done in the past. She proposed, “In the upcoming year I would like to involve my students in blogging about their reading experiences” (Laura Reflection).

In the post interview, she continued talking about writing and composing with digital tools and said,

> There's a difference between "mode" and what was the other word he used? "Media," maybe? But you're using a digital tool, but you're having them write within a certain genre, using that tool. So even when you use a digital tool, you still have to think about the craft techniques of whatever genre you're writing about, and I think that was an important thing to remember. Just because you're using a digital tool doesn't mean kids are just doing whatever. You're still teaching a specific genre, and you're still teaching the craft of writing. (Laura, Post Interview)

Natalie already had a broader view of literacy entering the institute saying, “literacy is just the world around us and becoming aware of it…I think that literacy evolved” (Natalie, Pre-Interview). She elaborated further by naming different literacies,

> I think that literacy is in math. Becoming literate in reading a math equation. I think that it just is in how we communicate, like how we're aware of other people's cultural differences. I just think that literacy is overarching. (Natalie, Pre-Interview)

When prompted about her view of culture and how in her mind that is literacy she said,

> Yeah. It really is, and that's all part of it because without being able to talk about that or see it or read it or even just in pictures, because that's part of literacy too. Reading pictures, like reading math symbols, reading facial expressions. Maybe pushing it a little far, but it is all part of that awareness. (Natalie, Pre-Interview)

Post institute, Natalie added to her original statement and spoke about "social literacy" and how as a "North", a term used within a group dynamics activity, she had to navigate conflict with a peer she was working with and how she began to realize they were coming from two different approaches to collaboration.

Acquiring Media Literacy and Digital Citizenship Language

Media literacy as part of the digital literacy umbrella also came to the forefront post institute. In final definitions, reflections, and interviews, participants used words and phrases to emphasize critical reading (i.e., evaluate, understand good and bad information, interpret information), participation and creating (i.e., audience, role, digital authorship, responsibly contribute), and safety online (i.e., digital citizenship, responsibility).

Clara used "analyze" and "evaluate" in her post definition to describe how we should approach "media messages," and what we do in socially mediated spaces when we read, write, and interact. In her post interview, she elaborated and spoke about being "wary" when we access content online, and what types of questions we should ask ourselves such as "Is it credible? Is it an actual source versus you get a reference from a library" (Clara, Post Interview). Janine also mentioned media literacies in her post definition by simply saying, "digital literacy is the ability to understand good and bad information" (Janine, Post-Interview). She did not further elaborate in her post interview or reflection, however. Laura also spoke about being a thoughtful and critical consumer of media, emphasizing a teacher's role in supporting kids and how to "think critically about things that are in the digital world" (Laura, Post Interview).

Natalie connected the most with media literacies as demonstrated throughout her post data. From pre to post definition she alluded to digital literacy being "everywhere" and using tools to access, read, and produce information online, to then talking about awareness of

different messages in digital spaces, authorship, and acting responsibly. In the post interview, she provided her new definition of digital literacy with examples saying,

> I guess, to me, digital literacy is being able to find information, being able to access that information, being able to synthesize that information to my daily life and how I'm going to use that and how I'm going to spread that and share that. Also, being aware, though. I think there's so much information and just being aware of your sources and where you're getting it from. (Natalie, Post Interview)

Additionally, she shared her hesitations and her newfound awareness of her voice and responsibility on social media spaces stating,

> Right now, on Facebook or Twitter, social media, a blog but it was a personal blog for one of my courses, then I feel as though my voice right now is quiet out in public. Even yesterday, I became Facebook official that I'm going to be [in a new position] and that was a big thing for me because I'm not a big poster. (Natalie, Post Interview)

She continued saying,

> How am I going to post this?" because I'm not a big poster. I feel like what I ... even with Twitter. I feel as though it has to be important with what you're going to say. There are different forums, so I just think it's really having this awareness of what you're saying and who's going to hear it and how they might take it, so yeah. (Natalie, Post Interview)

Participants had exposure to media literacy practices and conversations in workshops and keynotes, which emphasized competencies and dispositions needed when reading, writing, collaborating, and connecting with others in a digital environment. Noticeably, all four participants' post reflections and definitions demonstrated language associated with an increased awareness of media literacies and their roles and responsibilities.

Digital Literacy and Inquiry-Based Thinking

Following the institute, the teachers used words and descriptors in relation to conceptions of digital literacy as inquiry-based thinking. They described "something more" to digital literacy, associating it with inquiry-based learning and fostering students' natural curiosity and wonderings. In Natalie's words, engaging in inquiry drove home the point about the importance of "process" as part of inquiry saying, "I now value the process as the heart of the learning, while the product is the outcome to describe the learning" (Natalie, Post Reflection).

Clara associated an inquiry approach with "student-centered learning" and with projects that were meaningful and useful beyond the classroom. She elaborated, "these are the projects that the kids are going to remember. These are the projects that kids are going to talk about" (Clara, Video Reflection).

Clara also associated inquiry with being "digitally literate." Not only are children "using technology" to explore questions and answers that are meaningful to them, but they are also learning important skills and dispositions by engaging in inquiry that translate to participating in online spaces.

> I want my students to become thinkers and know how to be thinkers and also use their technology to enhance the thinking that they have and to share their projects because of the hard work that they're going to complete while they're doing this. We need to teach kids not subjects. I like that. (Clara, Video Reflection)

Laura also mentioned the role of technology in inquiry,

> I have a greater understanding of how technology can support students in the inquiry process. Through this framework, students engage in the use of digital tools within the inquiry process to collaborate with others, create products to share with others, and

> reflect on their learning. When digital tools are integrated into learning in this way students are involved in building their knowledge about content but increasing their understanding of the ways in which technology can be used to further learning. (Laura, Reflection)

Likewise, Natalie made the connection that digital tools could support the inquiry process in different ways saying,

> Okay, so I think that it opened my eyes and my mind to student inquiry, using digital literacy to support it. And I think that it really supports the foundational and really just good pedagogy of what you know, but then how to use that in a digital way. How to use tools to support those underlying, but most important ideas and thoughts and what it's all about, and just different options. I think it really opens you up to options and possibilities. (Natalie, Post Interview)

Engaging in an inquiry unit not only provided participants with a different way to conceptualize an approach to teaching and learning, but it also gave participants new words to conceptualize digital literacy and literate practices.

Decomposing Institute Language and Design

Decomposing aspects of the institute's language provided additional information on how participants acquired their specialized language and the relationship between the participants' evolving language and the institute's structure, practices, and activities. How and what the institute communicated, impacted what participants understood about digital literacy.

Similar to the approach I took with decomposing participants' definitions and language, here I do the same looking first at different definitions found across institute artifacts and then looking closer at the language used across the institute to describe and reinforce digital literacy

practices, dispositions, and pedagogies. I examined language presented or accessible to all Tier 1 attendees. Therefore, in this section, I included institute and faculty definitions, the three primary keynotes, and institute artifacts.

Institute and Faculty Definitions of Digital Literacies

Current definitions and conceptions of digital literacy exist at the intersection of technology (i.e., basic operation, productivity, technology use broadly, tools specifically, etc.) and literacy (i.e., read, write, and communicate from multiple sources), across social and cognitive domains. At the institute, definitions of digital literacy were explicitly shared on institute websites, and further discussed and reinforced through a combination of teaching discourse and activities.

Institute Website Definitions. Prior to arriving at the institute, participants had access to associated definitions and terminology under the umbrella term "digital literacy." The institute leaders used a wiki page as a management space for all the content, and it contained foundational definitions of digital literacy and media literacy. The definitions were found on the glossary page and in the language of the Digital and Media Literacy Framework (See Table 4.8). The definitions served as a foundation and common language that the teachers could build from or refer to during and after the institute. The definitions emphasized a broader conceptualization of technology and literacy and what processes might take place at the intersection of those two concepts, such as "communicate using a wide range of forms".

Table 4.8. *Institute Wiki Page Digital Literacy Definitions*

Wiki Page Digital Literacy Definitions
Digital Literacy is the ability to use information and communication technologies to find, evaluate, create, and communicate information, requiring both cognitive and technical skills (Wiki page Common Vocabulary Glossary)
Media Literacy is the ability to access, analyze, evaluate, and communicate using a wide range of forms, including print, sound, images, and digital media. (Wiki page Common Vocabulary Glossary)
Digital and Media Literacy is an expanded conceptualization of literacy that includes attention to how we use, consume, and create messages in many forms. It emphasizes the practices of reflection and action in order to put "new literacy" practices in a larger social and political context. (Digital and Media Literacy Framework)

Faculty Definitions. The kickoff event on Sunday night demonstrated the plurality of definitions presented by faculty. The introductory "What's your flavor?" activity problematized using a single definition of digital literacy and acknowledged the diversity of thinking by asking faculty to share what digital literacy means to them. Faculty started with their area of education or expertise, followed by their current definition of digital literacy (Table 4.9). Their definitions were deeply connected to their unique understandings, disciplinary backgrounds, and research areas. Although diverse in how they spoke about what was important or what digital literacy meant to them, the definitions also demonstrated the way in which teaching, and learning encompassed something beyond "using technology and tools." The technological competencies are necessary, and the tools are important, but they are a means to help students achieve academic and personal goals. One faculty member talked about digital literacy as "connected learning" because of the ability to make authentic teaching connections beyond the classroom. Another talked about digital literacy as the power of connectedness and the ability to bring "people together" through different modes of expression. Another discussed digital citizenship and necessary social skills and behaviors online. Others mentioned online reading skills and competencies needed to skillfully locate, analyze, and synthesize information and understanding different forms of writing and media messages. Finally, the final definition begins with "So, I

will choose Media literacy as it's not being represented fully yet," reinforcing the diversity complexity of the umbrella term. Faculty clearly embraced and respected the range of definitions of digital literacy, sending a message to participants to discover their own definitions during the week.

Table 4.9. *Faculty Digital Literacy Definitions from Sunday Kickoff Event*

What's Your Flavor? Round Robin Digital Literacy Faculty Definitions
Reading, reading people, reading texts, reading situations. And so, me, I'm an online reading and new literacies kind of person. I talk about online reading and the new reading and writing and communicating strategies to use the internet. And in a nutshell, that would be the ability to use the internet to ask interesting questions, locate information, evaluate the quality of that information for relevancy, and validity, and bias and perspective, being able to synthesize that information in lots of different modes and mediums, and then being able to make a decision about how you're going to communicate out what you will have comprehended and learned for a new audience.
I love this idea of all of the different languages that come along with media, and media production and media creation. How are we teaching kids to navigate all of these different languages? Like what does it really mean for a computer, to speak to something to make it do something? And what does that mean for you as a child? And what does that mean for our future in general? So, the big thing having to do with nerdy stuff, teaching about teaching with that idea of literacies, to me is still so important.
I think learning is most important to me. Using digital literacies is to make connection to the real world, because I believe that all my teaching makes connections to the real world, my students, and this gives them, you know, current and modern modalities and the ability to reach different audiences or thinking differently and make those connections. So digital literacy to me is about connected learning.
So, I have to say that information literacy is most important to me. And I love that people are inspired by the inquiry model, because everything it says is pretty much what information literacy is to locate, access, evaluate, analyze, synthesize, and even reflect on your information in the product you make.
So digital citizenship speaks to me, because in elementary school, we're often practicing many different types of science practices. And one of them is skilled argumentation. And I find that we need to practice the art of evaluating and sharing resources and information without disrespecting other people's opinions. So right now, that's what's in my head.
Digital Literacy brings people together and lets people express themselves in better ways. And I see that's the real power of this.
So, I will choose Media literacy as it's not being represented fully yet. I think being media literate is so important in our society. So, we have this information literacy where we have information coming at us from so many different directions, different platforms, we've got print, non-print, we got all these electronic versions of information. We've got information that we're sending out right now. And being able to take all those sources of information, being media literate, being able to evaluate use those resources and trying to say how can I take all of this information input and sort it into something that's meaningful, synthesize it and not just absorb the information but be a creator of information, so that we can share our collective knowledge learn from and with each other and be powerful learners together.

Keynote Definitions. The Monday keynote connected to the previous night's kickoff activity and started with definitions of digital literacy to help everyone "find their place" (Table 4.10). The speaker highlighted both differences and commonalities stating, "… often what happens is when you start talking, you find out your ideas are similar, but you just have different labels for the things that you're talking about" (Monday keynote). Participants were then asked to

turn and talk about their work context, what “at this point” digital literacy meant to them, and any evident similarities or the differences. The message once again, definitions are connected or overlap, and they are dependent on backgrounds, experience, exposure, and current thinking. This set the stage for the rest of the week, reinforcing participants’ starting definitions and further indicating there would be something to learn during the week that would help them begin to form or extend their own definition of digital literacy. Starting with this connection and asking participants to discuss and discover what others believe, brings awareness to their own thinking.

Table 4.10. *Monday Morning Keynote*

Monday Keynote Definition
[Digital literacy] means having the skills and the strategies and the dispositions or mindset to use the internet. I'm particularly interested in using information that's on the internet in productive ways, so that you can generate useful questions to solve problems. Use the internet to locate information, critically evaluate the quality of that information to relevance and validity, both the information and the quality of the source and that person's or that group's area of expertise, as well as the bias and positions that come into play. There's a whole lot wrapped up in that critical evaluation, how to synthesize information that's in multiple modes and multiple formats and multiple levels of validity perhaps, and then how to determine the best way to communicate solutions to those questions that you've had to particular audiences, with technology.
Michael Eisenberg for the librarians in the group and others might be familiar with Eisenberg's version of kind of an information literacy kind of a model.
[Belshaw] is actually doing quite a bit of work about all these elements of digital literacy, whether they're cultural or cognitive, or creative, or critical, or civic.
And [Wednesday keynote], …talks about it a little bit more broadly, to be digitally literate is to be a civic minded citizen able to generate their own questions, be able to listen in order to understand what someone is saying, being able to actively co-create their learning community critically and analyze and reflect on their practices.

Words and Phrases Across Institute

Definitions are useful to understand how different people might understand and therefore define digital literacy and what is meaningful to them in that moment and time. However, there is also language used across the institute in artifacts and during activities that reveal words and phrases associated with digital literacy practices, teaching, and learning practices, digital literacy dispositions, and hardware and software associated with digital literacy. In Table 4.11, I’ve arranged those words and phrases associated with conceptions of digital literacy alphabetically to

demonstrate the breadth and depth of language associated with digital literacy, but also to demonstrate the similarities and differences between various speakers and artifacts.

The keynotes and institute artifacts included a combination of precise, specialized language, less precise, informal language, and figurative language used to discuss and describe digital literacy and practices. I chose data from any artifact or activity that was available to or attended by all participants. For example, the institute artifacts included the website, email blast, marketing video, and supplemental materials while the highlighted institute keynotes included three keynotes presented on Monday, Tuesday, and Wednesday morning, attended by all participants. The following is a description of the types of words and phrases included and the context those words were produced.

I examined each keynote further to identify additional words and phrases associated with the digital literacy skills, competencies, and practices that would not have appeared in the word clouds. For example, I noticed exact language such as "create" and "collaborate," which were words used to describe what is possible with digital tools, and "wonder" connected to students having a natural curiosity about the world. There were additional similar words and descriptors across all presentations, aligned to the same goal or purpose. These included words associated with an inquiry such as "ask questions," "generate questions," "discover," "project-based learning," "minds-on," "curiosity," and "authentic". Becoming critical participants in digital spaces was a common idea. However, the language varied and included "digital citizens," "civic engagement," "21st-century citizenry," "digital authorship," and "social responsibility," to name a few. Looking across words and phrases demonstrates coherence within the institute but also reveals the complexity and changing nature of digital literacy.

Table 4.11. *Institute's Words and Descriptors*

Institute Artifacts	**Highlighted Institute Keynotes**		
Actively engaged Amazing texts Analyze Authentic Learning Authorship Blogs Civic Engagement Collaborate **Collaboration** Collaborative Writing tools Collective Action Composition Connecting **Create** Creating media Creativity Critical thinking Digital culture Digital inquiry Digital media Digital resources Digital texts Digital tools Discover Discuss Engage Engagement Experiment Explore Explore technologies Find Finding media Flipgrid Hands-on iPads Informational websites Inquiry practices Integrating Media Technology Media literacy Minds-on Multimedia Networked Digital Citizens Online reading Online learning Personal learning Play Project-based inquiry Promising practices Reflect Research Sharing Social media Take-action Technologies Tools Twitter Using media Video production Wikis **Wonder** "Everyone learns from everyone" "The process is the product"	**Personal Digital Inquiry Keynote:** Access Acting ethically Active engagement Analyze Ask questions Authentic opportunities Brainstorming Choice Cognitive engagement Collaborate Collaborating **Collaboration** Collaborative practices Compare Composition Connections Consequences Contrast **Create** Creative design Creative practices Critical questions Culture of inquiry Curiosity Deep understanding Developing Digital creation Digital product Digital texts Digital tools Discover Discuss Engaged learners Engagement with others Enhance learning Evaluate messages Finding information Generate questions Impact Inquiry Integrity Intentional choices Interpretive process Knowledge building Knowledge expression Listening and reading comprehension Meaning making Media messages Multimedia Participate Personal action Personal learning Personal wonderings Point of view Problem-solving Productive collaboration Purposeful choices Purposeful technology Real life Recognizing purpose Reflect Responsible citizen Responsible communicator Risk-taking Share Socially constructed meaning Student agency Student directed learning Take-action Teaching with technology Technologies Think critically Understanding information Using information Voice **Wonder**	**Digital Authorship Keynote:** Access Act Analyze Animation Authorship responsibility Bias Brainstorm ideas Change agent Cloud computing Code **Collaboration** Collaborative Comment Communication Compare Compose Contrast Copyright **Create** Creative process Critical thinking Critically analyzing messages Cultivation Culture Curate Digital annotation Digital authors Digital citizen Digital culture Digital space Economic context Entertainment media Equity Ethical judgment Ethics Evaluate credibility Evaluate quality Experimentation Expression File management Generating ideas Genre Hardware Hyperlinking Imitation Information needs Information overload Intellectual freedom Interpretation Keyboard skills Knowledge management Legal rights Listening comprehension Media messages Messy engagement Mouse skills Multimedia Participation Point of view Political context Power relationships Priming Problem-solve Propaganda Purpose Reading comprehension Reflect Remix Representation Rework Risk taking Screencasting Search and find Self-expression Social media Social power Social ramifications Social responsibility Software Storage Stories Troubleshoot Video production **Wonder** World view	**Invited Keynote:** 21st century 21st century citizenry Adapt Affordances Ask questions Authentic "Beyond walls" Change Changing pedagogy Citizen Co-create **Collaboration** Communities Consume **Create** Create innovations Create things Do things Empower Identity Innovate Innovation Inquiry Integrated Invisible Learn, unlearn, relearn Make things Meaningful education Minds-on Necessary Network New literacy Personalized learning Project-based learning Relevant education Responsibility Seek information Student-centered Stuff Texts Texting Transformative Twitter Ubiquitous Voice **Wonder** YouTube "Technology is like oxygen"

I noticed specific differences in the specificity of language as I examined each keynote message and language independently. For example, the Monday and Tuesday keynote speakers delivered specific content and information using precise, specialized language throughout their talk. This language was congruent with the language found on the main wiki page, flyers, email, and video promotion. This language also indicates that digitally literate people are critical users and producers in digital spaces. This includes using various tools to develop new approaches to teaching and learning and using technologies strategically and purposefully. I expected to see this since it was a digital literacy institute, but it also conveyed that there is more to digital literacy.

The Wednesday keynote speaker did not have the same specificity and clarity of the other two keynotes and primarily relied on casual language, catchphrases, and everyday words to communicate his message about the types of schools we need. Additionally, he used figurative language (e.g., technology is like oxygen), buzzwords (e.g., 21st century, transformative), and emotive language and phrases (e.g., so if you are not willing to be transformed by this amazing life that we get to interact with every single day. You're doing it wrong) to persuade, motivate or provoke a reaction from the audience. Although the other keynotes may have used similar language moves and devices, they were more frequent throughout the Wednesday keynote.

The keynote started with a brief introduction, followed by, "I believe in this idea of sort of new literacy" (Wednesday Keynote) and continues with why he likes to "talk about this stuff." The introduction included informal words "sort of" and "stuff" to enter a broader conversation related to digital literacies and to send the audience a message that he was relatable. The remainder of the keynote was a series of vignettes to describe the kinds of schools and practices

needed to create 21-century citizens and the role of technology. Again, words and phrases related to digital literacy were included within the context of the stories.

In one vignette, he used a metaphor to describe how "schools can be permeable membranes," undefined by physical space, inviting others to join in on the learning or conversation. He follows this with an example of what he means, describing how students used a video call to meet with a state official to answer questions about the use of taxpayer money. He explained,

> And the cool thing was like, so this is where like, I got the greatest job in the world, I got to sit in the room and listen to our kids grill the snot out of the Deputy Mayor of Dallas, Texas, about this project. And at the end of it, you know, the kids were super respectful, but they wanted to know the actual use of taxpayer dollars. What was the reason to do this?... At the end of it, the deputy mayor said, you know if Dallas had journalists that took their jobs as seriously as your students, we'd have a better city. That's what we mean by learning from many. That's what it means to bring the world in your classroom." (Wednesday Keynote, Pos. 26)

In the example, he used colloquial, conversational expressions (e.g., cool thing, grill the snot) with other words and phrases indicating the skills and capacities needed to engage with others beyond the classroom (e.g., learn from many, bring the world in). His story was meant to emphasize the ability of technology to grant access to other spaces or reach geographic locations beyond a physical building. It also communicated what skills students gain working with and learning from others physically and digitally, such as communication, critical thinking, and argumentation. He focused on dispositions rather than on specific actions and tool use. The story shows how technology can be used in a classroom setting. However, the story and follow-up

message lack concise words and phrases connected to digital literacies. In this instance, they are assumed rather than explicitly stated. Moreover, the vignette appeared self-promoting or self-congratulatory with statements such as "I got the greatest job in the world, I got to sit in the room and listen to our kids grill the snot out of the Deputy Mayor of Dallas…" along with, "… you know if Dallas had journalists that took their jobs as seriously as your students, we'd have a better city". Although a single example, the other vignettes are comparable and send a similar message.

Other language moves included educational catchphrases, buzzwords, and figurative language used to gain a reaction or draw more attention to an example or statement. The educational buzzwords listed in the keynote were common in education materials or calls to action when data were collected. They included "21st Century," "minds-on," "ubiquitous," "transformative," "personalized learning," and "project-based learning". Catchphrases included "[I am] trying to be the person my kids think I am," "preparation for life," or an original catchphrase, "technology is like oxygen" in the form of a simile. The phrases placed throughout the keynote helped the speaker connect with the audience, who were likely familiar with the language. However, the intent was also to provoke a response, evident in the audible gasps, laughs, and silences in the audio.

Some of these buzzwords are emotionally laden. As an example, the speaker used the word "transformative", a word akin to life-changing possibilities, at the end of the presentation to underscore the potential of innovations saying, "Technologies are not additive. They are transformative." (Wednesday Keynote). He further explains we need to transform schools, children, and teachers and if "you aren't willing to be transformed… you are doing it wrong". Within the keynote, the word is used as a call to action for what children need. He also used the

catchphrase "…technology is like oxygen, ubiquitous, necessary, and invisible" (Wednesday Keynote) twice to stress to the audience the need to stop talking about technology because it is "everywhere" and the point is the "work", not the tool.

The language moves, paired with casual language, sends a message "I am like you. We speak the same language". If this were the only keynote, it would be difficult to deduce a precise or more nuanced understanding of digital literacy.

Visualizing the Data

In addition to a line-by-line analysis of data, I used the MAXQDA word cloud tool to represent the rank and frequency of keywords within each keynote and the institute artifacts to visually demonstrate the central message of the institute and each keynote individually. I also applied the word cloud to the faculty definitions (see Figure 4.X) and generated the most prominent key terms stated in the definitions (see Figure 4.X). As shown in the figure, the word "information" is most prominent, appearing more than twenty times.

Figure 4.1. *MAXQDA Word Cloud of all Faculty Definitions*

With the other examples, I removed conjunctions, articles, and numerals and used the top 30 words. The most frequent words appear more prominent. For example, "learn(ing), digital, literacy, media, inquiry" are the five most frequent words found across institute artifacts (i.e., wiki, email blast, promotional video). The top five words of the Monday keynote were "students, question(s), think(ing), inquiry, learn(ing)". The top five words of the Tuesday keynote were "media, people, video, think, and creative." Lastly, the top five most frequent words from the Wednesday keynote were "kids, know, think, teach, schools".

The most frequent words in each word cloud align with (1) the institute purpose (i.e., learning about digital literacy) and (2) each keynote focus. However, there was a distinct difference between how words and phrases were used to communicate the topic or focus related to digital literacy. The first two keynotes included more specialized and precise language, while the Wednesday keynote included general common words related to education and teaching. The most prominent words spoken during the Wednesday keynote could apply to any educational presentation.

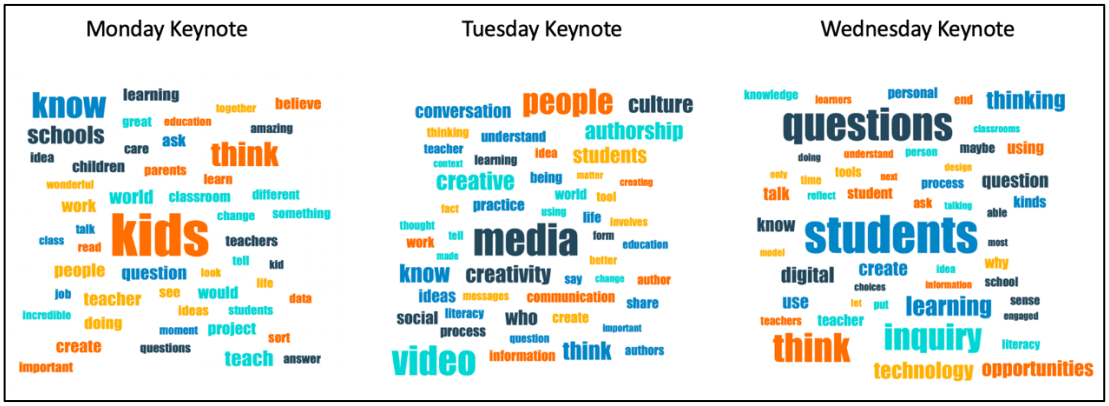

Figure 4.2. *Word Clouds of Each Keynote Across the Week*

Relationship Between the Institute and Participants' Language

The institute's identity and the associated facilitators, speakers, signature activities, workshops, and keynotes were an integral aspect of how participants acquired and used a new

language to conceptualize and discuss digital literacies. There is an alignment between the words and phrases used by the institute and the language used by the participants during the week. This included reproducing language and phrases or combining words and phrases in a new way to describe their thinking and practices.

Participants heard the language of the institute as they navigated the different spaces and faculty served as facilitators, coaches, and support throughout each experience, reinforcing and modeling different ways to work with and think about digital literacy. I also noticed across participant reflections, definitions, and interviews, language connected to the faculty or speakers they mention in the interviews and reflections. Each participant had a unique take-away and definition based on what resonated with them across the institute, who they partnered with during the institute, what workshops they chose to attend, and who they found influential in their thinking. All four participants made specific comments in their reflections, surveys, and interviews about specific workshop facilitators, speakers, design features, and signature activities that stood out to them or had an impact on their learning and understanding. Additionally, they used the language from these various activities to explain digital literacy practices and dispositions.

Through a qualitative content analysis of both the participants and institute's definitions and language, I was able to identify and clarify what type of language participants heard and what language was taken up as part of their specialized language. Additionally, I applied the discourse analysis tools (Gee, 2011) to data as I analyzed the participants' language and definitions in the context of what was said. According to Gee, understanding the social and cultural context in which language is used is essential for understanding its meaning. Specifically, I asked myself, "what is the relationship between what the participants said and

what the institute said?", "what are their intentions, goals, or purposes for saying it?" and "how is the context relevant to what is being said or produced?" In this section, I will point out what institute words and phrases were reproduced by participants, how faculty and speakers were influential on what participants said, and how the design of the institute and the activities were relevant to the language participants reproduced.

Reproducing Words and Phrases

Participants borrowed and reproduced language they heard throughout the institute in their final reflections, definitions, and interviews. Reproduced language was heard frequently throughout the institute in different contexts and activities and was therefore more likely to be taken up by participants (i.e., the more participants heard something, the more likely they were to use it themselves).

The most common words reproduced and used across the institute and participants included "create" and "collaborate". These two words in particular are an important part of the institute and the overall goal and mission. The two words are also used together forming "creative collaboration" to emphasize the relationship between individuals in pursuit of a common goal to create or design something new.

The word "create" appears over 300 times across documents and was used to talk about digital skills and abilities, possibilities of digital tools, and digital outcomes. "Create" appears in the institute definitions on the wiki page, in one faculty definition, and is mentioned in every keynote. "Create" as an action is used in definitions to describe what people can produce with technology (e.g., media, messages). The word "create" was also used to reference what teachers need to do to successfully engage students in authentic learning with digital technologies such as

"create space," "create opportunities," and "create structures". "Creative" was used to describe students when they are given access to appropriate tools, opportunities, and space to be creative.

Clara, Janine, and Laura all added the word "create" in their post definitions; a word not included in their initial definitions. The word was *listed* amongst other words used to describe digital literacy. As an example, Laura provided a post definition using the word "create" saying, "digital literacy is the knowledge and skills that enable one to use technology in various ways, including to evaluate, collaborate, create, and achieve goals". Natalie however used the word "create" in her initial definition (e.g., "Knowing and understanding about a wide variety of digital tools and how to use them to search, create and present ideas and information") but did not include the word in her final definition.

"Collaborate" and "collaboration" appear over 100 times throughout participant and institute documents and were used in reference to actions and skills. Collaboration is an important grounding concept at the institute and connected to the institute phrase heard almost daily "everyone learns from everyone", but it is also an important skill that is reinforced in the signature activities and institute design. Surprisingly, "Collaborate" does not appear in any of the institute definitions or in the Sunday Faculty definitions, but it does appear through keynotes to describe what students need to be able to do with and without communication technologies and the affordances associated with working with others to achieve goals.

As examples, the Monday keynote discusses collaboration as a part of inquiry and something that can be developed without the use of technology and later applied when using technology or when engaging with communication technologies. The speaker explains, collaboration "…to me involves time for face-to-face talk. And often that happens before you use technology, while you're using technology, and after using it" (Monday Keynote). The

Tuesday keynote speaker discussed collaboration as a part of authorship, suggesting it is both a solo and collaborative activity then further described how "…collaborative work may involve the practices of commenting, curating and remixing" in digital spaces (Tuesday Keynote). The Wednesday keynote speaker also discussed collaboration as an important skill for connected citizens, further describing collaboration as "synthesis" or how ideas come together for "true idea change".

Janine, Laura, and Clara all list "collaborate" in their post definitions to describe an important digital literacy skill. Clara especially found collaboration important and used the words "collaborate", "collaboration", and "collaborating" more than 18 times in her reflection. She elaborated on the importance of "collaboration" and how the institute modeled and designed collaboration situations. She clarified "…the experiences with creative collaboration helps build confidence in digital literacy. And I think just the back and forth working with my partner, and the other people in the institute allowed me to have a little more competence" (Clara Reflection). This was echoed by Natalie in her reflection as well as she talked about the importance of having "creative collaborations". I should mention, both Natalie and Clara read and cited an article by the co-directors that discussed the term "creative collaboration" and how the design feature helps build confidence in digital literacy.

Participants also chose to use "purpose" and "intention" when speaking about teaching practices and the inclusion of digital tools. These two words were reinforced by the institute when planning and considering what to bring into classroom spaces. Throughout the PDI Framework and faculty keynotes, the words "purposeful" or "intentional" use of technology appeared. As an example, the PDI inquiry project description and template include prompts that

state “purposes of technology for teaching and learning” and using the planning guide “can help you make intentional choices about technology use” (PDI Framework).

This was further reinforced in Monday’s keynote presentation on digital inquiry. The speaker asked attendees to consider what they might tell the person next to them about the coolest tool they have seen. She offers a scenario of what they might say starting with, “We talked about this really cool tool. And let me tell you how I could use that in my classroom. We’ve got to find a way to connect that to what I'm teaching. Wouldn't that be cool?” (Monday Keynote). She then transitioned into recognizing who the focus is (i.e., teacher versus student) and thinking more purposefully about learning goals and how they might talk about tools offering,

> How are we going to create those opportunities for students to be actively engaged and the things we think are important with that tool? And then we start to think about very intentional purposes, for using a particular technology. Not just because it's cool, and you learned about it, and it's free. But because it actually makes sense for the purposes that you want to do in your classroom. (Monday Keynote)

Participants reproduced this same language in their reflection as an important consideration when planning lessons or choosing appropriate tools. This was something largely absent from the pre-interview data, but prevalent during the post interviews and reflections. Laura stated, “Digital tools can be engaging and motivating for students, but the reasons we use those tools should extend beyond that. The ways in which I use digital tools to support learning should be meaningful, purposeful, and authentic” (Laura, Flipgrid). Laura also reflected about students learning how to be purposeful. She said,

> As I learn more about digital tools and use them with my students, I want students to think about them as options for the medium they use. The learning goal is not for students to know how to use a specific digital tool. The ultimate goal for students is that they will choose ways to create, and share based on their learning preferences, styles, and needs and develop their own process for transforming their learning through the use of technology. (Laura Reflection)

Natalie talked about purpose and intention through social media and online apps. She explained in her reflection how asking and finding out questions about Twitter led her to "understand the purpose better", which then led to awareness about the purpose and function of other apps such as Facebook. In her post interview, she spoke about knowing the "purpose of a tool" and when that tool is appropriate.

Both Clara and Janine use the word "enhance" in their final survey definitions, still contending that technology will improve teaching, learning, and knowledge in different ways. However, neither used "engage" or "enhance" in their post interview and reflection definitions. Instead, they opted to use words connecting digital literacy to skills and dispositions.

Looking closer at Clara's original definition, her use of "engage" and "enhance" assumes some type of active social, cognitive, emotional, behavioral, physical, or cultural participation (Glossary of Educational Reform, 2016), while *enhancing* suggests improving upon something or raising the quality. The words, engage and enhance, tend to saturate practitioner resources, education websites, and educational marketing materials to indicate the value or worth of an innovation, a tool, or a practice (e.g., Pearson educational products, GoNoodle, Kahoot!). Participants used these words in their initial definitions to indicate technology may in fact be a positive addition or that the technology must improve their lessons and student learning.

The Power of a Catchphrase

I noticed a clear connection between catchphrases used across institute spaces and within participant language. Catchphrases are a powerful speaker's tool to help communicate a message. They are normally simple sentences, with impactful buzzwords or rhythmic language, used repeatedly in a speech. Additionally, they are often used for branding purposes and typically become part of an organizations or person's identity. When used correctly, they are memorable phrases that leave a lasting impression about the topic of discussion. Like a jingle or earworm, they tend to stick around. However, they can also have the opposite effect if the overall message of the presentation or organization is condensed down to a few catchy words without context. In their reflections and interviews, I noticed participants reusing or referencing catchphrases heard throughout the week, to describe digital literacy practices or associated tools. The following examples represent the most common catchphrases reused by participants.

"Everyone Learns from Everyone". The key theme and catchphrase of the institute is everyone learns from everyone. It appears in the promotional emails and videos and is heard throughout the week during whole group activities and keynotes. These few simple words send the message that everyone at the institute, whether a director, faculty member, or participant, has something of value to share and something to learn. This idea is reinforced through the design of the institute, which includes signature activities and experiences such as the Marshmallow Challenge, Compass Points, and dyad partnerships for the inquiry project. The Monday keynote stressed this in the introduction stating, "But each of you bring all kinds of expertise, and all kinds of things that none of our team leaders have. So, we bring you into this with an openness for questions and eagerness to learn from other people" (Monday Keynote).

Laura found “everyone learns from everyone” meaningful and discussed the advantages and necessity of collaboration and how the institute modeled this idea. She said,

> We put ourselves in our students’ shoes as we created a book trailer that would be an example of a student product and together, we worked through the tool and the writing process. Both of these collaborative activities would have been much more time consuming and a lot less rich if we were working through them alone. The work with my dyad reinforced the idea of the institute that, “everyone is learning from everyone” (Laura Reflection).

She continued by discussing the potential of collaborating with colleagues to further support her students with digital literacy, but also to help with planning and problem solving. Similarly, Clara connected this phrase with the importance of “tapping into other professionals”, especially experts in the field. In terms of digital literacy, she said, “The other thing that I thought was particularly interesting aligned with collaboration was that the experiences with creative collaboration helps build competence in digital literacy. And I think just the back and forth working with my partner, and the other people in the institute allowed me to have a little more competence.” (Clara Reflection). This was echoed by Natalie and Janine in their reflections. Natalie cited an article by the co-directors in her reflection and said, “…it is okay to struggle, and it is not possible, even as an expert, to know about every single thing media related. [the faculty] would try things out to problem solve the issue or offer suggestions while asking probing questions. Through this, they offered “Experiences with creative collaboration” that helped “build confidence in digital literacy.” (Natalie Reflection). Janine connected the phrase with another quote “collaboration is magic” and said, “Going into the institute I thought of myself as a pretty tech savvy person, but with that being said I was able to learn through

collaboration from all the amazing individuals that also took part in the institute." (Janine Reflection).

"Process over Product". The design of the institute included an inquiry experience, created by a dyad partnership throughout the week. The goal was to experience and appreciate the different aspects that go into an inquiry and what learners gain throughout the process. This was further reinforced by the framework language that prompted a process- product balance when planning for instruction. Therefore, "process over product" was a phrase used by the institute to draw attention to the "process" involved in inquiry and rethinking how technology is enacted throughout rather than only at the end as an artifact.

"Process over product" had the biggest impact on Natalie and her dyad partner and how they thought about digital literacy. Their final project was titled *The Process is the Product: Empowering Students to Become Information Literacy Educators.* During the post interview, Natalie explained "…our whole project is about the process is the product, …[it] is trying to get students to walk through the process of coming up with their own question, whatever that may be, and then researching it and then sharing out" (Natalie Post Interview). In her reflection, also titled *The Process is the Product*, Natalie elaborated on how this idea was meaningful to her saying,

> The biggest overarching theme that I took away from this jam packed, whirlwind of a week was that the process is ultimately the product. The process allows for failure. It allows for struggle. It allows for inquiry…As it turns out, the process of learning is the actual product that we are searching for. How we decide to share this knowledge, is the cherry on top! (Natalie Reflection).

Later in the reflection she stated, “Going through the process of figuring out Twitter led me deeper than just an end product. The process and knowledge gained from what the inquiry led me to and through, is the true product itself.” (Natalie Reflection).

Likewise, Laura recognized the power of working through the process and deeply “exploring ideas”, but she also realized there was more involved to technology than simply using it as a final product. In her reflection she stated, “I also want to design instruction that makes technology part of students' learning process rather than just something added on to the end of a unit as an afterthought.” (Laura Reflection).

“Technology is like Oxygen”. The Wednesday keynote left a lasting impression on all four participants as evidenced in the post survey where they all indicated the Wednesday keynote was one of the five most impactful elements of the program. Each mentioned the keynote during the week or in their final reflections as well. However, two participants reused the catchphrase “technology is like oxygen” when discussing digital literacy and the place of technology in the school setting.

Janine found the keynote “inspirational” and said, “…some things that I took away from [the keynote] were that technology is like oxygen, which I thought was really empowering” (Janine Flipgrid). However, Janine did not follow up with what she took away from the keynote or how she interpreted the saying. She mentioned this same phrase again at the end of her reflection writing, “I am hoping that I can encourage veteran teachers to try new things. And I am hoping to make them realize that digital literacy cannot wait any longer! “Technology is like oxygen; ubiquitous, necessary and invisible” (Janine Written Reflection). Since this was her concluding impactful quote, I looked at what she wrote prior to this statement to provide insight on how she interpreted this phrase. She spoke about outdated schools and the need for teachers to

do something different. She also mentioned how technology can no longer be ignored, followed by a quote by Crowley (2014) that states, “Many adults think that because children have been immersed in a technology since a young age, they are naturally “literate” or skilled in using technology” (Janine Written Reflection). It seems Janine understands that although technology is pervasive and an important aspect of personal and academic spaces, there still needs to be a focus on the importance of digital literacies and being more intentional about what is enacted in the classroom.

Laura also mentioned the catchphrase in her Flipgrid reflection, but unlike Janine, she questioned it saying, “I've only just gotten to scratch the surface and see how those tools can be integrated into the classroom. I would love to hear more from teachers who have found ways to make technology like oxygen in their classrooms like [Wednesday keynote] talked about. And maybe there were some sessions on these other topics and ideas, and I just missed them” (Laura Flipgrid). This shows Laura understands the intent of the message, but questions how to make this a possibility and what this would look like in practice.

“Technology is like oxygen, ubiquitous, necessary, and invisible” is a catchphrase used by the speaker repeatedly to draw a reaction from the audience and strengthen their argument. As an example, the speaker uses the phrase and follows up with,

> It's got to be everywhere. It's got to be part of everything you do. And then we got to stop talking about it quite so much. The kids aren't doing a digital video project or making a film. They're not doing a spreadsheet contest. They're doing data analysis. They're not doing a Google Docs project, they're writing. And they're using the tools that make the most sense today. All of you who have a laptop, or a phone out right now aren't involved in digital learning. You're just working or checking your email because you're bored,

which is fun. We've got to stop thinking that the tech is the point. The point is the work, the tech is the tool. (Wednesday Keynote)

The speaker seems to be saying, this is where we need to be to truly transform our schools, but the phrase falls flat. First, saying something is "like oxygen" means we, as living beings, are dependent on it. That is simply not true for everyone. Second, the buzzword "ubiquitous", assumes technology is available to any student and teacher, which we know is not the case. The pandemic revealed the incredible disparity between infrastructure and access to basic tools when schools asked teachers and students to transfer their classrooms to online spaces. Third, saying technology is "invisible" implies it works seamlessly in the background. This is a contradictory message to the institute and defeats the purpose of intentional and purposeful planning technology or developing digital literacy.

With that said, the catchphrase was used by the invited keynote, in the middle of the week, within the context of several other supportive workshops, activities, and keynotes, before and after, providing participants with language and experiences to anchor those lofty ideas. Second, the catchphrases seemed to be an emotional hook, generated as a sweeping take-away. And it did work to an extent. However, when participants were reusing that catchphrase, they were pairing it with other ideas, conceptions, and notions of digital literacy learned throughout the week. Therefore, they attached their own meaning to the phrase.

Institute Design Elements and Embedded Language

The context was important for understanding the connection between the participants and the institute and how participants acquired and used language (Gee, 2011) and ultimately how they started to think differently about digital literacy. The design of the institute helped support participants as they acquired a specialized language, providing them a space to try out new

language or connect familiar language to digital literacy in a new way. Understanding some of the key activities and pedagogical practices from the institute and the language used to promote, communicate, facilitate, and encourage attendees is important to understanding how the participants' language developed or why they chose certain words, phrases, or descriptors.

Design factors that influenced language acquisition included signature activities, strategically placed throughout the week to introduce, support, and develop participants' conceptions, skills, and knowledge of digital literacy. Signature activities and pedagogies mentioned by participants included: (1) No-tech activities, (2) High-tech experiences, (5) collaborations and partnerships, and (4) an inquiry-based approach to learning digital literacy. For my purposes, signature activities and pedagogies are purposeful, recurring activities or practices connected to a discipline, or in this case, connected to the identity of an organization.

At the institute, participants were introduced to digital literacy practices and skills through signature activities and intentional pedagogical practices. All four participants made comments specifically about signature activities during Flipgrid reflections, the final interview, and the post institute survey that stood out to them or had an impact on their learning and understanding. The activities included no-tech and high-tech experiences, workshops, and collaborative exercises. Participants also mentioned specific pedagogical practices such as the formation of dyad partnerships and the process of engaging in an inquiry project as part of their professional learning. During signature activities and dyad partnerships, and through the inquiry project, participants heard the language of the institute as they navigated the different spaces. Throughout, faculty served as facilitators, coaches, and support during each experience, reinforcing and modeling different ways to work with and think about digital literacy. The

language from the signature activities were reflected in the participants' reflections, interviews, artifacts, and survey responses.

No-Tech Signature Activities. No-tech activities were an intentional design decision to help participants learn more about themselves, how they work with others, and how they approach problem-solving tasks. Understanding these skills and dispositions is intended to help participants develop awareness, but also a language to use while working with others to explore technology and develop their digital inquiry. The no-tech activities mentioned by participants, connected to how they spoke about digital literacy, included the Marshmallow Challenge and the Compass Points Activity Protocol.

The Marshmallow Challenge, popularized by Tom Wujec on a 2010 Ted Talk, is a design activity to help participants generate ideas, think in unconventional ways, collaborate with others to achieve an end goal, and work as part of a diverse team to solve a problem. All four participants attended this activity on Monday, working in different, randomly assigned groups. Institute faculty presented the challenge by communicating the goal and purpose, then asking the teams to create the tallest structure they could with the given materials. Teams were timed, faculty observed, but did not intervene, and the activity concluded with measuring the towers for bragging rights and debriefing the process.

This task, absent any digital technology, encouraged a bricoleur approach (i.e., an organic, iterative design process). This design challenge required teams to discuss how to use the finite materials in a way to produce a free-standing structure. This design aspect repositioned the "tools" of the task as a part of, but not at the center of the goal. Talk was key to the process and outcome. The participants needed a social language for negotiation, sharing strategies, and

communicating wants and needs, but the task also required a shared language for the tools that they were using.

The activity was mentioned in Janine and Clara's Flipgrid videos on Monday night and in both of their post institute surveys as one of the five elements of the program that was most impactful on their learning. Although placed at the beginning of the day, before the morning keynote and afternoon workshop, the experience stayed with them. Janine stated, "It showed great ways to collaborate, and also problem solve" (Janine, Monday Flipgrid). Clara commented that she was excited about the activity and planned to "… bring that back to my faculty as well for a team building activity…" (Clara, Monday Flipgrid).

Connected to developing conceptions of digital literacies and acquiring a language of digital literacies, the Marshmallow Challenge reinforced how to creatively approach teaching and learning and how to creatively collaborate to generate ideas. Dispositionally speaking, failing at a task, and retrying with different solutions or approaches is a natural part of the challenge and a skill and attitude needed when traversing an ever changing and challenging digital world. Embracing failure is mentioned by the institute within this activity and within a keynote. This sentiment was picked up in Natalie and Janine's language at the end of the institute. Natalie connected failure in a positive way with what she believed was the overarching theme of the institute, "the process is ultimately the product. The process allows for failure. It allows for struggle. It allows for inquiry (Natalie, Reflection). Janine also embraced the idea of failure and mentioned in her post interview,

> At first, you know, like, you might just try one thing, and it might be successful, or you have to fail before you have all those, you know, successes in digital literacy. And I think

> a lot of people are afraid of like the failure part. Yeah, like they talked about. And I think at the same time, like people need to know, like, it's okay to fail. (Janine, Post-Interview)

While the Marshmallow Challenge called on participants to think about approaches to team dynamics and problem solving, the Compass Points Activity focused more on self-awareness and working collaboratively. The Compass Points Activity protocol (School Reform Initiative, developed by Sue Horan, 2007) was developed as a self-awareness exercise to demonstrate how personal preferences and other's individual preferences and approaches during group work affects group dynamics and effectiveness. The protocol labels group members according to North (action oriented and take-charge member), East (big picture and connection member), South (group facilitator and communication member), and West (detail oriented and organization member). The activity is always included since the institute asks participants to form a dyad partnership to work together throughout the week on a project.

This activity was facilitated on Tuesday morning following a group presentation. Interestingly, each participant referred to this activity throughout the week whether it was in their Flipgrid reflection, in their final written reflection, in their final survey, or in their post-interview to describe their collaborative identity when working in groups or to describe what is needed when collaborating with others. Not everyone called the activity by name. Instead, they alluded to it by referring to themselves or others as a compass point.

The Compass Points activity resonated with Natalie, and she mentioned it in all her reflections and in her final interview. She used the language of the Compass Points to talk about the way she approached technology activities with other attendees and how she worked with her partner on the inquiry project. During one of the Flipgrid reflections, she described an experience she had when trying to negotiate with another attendee on a technology activity, "So, for me, I

think it was trying to definitely be a north that was probably my favorite part. But I think I have part of the south and I think today that didn't work for me" (Natalie, Flipgrid). In another example, when working with her dyad partner, she commented,

> I think that being a north, I think that I am fast, and I think, sometimes, not clear and my head is clear, but it might not come out clear. I think having someone that knows and supports that helps because then I'm more comfortable. (Natalie Post Interview)

Laura reflected on the activity during the week and realized more about her own working style and how that might fit into a collaborative group adding, "And I've learned that I'm someone who collaborates on the west side of things. So, I've learned that I really like to know the details of a project" (Laura Flipgrid). This was mentioned again in her post interview as she talked about her successful partnership and how understanding different styles worked to their advantage. She commented, "Maybe, maybe it goes back to when our collaboration style, we did north, south, east, west, and I was a west. I needed to know the who, the what, the why, when maybe that is my thinking related to that" (Laura, Post Interview).

Janine also explicitly named her working style and what she learned about it in the context of working through problems. In her reflection, she wrote,

> I am an East. An East is someone who speculates – likes to look at the big picture and the possibilities before acting. It really made me think about how I work and collaborate with others and what I bring to the table during a group setting. It also made me realize that you need all compass points for a strong collaboration. Everyone has something to offer and not everyone approaches a task the same way." (Janine Written Reflection)

High-Tech Experiences. High-tech experiences were opportunities to learn about, play with, and critique tools and apps. These included the Screencast practice and the daily choice workshop sessions such Garageband, Audacity, and tools for digital writing.

Clara specifically mentioned the GarageBand workshop because it was "something that I think would help my special ed students, especially the reluctant writers" (Clara, Monday Flipgrid). She pointed out that in the session, the facilitator provided an explicit example of a "reluctant writer" and the outcome when GarageBand was used as a mediating factor for expressing writing in a new way. This inspired Clara to rethink her pedagogical practices and how she approached writing in her classroom and what is considered a writing practice. In the context of this workshop, Clara has acknowledged there are other ways to produce writing that would be beneficial for different types of students. This has extended her thinking about digital literacies and moving beyond the use and function of Garageband to the pedagogical affordances of tools.

Similarly, Laura attended writing-focused workshop by a different presenter where she developed a new understanding of how tools could be harnessed during writing saying,

> Yeah, and I like the idea he presented, there's a difference between "mode" and what was the other word he used? "media," maybe? But you're using a digital tool, but you're having them write within a certain genre, using that tool. So even when you use a digital tool, you still have to think about the craft techniques of whatever genre you're writing about, and I think that was an important thing to remember. Just because you're using a digital tool doesn't mean kids are just doing whatever. You're still teaching a specific genre, and you're still teaching the craft of writing. (Laura, Post-Interview)

Through this workshop, Laura realized there is more to consider than simply incorporating or introducing a tool or using that tool as the median for writing. The teacher is still an integral part of the planning and enactment process.

Laura also mentioned a website she found valuable from a different session. In her reflection, she wrote extensively about "exploring [her] own questions" and engaging in the inquiry process. In addition to engaging in the process, she realized there were websites that could promote an inquiry mindset. She wrote, "I also attended a session at the institute that explored the use of websites to promote inquiry. Wonderopolis (wonderopolis.org) can be used to spark students' wonderings and be a model for students' own exploration of questions and their creation of products to share with others" (Laura, Reflection).

Dyad Partnerships and Collaborations. Dyad partnerships were a design decision aligned with the institute's philosophy and goals of strategic and creative collaborations. Within partnerships, members brought back language and experiences from other activities within the institute to collectively design a product. This also gave participants an opportunity to try out the language they were acquiring.

Throughout reflections, Clara mentioned the value of collaboration and partnerships. In the daily Flipgrid reflections, she mentioned more than once a desire to collaborate, problem solve, or learn with others. Similar sentiments were echoed in her summative reflection where she talks about the importance of "socializing and collaborating" throughout the institute because of all the "new information to be learned" (Clara, Video Reflection). She elaborated further by talking about the different social media apps she learned about and why those spaces were important to "collaborate with other(s)".

One of the most impactful collaborations that was mentioned during the week and again at the end in the post survey and final reflection was the dyad partnership. She stated more than once her excitement to work with and learn from a dyad partner throughout the week (Clara, Tuesday Flipgrid) and continued expressing her gratitude for her dyad partnership in her final video reflection saying she appreciated having the ability to:

> …reflect, support, and learn through [the] inquiry project. We were learning together about digital tools. We were inspiring each other with creativity. We were motivating each other. (Clara, Video Reflection)

Laura had a positive experience with her dyad partnership and spoke about it in her reflection and post interview. In her interview, she mentioned the big "success" of their partnership and then said, "we figured it out together…. So, we went back and forth trying to figure out, there had to be an easier way…. So, we worked through the whole process" (Laura, Post-Interview). She expressed how helpful it was to have other people to bounce ideas off of and to work through problems as they arose. In her reflection, she spoke more about her dyad saying,

> With my dyad at the institute I explored digital tools, created artifacts using digital tools, and developed a plan for integrating digital tools into instruction. This partnership within which I worked was an example of the "creative partnerships" that Hobbs and Coiro (2016) discuss as being necessary to advancing one's learning about digital literacy. As our dyad began our work, we learned that we had similarities. Beyond our interest in digital literacy, we also had an interest in supporting students as they grow into independent readers. Our professional backgrounds reflected our differences… and we

also had varying levels of comfort with digital tools. Our similarities, as well as our differences, allowed us to learn from each other. (Laura, Reflection)

Laura recognized the value of engaging in a creative partnership and looked forward to her future leadership role saying, "As I take what I learned about digital literacy into my work as a teacher supporting students in learning to read and an educator supporting teachers in their literacy instruction, I hope to continue to collaborate with others" (Laura, Reflection).

Inquiry-Based Approach. Engaging in an inquiry-based approach is a signature pedagogical practice of the institute. The inquiry-based approach contains explicit and implicit structures as well as engages participants to plan for and experience digital literacy and classroom practices. Participants used the language of inquiry within their definitions, post reflections, and surveys, but they also identified the inquiry approach as a meaningful way to learn about digital literacy.

Laura commented on her new understanding of inquiry as a result of experiencing it firsthand and the importance of exploring meaningful questions saying,

> During the institute, I had the opportunity to explore questions I have about digital literacy and engage in the process of inquiry to seek answers and ideas. Participating in the institute, which is based on an inquiry-driven model that allows for the exploration and experimentation with technology and digital tools, mirrored authentic learning. The inquiry process results in true learning because it starts with a question to which we don't yet know the answer and through exploration of this question we arrive at deeper understanding, as well as more questions to drive further learning. An inquiry-driven model is what we want for our students. (Laura, Reflection).

Clara also mentioned the importance of kids having "wonderings about the world" and inquiry as a meaningful form of teaching and learning that, in her mind, is being "digitally literate." She explained teachers should "push our kids not to settle for easy answers" and with an inquiry approach "…you are able to design lessons that create a link between what the kids are wondering what they'd like to research and what they care about…" (Clara, Video Reflection). Clara expanded on this in her post interview and explained that inquiry gives students something to work towards as opposed to only finding a correct answer and moving on. She says, "Everything is so easy to just Google it. Whereas like, with inquiry, they figure things out" (Clara, Post Interview).

The ease of answer access is echoed in Natalie's post reflection where she mentions avoiding providing a quick answer. Instead, she valued taking the time to have a discussion saying,

> As I was working on this reflection, my 7-year-old wanted to know why our hands are smooth but other people's hands are rough. Normally, I would just explain to him that it depends on what people do for a living, their age, etc. Instead, I closed my computer and asked him why he thinks this is the case. A whole new discussion erupted for both of us through this type of conversation than would have occurred if I had just given him what I felt was the answer. (Natalie, Post Reflection)

Summary

Looking across individual participants reveals how four participants share an experience, yet still take away a different way of talking, and therefore thinking about digital literacy. Each participant had different knowledge, backgrounds, and lived experiences that impacted their experience and outcomes at the institute. Participants reproduced language that was most

frequently used, reinforced, and heard widely across the institute or in impactful spaces. Language that was not widely heard and reinforced either ignored (i.e., word was not used or referenced) or a similar word was used in place of the words reproduced by the institute. Within their final reflections and interviews, all participants made statements about the changing nature of literacy and the expanding forms of texts (i.e., read the world, texts are more than print-based). Their comments indicated a recognition of an expanded view of literacy as one that moves beyond the traditions of reading and writing reinforced in schools.

In this chapter I provided a summary of participant and institute language use, data demonstrating the shifts of participant language across the week, data demonstrating the type of language used by the institute, and the connections between participants' language use and the context in which it was spoken. I started with a qualitative content analysis of participants' definitions, words, and phrases used during the institute to identify what language they chose to use to express their conceptions of digital literacy and what words and phrases they acquired as a result of participation at the institute. I then discussed what participant language indicated about their developing conceptions of digital literacy skills, attitudes, dispositions, and practices. Finally, I concluded with a discourse analysis and identifying the relationship between the participants' language and their participation at the institute. This included identifying the structures and signature pedagogical practices utilized by the institute and how those specific facets helped participants acquire a new specialized language.

CHAPTER FIVE: DISCUSSION, IMPLICATIONS, AND CONCLUSIONS

Well-designed professional learning is necessary for teachers to acquire, develop, and refine professional language and pedagogical practices. In addition to expanding professional knowledge and understanding, professional learning can boost confidence, build professional networks, improve the quality of instruction, and improve student learning (Borko, 2004; Desimone, 2011). As classrooms continue to evolve in light of new innovations, ongoing professional learning is essential for teachers to develop a deep understanding of the content, tools, and materials they use to teach (Desimone & Garet, 2015; Zimmer & Matthews, 2022).

In this dissertation, I examined four elementary teachers' language in reference to digital literacy and how the professional learning ecosystem contributed to their conceptions of digital literacy. I investigated how teachers were developing conceptions of digital literacy and what language shifts occurred over the course of the week. The study was guided by the following research questions: (1) How do elementary teachers define digital literacy throughout the professional learning institute? (2) What terms and descriptors do elementary teachers use to label and discuss their emerging conceptualizations and instructional practices in digital literacy? (3) In the context of professional learning, in what ways do the teachers' language practices align with or diverge from the language practices, texts, and artifacts used by the professional learning provider (e.g., the institute)?

Through a qualitative, multi-analysis design, I identified findings related to the development of a specialized language of digital literacy and the connection between the institute and participants' language and conceptions of digital literacy. Decomposing the professional

learning context revealed layers of language practices across the week, spaces of learning where language developed, and the influence of signature activities and facilitators. As a result, I have identified conclusions about digital literacy professional learning, leading to new understanding about professional learning practices, the value of a definition, developing conceptions of digital literacy, and acquiring a professional language.

Discussion

A Change in Language Indicated a Change in Thinking

Ludwig Wittgenstein, a 20th century language philosopher, once said, “the limits of my language means the limits of my world.” He suggested words are symbolic tools we use to share our intent and represent our thought processes. Language reflects how people perceive and understand the world around them and thought is shaped within the boundaries of our language. As people's understanding of the world changes, their use of language also changes to reflect those new understandings. This is seen in the evolution of words and phrases over time, as well as the development of new words and phrases to describe new or evolving concepts and ideas. Moreover, changes in language can also reflect changes in society, such as shifts in cultural norms and values.

How we speak and what we say continues to develop our thoughts and conceptions of a discipline, a topic, or an idea. Teachers with access to and practice with the diverse and nuanced language of digital literacy can begin to move beyond deficit identities and extreme views of technology and begin to imagine digital literacy in service of technology rather than technologies in service of digital literacies. Imagining digital literacy in service of technology would emphasize the importance of developing digital literacy skills first and then choosing appropriate tools to support those skills.

Participants' conceptions of digital literacy began with something akin to the phrase "using technology" or "using tools" as a starting point. Eventually, talk of tools and technology not only decreased mid-week but became secondary to teaching practices, planning, and dispositions. Language shifts with regards to tools might be associated with the active acquisition of knowledge, and once the tool is understood and used, the teachers shift their talk about application rather than tool navigation. This view corresponds with Vygotsky's theories of tool acquisition and the ways in which tools change our cognition, but also the ways in which language becomes inner speech once acquired.

Professional Learning can Develop a Specialized Language

Each participant attended the institute with different expertise, background experiences, and comfort level with technology resulting in different versions of an initial definition, ranging from Janine who said, "I'm not entirely sure…" which was echoed by Laura who stated it is something "I don't know a lot about" to Clara who said, "I think digital literacy is using technology to engage students and enhance teaching." Natalie offered a more confident starting definition that included "knowing and understanding about a wide variety of digital tools and how to use them to search, create and present ideas and information." Participants certainly had "words" to start a conversation, but as demonstrated in chapter four, those words and phrases evolved and became more precise and connected to a particular digital literacy community of thinkers.

This study reveals how professional learning can help participants acquire and develop a specialized language within a discipline or a different way of talking about a concept. As teachers acquire and develop a specialized professional language, they improve the clarity, effectiveness, and accuracy of how they talk about digital literacy skills and dispositions, which

can in turn enhance students' learning and engagement. As Gee (2011) suggests, language exists and develops in social and cultural contexts, this includes professional learning spaces. Throughout the 42-hour, weeklong institute, participants were immersed in a language-rich environment, involving authentic, communicative, and hands-on experiences.

The language shifts noted across the participants indicates their communication improved as their words and phrases moved from broad, sweeping definitions of digital literacy in the classroom context, towards more concrete, descriptive, and confident definitions of digital literacy in the classroom and beyond. Participants began using actionable words shifting their understanding and relocating their point of view of classroom practices. There was also an evident shift in their words towards the cognitive and social aspects of digital literacy whereby participants moved the focus away from abstract concepts of technologies and tools for teaching and learning and considered the dynamic processes of engaging and participating with others in digital spaces, while also connecting with the complex cognitive processes required to navigate digital spaces.

Participants at the institute improved their knowledge of digital literacy vocabulary, terms, and phrases. They began to negotiate and navigate versus fumble around with words and their confidence and self-efficacy grew. As participants' language evolved over the week, they began to talk differently about themselves and their roles. They acquired a new specialized language to use within the institute emphasizing how professional language puts us all on the same playing field so we can communicate what is happening around us. The institute helped teachers learn more about specialized terms and concepts associated with digital literacy that they in turn took up and used as part of their language and talk with peers and with planning. This was the result of: (1) direct instruction (i.e., explicit presentation of definitions and content),

(2) repetition (repeated use and exposure to definitions and language), (3) modeling (i.e., facilitator's use of language in the context of an example or within dialogue), (4) discourse with peers (i.e., listening to and practicing the use of language within the context of the institute), and (5) application (i.e., applying the language and definitions through reflections, planning, and project creation).

Institute Design and Practices Were Important Factors Development

The professional development literature states that the most desirable teacher professional development includes: an intentional content focus, incorporates active learning and exploration, supports collaboration, models effective practice, provides expert support, offers feedback and reflection, and provides adequate time to learn and practice (Darling-Hammond et al., 2017; Desimone, 2009; Jenkins, 2009). Others have identified the importance of design and sequence (Sztajn et al., 2020), facilitator role and function (Patton et al., 2012; Perry & Booth, 2021), and signature pedagogies (McLain 2022; Parker et al, 2016) as important factors in successful professional learning.

The four teachers at the center of this dissertation entered the institute with practical experiences and knowledge of teaching and learning, yet largely unarticulated thoughts and ideas about digital literacy. During the institute, participants were exposed to carefully orchestrated, goal-directed activities, sessions, and resources, culminating in a collaborative product. The institute's design relied on a blend of formal and informal instructional activities, learner initiative, cognitive dissonance, and social interactions to achieve deeper conceptual development. Participants developed conceptions of digital literacy and acquired a language of digital literacy because of the intentional decisions that went into the design of the institute. This

included the facilitators' roles and the inclusion of carefully sequenced activities throughout the week.

Through the institute, participants were invited into a community of practice with each other and the facilitators (Wenger, 1998), where they acquired, practiced, and shared an evolving language and understanding of digital literacy. The relationship is reciprocal where facilitators contribute to the learning taking place throughout the experience, and are simultaneously learners themselves, as they are transformed from their work with the attendees. This evident in the motto of the institute "everyone learns from everyone" and reinforced by the directors in the keynotes and by the faculty in their interactions. This is confirmed in Natalie's reflection when she said, "[faculty] stayed calm and helped solidify the fact that it is okay to struggle and it is not possible, even as an expert, to know about every single thing media related." She later stated, "I even taught [a faculty member] something this week." As demonstrated in this dissertation, the common language was not their definitions of digital literacy; instead, it was a common language of the values of the institute (i.e., everyone learns from everyone) and how to talk about an expanded view of digital literacy that evolves over time for everyone.

In addition to the role and practice of facilitators, the sequence and placement of events and activities promoted the acquisition of knowledge, skills, and language. Sztajn et al., 2020 found that the sequence of activities, as a part of the design of professional learning, was an important factor in developing the capacities and capabilities of teachers. The sequence and placement of events and activities during professional learning can promote the acquisition of knowledge, skills, and language by creating a logical, not necessarily linear, progression of ideas and concepts. This might include starting with foundational concepts and building upon them, applying new knowledge through hands-on experiences, reinforcing understanding through

repetition and reflection, providing coaching and support for feedback, encouraging active collaboration with peers, and incorporating authentic examples and research.

Like the unfolding of a carefully crafted lesson or the construction of a meticulously designed plan, the institute followed a selected sequence of events and activities that immersed participants in an inquiry-based experience. Each component was arranged in a way that would introduce and reinforce content, develop a disposition, disrupt current thinking, and promote a creative, collaborative spirit. As an example, the first "kickoff" event ignited interest and presented important concepts and ideas while the first full day presented theory and foundational knowledge, followed by a no tech, collaborative activity (e.g., Marshmallow Design Challenge) intended to demonstrate self-awareness and the skills and disposition needed to engage in a different type of teaching and learning. Throughout the week, activities and events served different purposes and were responsive to participant needs. This included providing choices for learning and projects, forming collaborative partnerships (i.e., dyad groups), and opportunities to reflect on learning in different ways (e.g., group reflect, video reflection, and digital reflections). The final activity, at the end of the week, celebrated partner projects, elevating new learning and new thinking. This final activity provided an opportunity to put into practice newly acquired language, as participants explained and described a project they created over the week. This final gesture also placed attendees in the position of facilitator and expert, where they continued to develop an identity of a digital literacy leader.

Implications

Planning for Digital Literacy Goes Beyond the Inclusion of Technology

It goes without saying, but state, district, or grant money spent on acquiring devices and diffusing them into the classroom will not lead to successful use or intentional planning. In fact,

it may result in more resentment towards technology and no discernable impact on teaching or learning. Further, requiring teachers to attend professional development focused on how to only use a device, app, or software, leads to knowledge of a tool, not knowledge of appropriate pedagogy, planning, and digital literacies. Bestowing tools and having good intentions for using tools in a lesson do not guarantee good planning. National calls for technology integration highlight the need for technology to enhance instruction, not be a replacement for effective teaching practice. It should support student-centered learning, provide students with opportunities to collaborate and communicate with their peers, and provide access resources and tools that can help students engage with and deepen their understanding of the content.

Incorporating digital technologies into the curriculum is not easy and not the only answer to student "engagement" and learning. As with any tool, the teacher must be intentional with what comes into the classroom and how it is used during teaching and learning. This includes being knowledgeable of the practices and dispositions needed to maximize the potential of that tool. Participants at the institute learned more than just new definitions and "cool tools", they began rethinking their approaches to planning and teaching. Although each participant had experience and expertise in planning and teaching, this did not guarantee that when handed a new tool, they automatically possessed the pedagogical content knowledge needed to intentionally plan a lesson. Participants mentioned explicitly in their pre-interview that they had experience using technology in the classroom, yet they still struggled to find a way to successfully integrate it into the classroom. Providing participants with an inquiry-based framework and approach to teaching, while guiding them through no-tech and high-tech activities, reinforced practices and dispositions needed for both design-based thinking and the inclusion of new tools (i.e., curiosity, creativity, playfulness, resilience, risk-taking). With the

help of the institute, participants were able to transfer skills and dispositions learned through the Marshmallow Challenge and Compass Points (both no tech, collaborative activities) and through the inquiry-approach to their approach to tools and technologies. There was a realization that it is "not about the tool", as mentioned by more than participant at the end.

Within the data, a change in language from "using technology" and "using tools" towards processes and practices, suggests participants developed a different way of conceptualizing and planning for digital literacy. There was a move away from the word "technology" or "tool" as an abstraction or a depersonalized system often required of teachers in classrooms, towards technology and tools as an extension of the teacher or student and a purposeful part of the process of teaching and learning. This was evident in the words and descriptors they used alongside the word tool (i.e., meaningful, purposeful, authentic) and how they could foresee students using tools and for what reasons. This might indicate the materiality and constantly changing nature of tools is not as important as how we think, act, and participate fully as contributing citizens.

The Value of a Definition

A definition of digital literacy was the catalyst for this dissertation. It was one way to gather information on what participants understood about digital literacy throughout professional learning, in a particular time and place. If literacy is deictic (Leu et al., 2017) and a definition of digital literacy is in constant flux depending on the emergence of new thinking and innovations, what is the value of asking, including, or updating a definition of digital literacy during professional learning?

At a foundational level, definitions are a tool for making sense of the world and for expressing thoughts and ideas clearly and accurately. They help to clarify and communicate the

meaning of words and phrases, and they aid in the organization and categorization of information and ideas. Further, definitions can also be used to establish the boundaries of a concept or term, depending on the field and context in which it is used.

Including foundational definitions and important terms during professional learning experiences are important and needed, because they ensure participants have a clear and common understanding, in that moment of time, of important terms and concepts related to the goals and objectives. The definitions and associated terms serve as a point of reference that can facilitate more effective communication and collaboration among team members and lead to better decision-making and problem-solving. Beginning learning with a definition or the presentation of multiple complementary definitions, helps participants contextualize the information they are about to learn and confirms or disconfirms current thinking, bringing awareness to what they believed or what they still need to know. This can be indispensable for ensuring everyone has a common starting point and frame of reference. As an example, the institute "kick off" started with definitions of digital literacy, communicating to participants what digital literacy means to different individuals, across different fields within education (i.e., it is not only informational technology and knowing how to use computers). This provided a boundary to work within and a space to expand on those definitions and for participants to apply them to their own context.

Definitions of digital literacy will continue to shift and change with evolving and emerging innovations (e.g., artificial intelligence, virtual reality, augmented reality) and with a changing sociocultural landscape. And all of that will certainly alter the way teachers talk and think about digital literacy and how they plan for student learning. We only need to look back at what happened at the beginning of Covid and the shift to online learning, and what is happening now with AI technology (e.g., Perplexity, ChatGPT, deep fake videos) to realize we are in a

constant state of flux. But that is the very reason those progressing definitions and evolving examples are so important.

Professional Learning is More Than Cool Tools and Catchphrases

Professional learning isolated to *only* "tech slams" (e.g., rapid exposure to many apps, tips, ideas), tech company workshops (e.g., Promethean, Google), or how to use a single tool (e.g., Chromebooks, podcasting, Seesaw) is not enough to build the capacities of teachers. In fact, every example I just provided may be obsolete as you read this. Exposure to new innovations and learning how to use specific tools is a part of teacher learning, but it is not the only solution for what we need. As it has been said many times, technology is rapidly changing and tomorrow there will be new tools, new trends, and new digital spaces to explore. What does not change are the skills and dispositions needed to forge ahead and thrive. Covid-19 and the push to go online during the pandemic, forced education to reexamine and rethink how to support teachers. No amount of tool know-how helped teachers fully transition their pedagogy and practices online. Professional learning spaces and practices focused on developing "technology-ready" teachers needs an overhaul and further consideration of alternative structures and formats. Thoughtful consideration should be given to who is facilitating the professional learning and what types of pedagogical practices and activities.

Faculty and Staff Expertise, Roles, and Alignment. Professional learning facilitators have been the focus of previous studies exploring multidimensional expertise, instructional choices, belief systems, and support of facilitators (Patton et al., 2012; Perry & Booth, 2021). Knowledge and content do not simply descend from the organization and pour into the facilitators. Facilitators bring their own personal, practical, and professional knowledge to the program that adds another layer of complexity and careful attention. As shown in this

dissertation, faculty and institute personnel were an important part of the institute design and contributed to reinforcing the objectives, goals, and language of the institute. They were brought into the institute because of their specialized, multifaceted skills and experience, but were also considered a part of the fabric of the institute. Facilitators assumed multiple roles at times including that of expert, collaborator, organizer, motivator, support, sound board, problem-solver, and the list goes on. Other facilitators, such as the invited Wednesday keynote, were members outside of the institute, asked to contribute their perspective and expertise to the participants.

Implications for other professional learning spaces (e.g., in person, virtual, or job-embedded) include establishing a clear mission statement, goal, and or identity and then identifying and supporting the facilitators who align with those aspects. A mismatch or disconnect between a facilitator's personal values and that of the organization's values may disrupt the learning experience for attendees or result in unintended learning consequences (i.e., misconceptions and overly simplified ideas). Considerations should be made for anyone tasked with planning, facilitating, or possibly redelivering professional learning. This includes, having a common vision, sharing a common language, understanding core concepts and beliefs, and promoting the goals and values of the organization or institute. Patton et al. (2012) further suggest the importance of the facilitator's conviction, the importance of building meaningful relationships with attendees, visibility, and transparency throughout learning, and being open with both the successes and challenges of learning something new.

As a cautionary tale, bringing in outside guests and faculty not familiar with the vision and goals of an organization, may in fact work against the espoused messages or not align with goals. That is not to say an outside guest would not be valuable or an important perspective to

include, but there does need to be some consideration on what they believe and understand about the content and how they talk about that content.

Signature Pedagogies in Digital Literacy Professional Learning. Throughout the institute and through the activities, participants heard the language and put that language into practice in different ways. Participants' language shifts can be traced back to different features of the institute over the week, including signature pedagogies (Shulman, 2005). Signature pedagogies at the institute included inquiry-based practices consisting of design thinking challenges (i.e., Marshmallow Challenge and inquiry project), design studio workshops, reflective practice, and a celebratory project. This was similar with how McLain (2022) described a promising signature pedagogy in technology education that included project-based learning, consisting of design thinking, design studio, and design critique.

However, Shulman cautions signature pedagogies are not inherently good or bad. He argued that each signature pedagogy has its own strengths and limitations and that their effectiveness is dependent on the specific learning goals, context, and the needs of the learners. He goes on to suggest it is important to understand their strengths and constraints and use them appropriately to achieve specific learning goals. For example, reflection was a big part of the institute. We know reflection is valuable in professional learning because it allows participants to deepen their understanding of the content and connect it to their own experiences and prior knowledge. Through reflection, they can explore their own thinking processes and make sense of what they have learned, which then helps them retain and apply the information in their contexts. However, at the institute, reflection was possibly overused. Throughout the day and across the week, participants engaged in individual and group reflections, through different modalities (e.g., Flipgrid, discussion, written reflections). This gave participants an opportunity to express their

thinking in different ways and practice a new way of talking about digital literacy. While reflection is considered a valuable pedagogical practice, two of the participants found the amount of reflection at the institute "overwhelming" and "overkill". Janine said, "I don't think there is anything wrong with reflecting, but personally I think there's too much." This is all to say, reflection goes both ways, and anyone responsible for developing and sustaining professional learning should evaluate the current signature pedagogies and consider what changes and modifications might be useful to enhance the learning experience.

Limitations

The design of the dissertation was exploratory, seeking to understand more about participants and their language in a specific professional learning context. While this qualitative study provided a rich view of data and closer look at aspects of language and the context, it is not generalizable to other spaces of professional learning. However, it does provide further insight on specific features of professional learning such as types of activities and pedagogical practices, language promoted and distributed in a professional learning context, and how participants develop a professional language over time.

This study used a limited, convenience sample of participants from whom was available and who signed consent to participate. The sample included elementary teachers only and all participants identified as white, and female as reported on their survey. Unknown was whether the four participants were monolingual or bilingual. Additionally, participants chose to attend the institute and therefore already had a desire to develop their understanding of digital literacy. In a sense, they were open to new ideas and possible change. This may not be the case for other professional learning spaces that require participation, such as in school-mandated PD or district level PD. A larger, more representative sample would be useful to understand conceptions of

digital literacies across gender, race, culture, and linguistic diversity. Further, a sample of teachers attending required professional learning may provide additional information.

Another limitation is acknowledging the difficulty of collecting data and language from all spaces within the institute. I selected recordings from group keynotes (i.e., keynotes that all tier 1 participants attended), but had access to limited data from individual sessions (i.e., sessions that participants chose to attend individually). I could not ensure that the participants attended the sessions I had recorded so I omitted those from my data. Although there is evidence from post interviews and post survey results that participants attended sessions, not every participant identified what sessions they attended, nor did I have all the individual sessions recorded. Likely the daily, niche sessions and small group conversations impacted participants' language and conceptions of digital literacy as well. Furthermore, all four participants ended up in different areas of the institute depending on their needs and wants. While this is a positive feature of the overall design, it did not make it conducive to capture all their language or predict where they would be throughout the day. Asking participants to wear a microphone all the time would have been intrusive and taken away from the overall experience.

One final limitation is my subjectivity because of my prior experiences as a participant of the institute. I collected, analyzed, and interpreted data through my intimate knowledge and understanding of the institute. In order to check my bias, I used critical friends to offer their own interpretation of selected data without my influence or input. Hearing their interpretations and understandings of the participants' and institute's language helped me to rethink or confirm my thinking. My subjectivity was a distinct advantage in this qualitative study as it guided my initial decisions for my research questions, methodological approach, and analysis. However, this could

also be a hinderance in that I neglected to consider other possibilities and perspectives during analysis.

Future Research

Effective professional learning ultimately leads to change in teacher practices and student outcomes. This dissertation focused on the teachers' change during professional learning leaving an incomplete picture of how they enacted practices once they returned to their classroom context. Simply put, do teachers retain what they have learned once they go back to their schools? Further, how teachers enact their newly acquired skills and how they communicate and talk about digital literacies while teaching is a necessary next step, followed by how students in their classroom enact digital literacies.

Darling-Hammond (2005) suggests that effective professional development starts during teacher development programs. Although this dissertation focused on inservice teachers, further research in preservice teacher education development would be helpful to identify what types of signature pedagogies and activities help preservice teachers acquire conceptions of digital literacies and how they talk and enact digital literacies within their lessons. Preservice teachers may possess personal, practical experience with digital technologies and tools, but how they understand digital literacy and translate that into teaching and learning requires more strategic consideration. During their education coursework, preservice teachers are developing their foundational pedagogical content knowledge; an advantage inservice teachers had when they came to the institute. Although preservice teachers have some experience planning and enacting lessons, they are normally scaffolded and supported experiences, focused on practicing, and refining specific skills and techniques. How or if pedagogical content knowledge impacts their understanding of authentic and intentional planning or how digital and media literacies are

enacted in practice requires further investigation. In this case, considering what is most important for preservice teachers to acquire and develop prior to going into the classroom and then their transition into the induction years would be valuable to teacher education programs and professional learning geared towards novice teachers.

Further research should also focus on the design and formats of digital literacy professional learning to identify signature pedagogies and practices that support the acquisition of knowledge, skills, language, and dispositions. Further research should explore acquiring specialized professional language as an outcome of professional learning. Outcomes of professional learning typically focus on change in teacher actions and teaching practices as documented through their discourse and language or teacher talk in classroom spaces but shifts in language and how teachers develop a specialized language is largely contained to the academic language literature or second language literature.

Concluding Thoughts

The dissertation is full circle for me. I chose this inquiry in part because of my interests and experiences as an elementary teacher, trying to understand and enact technologies in the classroom, while at the same time trying to support my colleagues in how they might "use technology". I focused on technology how-to and what was required to get the tools up and running or what websites to bring into my classroom. I recognized both excitement and frustration from students and peers along the way but could not pinpoint how to change my approach to provide support. Although I was "aware" of digital literacies and had heard or seen the term used, it was not until I attended professional learning opportunities focused on understanding digital literacies that I started to think and talk differently to my students and colleagues. Changes to my approaches, techniques and my confidence followed suit. My

wonderings and interest in how teachers develop a professional language and how they develop conceptions of digital literacy inspired this dissertation.

Professional learning spaces can be a powerful catalyst for change. In this dissertation, participant change took many forms, and a noticeable change was in their language. The findings from this dissertation underscore the importance of professional learning, grounded in a sociocultural lens, to change how teachers talk about digital literacy. Participants spoke of the importance of planning intentionally and strategically, the affordances and constraints of including different tools, and their personal and professional responsibilities with technologies. They saw what could be, how to elevate voice, and how to think about literacies beyond a traditional construct. This included determining some of the inherent constraints of working with technology and digital spaces while also commenting on the need to be critical and savvy about where we get our information, how we produce and consider information online, and what children need to learn. Participants left the institute with a new way of thinking and talking about digital literacies and goals for moving ahead. It is my hope this dissertation informs future research in digital literacy and professional learning practices. As a profession, we need to move away from make-and-take workshops or training models that no longer serve us. Additionally, we need to home in on the different ways to develop the professional capacities of teachers, including a specialized language, that later transfers to classroom practice and impacts student learning.

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APPENDICES

APPENDIX A: INSTITUTE SURVEY EXAMPLE PAGE

PRETEST Coding Sheet, 2016 Summer Institute in Digital Literacy

Variable	ITEMS	SCALE
Demographic	**1. Please enter your First and Last Name.** **2. What is your birth date?** MM DD YYYY **3. What is your gender?** Female Male **4. How do you describe your race or ethnicity?** **5. What is your occupation?** **6. How many years have you worked in your current profession?** **7. Which program tier are you participating in?** Tier 1 (first time participants) Tier 2 (Leadership Track for returning participants) **8. How would others describe you in relation to digital literacy education?** Novice Beginner Intermediate Advanced Expert **9. Which category best describes your current work?**	

Figure A.1. Institute Survey Example Page

APPENDIX B: SEMI-STRUCTURED INTERVIEW PROTOCOL

Pre-Conference

Descriptive Information

1. Name
2. In what state or country do you currently teach?
3. How would you describe your school population?
4. What type of teaching position do you currently hold?
5. How long have you been a teacher?

Questions

1. What types of literacy practices are important for you as a teacher?
2. How would you explain digital literacies? What do you mean by _____?
3. What are your goals for yourself as a teacher in relation to digital literacies?

Post Conference

Descriptive Information

1. Name

Questions

1. Describe digital literacies. What do you mean by _____? Will explain further or would you give an example?
2. What do you need to know and understand more about digital literacy?
3. What is the role of inquiry in teaching and learning?
4. How does an inquiry framework help you think about planning for digital literacy?
5. Tell me your greatest success or learning this week. Your greatest challenge.
6. What parts or parts of the institute stood out to you or influenced your thinking this week?
7. At the beginning of the week, you mentioned your goals were…. Were your goals met?
8. What will you take back to your classroom?
9. What would you tell someone else about this institute?

APPENDIX C: IRB STUDY APPROVAL

UNIVERSITY of SOUTH FLORIDA

APPROVAL

May 18, 2022

Stephanie Branson
4202 East Fowler Ave
EDU 202
Tampa, FL 33620

Dear Mrs. Stephanie Branson:

On 5/17/2022, the IRB reviewed and approved the following protocol:

Application Type:	Initial Study
IRB ID:	STUDY004188
Review Type:	Expedited 5
Title:	Chasing a Moving Target: The Language of Elementary Teachers Engaged in a Digital Literacy Institute
Approved Protocol:	• HRP-504 - Record Review Protocol SBranson.docx;

Your study qualifies for a waiver of the requirements for the informed consent process for secondary analysis of existing data as outlined in the federal regulations at 45 CFR 46.116(f).

Within 30 days of the anniversary date of study approval, confirm your research is ongoing by clicking Confirm Ongoing Research in BullsIRB, or if your research is complete, submit a study closure request in BullsIRB by clicking Create Modification/CR.

In conducting this protocol you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

Sincerely,

Jennifer Walker
IRB Research Compliance Administrator