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UTILIZING STUDENTS' TECHNOLOGICAL KNOWLEDGE TO DEVELOP CRITICAL READING SKILLS AND DIGITAL LITERACY IDENTITIES

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UTILIZING STUDENTS' TECHNOLOGICAL KNOWLEDGE TO DEVELOP CRITICAL READING SKILLS AND DIGITAL LITERACY IDENTITIES

by

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A Thesis

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Dedication

I would like to dedicate this manuscript to my husband, Brian, and my three daughters, Fallon, Aurora, and Persephone. Without your support, encouragement, and grace, I would not have been able to complete this goal. Your unconditional love and acceptance of my claim on the dining room table and counter space allowed me to focus on getting my degree. Thank you for giving me the time, space, and understanding to pursue my goal. I appreciate the extra responsibilities you took on so I could focus on my work. Thank you for believing in me and encouraging me. I love you all very much, and I am thankful to have all of you in my life.

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Abstract

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UTILIZING STUDENTS' TECHNOLOGICAL KNOWLEDGE TO DEVELOP CRITICAL READING SKILLS AND DIGITAL LITERACY IDENTITIES
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This study aims to explore how teachers can purposefully integrate and connect students' digital literacy funds of knowledge into in-school digital literacy meaning making to enhance critical reading and thinking, and how it supports students' development of their digital literacy identity. The theories that guided this thesis were from New London Group, Freire, Gee, Knobel, and Lankshear. This was a qualitative research study that collected data from surveys, interviews, observations, and student work samples. Over the course of the study, students participated in a controlled choice research unit. Throughout the study, students received specific instruction on how to use multiliteracies and digital tools in order to create a final digital product. During the study, students gathered information from various sources, such as informational books, internet sites, videos, and graphic sources to answer the six posed research questions, and they collaborated with one another to share ideas, information, and understanding on the research questions. At the end of the study, students showed an increase in collaborative skills, critical reading skills, and technological knowledge. This study is relevant to primary elementary teachers because it shows that students need explicit instruction with digital tools even though they use technology everyday, and students need opportunities to become digital creators of content to share their ideas and understanding.

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Chapter 1

The Start of the Study

Introduction

I had been teaching for twelve years when the COVID pandemic hit the world. The pandemic shifted the way teachers, students, and parents interacted with school and learning. Many wonderful digital literacies were utilized in order to keep students engaged and learning, but these new tools did not prompt critical reading and thinking. I found that these new apps replaced worksheets, and it did not allow students to interact in a critical way. Students needed step by step instructions on navigating these apps, even though many of them had similar features of their video games. Students struggled with engagement pulling out important information related to a topic or idea.

Today, students are back learning in the classroom. Teachers are embracing digital literacies, yet I am noticing students do not use technology beyond the learning apps. In my second grade classroom, students use an online reading program called iReady, a reading skills program called IXL, and Google Classroom to interact with various digital literacies. I find many of the students know how to navigate digital literacies, but they struggle with pulling out information, questioning the texts, answering questions, producing digital products, and connecting ideas across digital literacies.

Story of the Question

In the one graduate class, we discussed reading identities and writing identities. It made me wonder how students see their digital literacy identities. Do they see the skills they use at home as reading and writing skills? I wondered if students could develop and

create their own digital literacy identities by connecting their at home- digital use to their in-school digital use in order to improve their critical reading comprehension.

As I was teaching my one second grade class, I noticed that they did not know how to pull information from digital sources. Even though they watch videos, they struggle with being able to recognize information related to questions or topics to help them gain an understanding. I noticed students utilizing the Google Classroom comments, but they would just write repetitive simple greetings. It had me wondering if they were communicating with one another through Google Classroom as they communicate through online games, such as Roblox, Among us, and Fortnite.

The way the students engaged with digital literacies had me wondering how they consumed knowledge at home and how they interacted with digital literacies outside of school. If students connected their knowledge of using different technology to in- school technology use, would they be able to increase their critical reading comprehension? If students receive purposeful digital literacy instruction and participate in collaborative engagement would they view themselves as a person who purposefully uses technology for knowledge and production in school and outside of school?

Statement of the Problem and Research Question

With the increase of technology, the definition of literacy is expanding and evolving. Texts do not contain separate forms, but digital literacies are multimodal including links, images, and sounds (Knobel & Lankshear, 2014). The New London Group (1996) explains that the purpose of education is to ensure that students gain an education “that allows them to participate fully in public, community, and economic life”

(p.60). In school, students need to work with digital literacies in a way that will develop skills to help them critically navigate consuming and producing information in society.

Gee argues (2012) students' engagement with digital literacies suggests it is not in the "right way" because it is not in the "context of critical thinking, making ties to content knowledge and the world, problem solving, and innovative thinking" (p.419). There is a passive consumerism of digital knowledge, and there is an assumption students know how to navigate digital literacies since they are possibly using them everyday at home. Students who do use technology at home are able to navigate the home screens, yet they are not transferring their digital knowledge in a critically reading context in terms of "help[ing] them to participate more fully within it in terms of knowing what to ask for, contributing knowledge and knowhow, and becoming more expert (Knobel & Lankshear, 2014, p. 100). They struggle with answering online questions, and they do not seem to transfer the technology skills that they use at home into school. With new digital literacies there is a need to examine and change the way we read, write, and communicate. There are new ways to create, consume, and collaborate with the technology, and there is a need for development of these new literary practices to replicate students' out of school everyday use (Knobel & Lankshear, 2014). If school instruction does not provide students opportunities to engage with digital literacies in purposeful and meaningful ways, they will not be able to critically question information and will continue to passively consume information.

There is an importance of seeing and understanding students as not lacking in areas, but interpreting the funds of knowledge brought from their life as relevant and useful tools to develop the instruction and learning in the classroom (Moll, 2005).

Teachers should develop ways to incorporate students' existing skills and knowledge and apply it to their learning and collaboration in the classroom. Purposeful and critical engagement has students question the actual content and creator of the content, while developing critical thinking to expand their questioning to the society around them (Freire, 1970). Students need opportunities to question, challenge, and think about the position of their knowledge in the way it shapes society, groups of people, and the status quo (Freire, 1970). Creating supporting environments that allow students to practice critical reading and thinking with digital literacies will allow them to experience and share knowledge in a variety of ways.

Statement of Question

The research question I plan to investigate is: What happens when teachers utilize students' out of school technological knowledge to engage in critical literacy and critical thinking with digital literacy?

The sub questions include:

1. How do students' out of school digital literacies cross over into in school technology use?
2. How does in school technology help in forming students' digital literacy identities?

Organization of the Thesis

Chapter two provides a review of literature surrounding the use of multiliteracies, new literacies, and funds of knowledge for teachers to integrate multiliteracies and new literacies in the classroom. It explores how teachers can utilize students' knowledge and skills as resources to support other students when developing critical reading

comprehension with these literacies. Chapter three details the design and context of the study. It includes the surveys and instruction, and it includes the information about the school and class of the study. Chapter four discusses and analyzes the data and research findings within the study. Chapter five discusses the conclusions and the impacts on teaching and learning.

Chapter 2

Review of the Literature

> "The multiplicity of communications channels and increasing cultural and linguistic diversity in the world today call for a much broader view of literacy than portrayed by traditional language-based approaches." (New London Group, 1996)

Introduction

With the expansion of technology and new media, there is a need to redefine literacy to reflect "the changing word and the new demands being placed upon people as makers of meaning" (Kalantzis & Cope, 2008, p.196). The definition of literacy expands beyond print and paper into multimodal texts that include audio, visuals, and hyperlinks and address the diversity of the language (Kalantzis & Cope, 2008). The changes within social worlds, citizenship, and identities need a change in educational and teaching practices (2018). Teachers' pedagogical practices need to adapt and include these critical digital literacy skills and social discourses. It can be very overwhelming with all the new apps and programs emerging at a rapid pace, especially with the new ways digital literacies challenge how information and ideas are shared. It is no longer an independent practice, but a collaborative process where the roles of reader and creator are shared.

Chapter 2 first presents a definition of multiliteracies and new literacies: what they are, how they evolved and why they are important. The first section also explores utilizing multiliteracies in the classroom and ways that teachers have changed their literacy practice. The second section discusses new literacies, and examines research that looks at the incorporation of digital literacies in and outside the classroom. It discusses

the new ways students interacted with new literacies and developed collaborative skills to create meaning and a product. The third section explores the role that multiliteracies and new literacies have in developing critical thinking. Finally, the chapter ends with a summation of research, the gaps within the research, and how this research informed the current study.

Defining Multiliteracies and Multiliteracies in the Classroom

In 1996 The New London Group stated the importance of a broader understanding of literacy and literacy instruction. In their new understanding and definition, The New London Group emphasizes the importance of going beyond print text and moving towards literacy instruction and literacy exposure to represent the "increasingly globalized societies… and the variety of text forms associated with information and multimedia technologies" (1996, p.61). The way to teach literacy can not just be in one way or in one form. Literacy pedagogical practices need to reflect "one in which language and other modes of meaning are dynamic representational resources, constantly being remade by their users" (1996, p.64). Literacy is no longer just print text, but literacy encompasses music, media, body language, pictures, games, trading cards, symbols, and many more possibilities. Another major component of multiliteracies is the context of the literacy and how the context changes the language and meaning of the literacy (2017, Sang). It is important to explore how students engage with multiliteracies and how it helps them expand their understanding of being literate. To support students with engaging in literacy in a new way, instruction must include the four components of situated practice, overt instruction, critical framing, and transformed practice (2017, Sang).

One study by Seglem and Garcia (2018) explores “the four pedagogical foundations of multiliteracies: situated practice, overt instruction, critical framing, and transformed practice” (Selgam & Garcia, 2018, p.56). In the study, the classroom teacher integrated student choice in classrooms to support inquiry experiences for students with multiliteracies. The study followed an 8th grade teacher and her students over an 8 week period while they were engaged in an inquiry Google 20% program. This program allowed students to explore a personal interest, connect with outside community members, engage with previous student mentors, and create and share knowledge with digital literacies. In this program the position of power of teacher and student are stripped, and teachers are not seen as gatekeepers of knowledge, but they transform into facilitators and expert novices to model to students how to navigate unfamiliar material in appropriate meaningful ways. While participating in these new roles, students become active learners especially in identifying what they did not know, how to ask questions, and how they need to learn the new information. Students also engage with literacy reflective of the global society in everyday life, and they practice collaborative meaning making strategies.

Another study by Sandretto and Tilson (2013) explored how teachers can connect students’ in and out of school digital literacies to enhance critical analysis skill to prepare them for their multiliterate future (Sandretto and Tilson, 2013). This was a two year project that followed nineteen teachers and five students from each of their classes. The participants and data were from a primary school, two intermediate schools, and a college from rural and urban areas. Based on the collective data from the participants from the interviews, videotaped lessons, and teacher presentations, it showed that students' critical

engagement with multiliteracies increased along with their language connected with multiliteracies (2013). An essential focus was on situated practice because it recognized students' literacy practices outside of school to enhance their critical analysis of multiple type texts (2013). It shows that when incorporating multiliteracies in the classroom, it is important to focus on the type of literacy students engage in their daily lives. The study utilized critical framing so students can think about their understanding of literacy, and teachers can rethink their literacy pedagogical practices. Teachers made literacy instruction meaningful as it related to the students' lives, and it allowed students to develop a deeper meaning and understanding of literacy and communication.

Another study from Burke, Butland, Robers, and Snow (2013) looked at collaborative practices with students and teachers to enhance literacy and explore the question of what does it mean to be literate in the 21st century. In this study, researchers followed 3 teachers taking a graduate level course on new literacies who taught students in grades 2, 5, and 6 over a period of 4 months, and the study focused on the situated practice and transformed practice of multiliteracies. Each teacher utilized a different form of multimodal digital literacy to allow students to express their creativity and understanding with various different digital literacy tools.

In the study, teachers shifted their pedagogical practice from one of a final product focus to one of a process of learning. This shift allowed teachers to integrate students' experiences with new literacies outside of school into the classroom, and it challenged students to think critically about the texts and presentation of ideas. In conclusion, teachers need to shift their teaching focus to a process approach rather than a product approach, move beyond standard textual practice, and incorporate a more

collaborative practice of sharing, discussing, and questioning ideas and beliefs. When interacting with multiliteracies Anstey and Bull write , “students are not aware of the ways in which technology shapes their literacy practices. Therefore they may not be using technology as effectively as they might. The more conscious students are of how they go about literature practices, the more strategic and effective they will be.” (Burke, Butland, Roberts, and Snow, p.50).

In each of these studies, teachers changed their literacy pedagogical practices, and they focused on incorporating students’ interests in their literacy instruction. Even though the studies showed that shifting pedagogical practices to “revolve around the relationships developed between students and teachers to guide the work toward critical framing” there has not been a shift in teaching practices to reflect this need (Seglem & Garcia, 2018, p.61). While each study saw improvement with students’ understanding of literacy and meaning making skills, there was a continuous theme of needing school and policy reform. There is a need “to enhance their critical analysis of multiple types of texts to prepare them for a multiliterate future” (Sandretto & Tilson, 2013, p.9). Teachers had a difficult time incorporating standard assessment needs in the multimodal responses (Burke). Yet, in order to do this, teachers need time to prepare and reflect to make these changes.

One study by Martens, Martens, Doyle, Loomis, and Aglharov (2012), explored multimodal reading and writing with picture books in a first grade classroom. It followed three teachers for a year, and within that year the teachers met weekly to plan, pick materials, and design lessons that enhanced literacy lessons with incorporation of art technique instruction (2012). This study explored how students could make meaning

from various modes besides print because "we communicate by talking, writing, drawing, playing music, using gestures…in particular spatial and cultural contexts to share meanings with others"(Martens, Martens, Doyle, Loomis, and Aglharov, 2012, p.286). It focused on making meaning with picture books since picture books require a reader to make meaning from various modes of visual, layout, design, movement in pictures, and text (2012). Students were given sketch books to aid them in brainstorming stories and to create artwork. Teachers used mentor texts to show how authors used pictures to convey meanings and messages; then they asked students to duplicate those techniques in their own products. To develop collaboration, teachers posed thinking questions to start conversations because their "talk after reading picture books increasingly demonstrated they were reading the art and integrating that meaning with the written text" (p.291). The findings showed that children can think and read multimodally, different medias can enhance, expand, and contrast the print, and reading multimodally allowed students to think critically (2012). These findings suggest that to properly incorporate multiliteracies in the classroom a teacher needs to address developing background knowledge around the important components of the particular media and link it with collaboration so learners can discuss their creative choices in the production of their own media.

New Literacies In and Out of the Classroom

Lankshear and Knobel (2014) explain the expansion of literacy to include "technical stuff" and "ethos stuff" (p.29). New Literacies include technology that have interactive and interconnected forms of production and can be viewed as needed (Lankshear and Knobel, 2011). It emphasizes the idea that it is more than doing old literacies in a new way and acknowledging new media, but it encompasses the social

practices with the use of the new media (Lankshear and Knobel, 2011). With the development and use of new technologies there is an emergence of new social practices in all parts of life, and these new social practices continue to quickly evolve and become prominent ways of communication. Gee connects social practices to literacies with his Discourse approach (1997, 2004, 2008a) by explaining " the richness of the relationship between literacies and ways of being together in the world" (Lankshear and Knobel, 2011, p.41). The changing of social practices extend to "involving new and changing ways to producing, distributing, exchanging, and receiving texts by electronic means" (p.28, Lankshear and Knobel, 2011). With the use and mixing of multiple texts to convey a message or information, digital literacies creates a collaborative approach with instant insight, reflection, revision, and validation of ideas and information. To interpret these new literacies, the Discourse and background knowledge become equally important for comprehension (2011).

One study explored students' social practices, meaning making, and critical reading skills through the use of the digital literacy instant messaging (IM). In Lewis and Fabos' (2005) study, they utilized 60-90 minute interviews of seven 14-17 aged boys and girls while they were using IM. Even though IM is considered an old digital literacy, the communication exchange is mirrored in other digital literacies, such as Tik Tok, Instagram, Google Classroom, blogs, reviews, and chat rooms. In this study, the researchers analyzed the conversation exchanges between the users and friends. The findings revealed that the participants engaged in creating a specific digital identity based upon who they were talking to in the chat, users made critical decisions about writing choice by expressing themselves through images, word choice, font, could follow

multiple story lines, and made decisions which conversations required more attention than others (2005). Students needed to have specific knowledge of the social practices in order to produce and consume the text in IM. The participants developed "social cues" within the IMs to denote if a conversation was "boring" or "satisfying" (2005, Lewis and Fabos, p. 482). It was important for students to understand how communication with IM was different from print text and verbal communication. Students needed to shift the way they 'spoke' to one another to include "nonlinguistic visual elements…ellipses to show thinking, and abbreviations, such as 'lol' and 'brb' (2005, Lewis and Fabos, p. 483). Participants in the Lewis and Fabos study engaged in complex language use and social cues. These complex decisions can be utilized to support complex literacy decisions in class. However, many argue "schools need not focus on such forms of literacy, but instead focus more on forms of literacy that students are less capable of mastering on their own" (2015,Leu, Forzani, Timbrell, Maykel p.40). It is imperative to view background knowledge and digital literacies are used not as separate skills but as connected to social practices of society to gain meaning and share ideas.

Another research study conducted by Creer (2018) explored young college aged students' use of digital literacies outside of school and their classes to help make meaning with groups. Creer studies twenty-four students over three years collecting interviews, discussions, texts activities and photographs. Students utilized more than one mode of text in order to convey an idea and meaning, such as the use of color, animated images, short messages, voice recordings, and comments(2018). In order to convey meaning and gain understanding, all participants must have a strong knowledge of the social practices with these new media. Further findings showed students mostly engaged with digital

media literacies, and these digital literacy practices were not reflected in college-assessed literacy practices (2018). There needs to be a shift in assessed literacy practices to complement students' social practices with digital media use so students know how to function in society with digital literacies appropriately.

Many college students saw that their digital practices at school and out of school were very similar, but upon further interviews students explained they did engage with different social media platforms in different ways at home than at school (Creer, 2018). These findings imply that integrating digital literacy practices, such as Twitter, within classrooms allows students familiarity to share their ideas and understanding in a recognizable social discourse setting. By bridging the gap between students' use of digital literacy out of school and having them engage with it inside of class to share and discuss literacy ideas in class, gives students the opportunity to connect their skills and knowledge. They can see how their knowledge is useful and connected to the social discourse of the in school digital literacy use.

A study by Marlatt (2018) explores how utilizing digital gameplay could engage students in literature and develop their reader identity. Marlatt follows one 12th grader in a non requisite course of basic communication and career readiness class. In the study, Marlatt utilizes the video game Minecraft for the study to create scenes from the book *Outsiders*. While the student created the scenes, Marlatt questioned the student about their scene creations based on the student's interpretation of the book. The study showed through the use of Minecraft the student was able to approach the text and explore the story's power dynamic, challenge societal roles, demonstrate plot comprehension, examine multiple character perspectives, connect story events to her personal life, and

support the examination of her own identity (2018). There are different modes for users. They can use Creative Mode which allows students to individually create without the interference of other players, and there is Survival Mode which allows students to join groups and represent the ideas of their novel group (2018). This type of engagement has students needing to know the Discourse of the video game in order to convey the meaning of the text and their understanding of the ideas being presented from the text. Marlatt encourages educators to integrate gameplay to support literacy engagement, and he explains that the norms of using digital gameplay will look and sound different than traditional engagement of print literacies, but this is encouraged because it supports students' growth and understanding (2018). This study suggests that teachers should expand their instructional practices beyond the traditional uses of print to convey understanding will support students in being able to navigate the new evolving literacies of society.

Another study by Mills and Exley (2014) examined an implementation of a multimodal and digital text writing program in four elementary classrooms in a low socioeconomic school. The researchers investigated how teachers and students use time, space and text when using digital contexts for writing that was less "expert-dominated" (Knobel & Lankshear, 2007; Mills & Exley, 2014, p.435). Over a two year period, they collected data on observations of students' participation and teachers' instruction, discussions with teachers, and students' work sample collection, and the data was coded with Bernsteinian categories of pedagogic devices (2014). In this two year period, researchers and technology experts taught teachers how to use Apple tech in after school workshops. After a year of instruction, teachers then started to integrate the multimodal

digital text in their instruction, but they had the support of the experts and researchers (2014). In this study, teachers changed their pedagogical practice by becoming co-teachers with researchers and shared their classroom space. Students learned "how to design multimodal and digitally written texts across a range of genres and text types… working individually and collaboratively" (Mills & Exley, 2014, p. 441). The participants in the study were integrating new media with new social practices of collaboration to create media, such as web pages, personal profiles, recounts, narratives, podcasts, and movies (2014).

In the program, students had no choice in the technology, but they did have choice on the collaboration and creation. Also, teachers became more confident in their instruction and integration of the multimodal digital texts, but the beginning of the multimodal digital text included procedures and routines, and it mostly consisted of the teachers taking the students step-by- step instead of independent free exploration of the multimodal technology (2014). Students need the background knowledge development in order to purposefully engage in a collaborative way with the new media. The study indirectly shows the procedural knowledge of new media supports the conceptual learning of the individual and collaborative creations of the new media (Shadowens, 2024). Yet, this collaborative new media writing does conflict with standardized assessment, so it does bring challenges for teachers to implement these practices within their classrooms (Mills & Exley, 2014). Further findings show that teachers need to change their pedagogical practices and understanding of the time, space, and text in order to "properly embed multimodal design into conventional literacy curricula," so teachers

would need to recreate classroom Discourse to bring about literacy instructional changes (Mills & Exley, 2014, p.464).

The Role of New Literacies and Multiliteracies in Developing Critical Thinking

Knobel and Lankshear (2014) argue that there is minimal ongoing professional development on how to integrate technology in critical ways in the classroom to teach students to read to learn or to become producers. The lack of continual professional development with engaging in digital literacies in purposeful and meaningful ways does not allow teachers to integrate critical thinking and critical reading with technology into their instruction, and they are unable to allow students to practice being critical consumers and producers.

Digital literacy requires conversation about using specific academic language and discussion about the learning context (Gee, 2012). Students' use of digital literacy requires them to be peer collaborative and engage within social practices to acquire and share knowledge (Knobel & Lanshear, 2014). A main purpose for practicing literacies is to bring together information in order to bring about change for society (Knobel & Lankshear, 2014, p.98). In order for students to focus on "social purposes", they need to engage with critical literacy and critical thinking and move beyond being consumers of knowledge. There is considerable research on utilizing digital literacies with classroom instruction and exploring the importance of new literacies to develop critical reading skills.

One study explores students' beliefs about knowledge and how it impacts their critical reading of online sources. Woodward and Cho (2020) studied 11th and 12th graders in an AP course. Through the use of transcriptions of students' think- alouds and

audio and video recordings, Woodward and Cho determined students were able to search for information, but the students were unable to transfer critical reading and thinking skills into online resources (Woodward, Cho, 2020). The study highlighted that teachers should not assume because students use technology and can navigate technology that they can apply critical reading skills into online resources, and they need to be aware of this when developing lessons so they are enhancing students' digital identities, digital skills, and critical reading skills.

Being able to recognize digital skills, and making critical decisions about integrating information from various sources is a critical skill. A researcher explored upper elementary students' reading and writing online activity. Hutchinson, Woodward, and Colwell (2016) used data from surveys, interviews, and Likert type scales to analyze the students' home technology use, discover how the students viewed their technology skills and knowledge, and how skilled they were at reading and writing online. This study revealed that even though schools were integrating technology into their classrooms at higher rates most of the interactions with technology were consumption activities not collaborative production activities. Also, students participated in more information finding activities in school than out of school because most students' out of school technology use was watching videos (Hutchinson, Woodward, and Colwell, 2016). There was a distant difference in beliefs of technological abilities between male and female students, and teachers play an important role in modeling and encouraging creative technology production (2016).

In the findings, males had a higher belief in technology ability in all areas. Yet, the lowest scores were in communicating information, even though students felt they

were skilled in using a computer (2016). Additionally, students felt watching television was easier than reading a book, but they found reading a book easier than finding information on the internet. The study did show that literacy and language arts teachers were increasingly integrating digital activities in school, yet most of these activities were consuming information and not participating in productive critical activities (2016). Even though there is an increase of digital literacy use, teachers seem to be using technology to replace worksheets, watching videos, submitting work online, and using websites (2016). Teachers need to make instructional decisions when it is optimal to integrate technology into their lessons so it is effective and allows students to engage in a productive critical way (2016). Continuous and further qualitative and quantitative research needs to be continued since technology continues to evolve at a rapid pace. Even though technology is evolving at a rapid pace, there is a limit on instructional time, and there need to be instructional choices to enable and enhance student learning with these new literacies (Leum, Forzani, Timbrell, Maykel, 2015). The instructional choices need to highlight "reading to learn" and how these digital literacies provide opportunities to learn from one another (2015, p.139).

One study by Husbye (2012) explored PreK- 2nd grade use of digital media and play with new literacies. This study followed two university run preschool classrooms, K-1 multiage classroom, and a K-8 elective filmmaking classroom at the same charter school over a year period. In the study, students engaged with the digital media in a variety of ways, but the biggest takeaway was the collaborative discussion and choices students made when using the digital media to represent their ideas and understanding (Husbye, 2012). In the preschool classrooms, teachers set the flip cameras up with tubs of

toys once or twice a week during free playtime (Husbye, 2012). Students had minimal instruction with the flip cameras, so students who had experience with the cameras happily shared their knowledge with the other students. In addition to sharing knowledge, students would record their play independently or with other students (Husbye, 2012). In the multiage K-1 classroom, forty-four kindergarten and first grade students integrated a collaborative writing workshop model with film to make students' stories visible (Husbye, 2012). Before engaging with the film making, students created individual storyboards about the possible story, then teachers put them into groups to create a visible story in film. Each student established a role in bringing the story to life by discussing props, story decisions, dialogue, and filmmaking choices (Husbye, 2012). In the elective filmmaking class, students used legos and film to tell a story. A group of boys collaboratively work together to create a stop motion film story. They made decisions about main roles, they thought about their knowledge in order to make production choices, and valued everyone's involvement (Husbye, 2012).

Although preschool students did engage with the flip cameras, there were power struggles between the students when students would try to intervene with another student's narration or recording session. This can be an example that at this age students are still learning the roles of collaboration and are developing the critical lens. Additionally, the preschool students' interactions did not demonstrate collaboration but more of the "voice of individual" expression (Husbye, 2012, p.84). On the other hand, in the multiage K-1 classroom, teachers engaged within their own collaborative practice to create these lessons, and they questioned their own writing pedagogical practices and what accountability looks like within a collaborative process, so students would be able

to engage within new literacies and share their perspective on how the story should be shared and even considered the reader's perspective when engaging with digital story. Whereas in the film making elective class, students did not need to start with producing a script. Students were allowed to jump into their filmmaking process and change choices when faced with obstacles. Even so, students were able to think critically about what they knew and how it could effectively support them in their process of creating their story for film. Overall, the students did engage with critical thinking and making critical reading decisions. With this in mind, it is important to consider whether preschool to 2nd grade teachers may need to change their understanding of what it means to be critical students at this age. It is important to consider students are taking a critical inquiry approach when developing their ideas because they are listening to others, collaborating, considering other perspectives, and seeing each other's ideas and involvement as valuable to the development of the process.

The New London Group state "[education's] fundamental purpose is to ensure that all students benefit from learning in ways that allow them to participate fully in public, community, and economic life" (Cazdem, Cope, Fairclugh, Gee, 1996, p.60). Teachers' pedagogical practices need to incorporate the skills needed to navigate multimodal texts and connect students' culture with the culture of learning. Students develop the discourse of these Designs by working with the various forms of new literacies, and it supports their meaning making process (Labbo & Ryan, 2010). In Husbye's study (2012), students were working with a variety of multimodal texts to Design meaning, and they collaboratively redesigned their meaning making and utilized a new literacy to share their new perspectives. This process allows students to benefit in the

collaborative process similar to society, and it gives them an opportunity to engage within critical consciousness.

There is a balance of overt instruction, situated practice, and critical framing in order for students to participate in the Design and Redesign process of meaning making. The development of meaning making comes from an established community where "all learners are secure in taking risks and trusting the guidance of others- peers and teachers" (Cazdem, Cope, Fairclugh, Gee, 1996, p.85). Teachers engaged in the collaborative process when evolving their pedagogical practices (Burke, Butland, Roberts, Snow, Seglem, Mills, & Marlatt), and they utilized instruction as a form of scaffolding instead of "direct transmission" (Cazdem, Cope, Fairclough, Gee, 1996, p.86). In order for multiliteracies and new literacies to integrate successfully, teachers needed to evolve their pedagogical practice and understanding of literacy. Yet, the presence of standardized testing prevents teachers from completely engaging students' 'growing mastery" into complete understanding of their knowledge in relation to social practices (Cazdem, Cope, Fairclough, Gee, 1996, p.86). The two teachers left their students multimodal work unfinished because these types of multimodal texts are not assessed in standardized testing (Mills & Exley, 2014). Standardized testing does not utilize various multimodal texts because there is not an inexpensive way to assess this type of multimodal writing, so teachers feel a strong need to prepare their students for success with the government mandated standardized tests (2014). The New London Group does not mention the influence of government mandated standardized testing, but they do discuss how the changing of working culture and life impacts schools' mission and culture (1996).

Much of the work students engage in with multiliteracies and new literacies do not replicate the content within standardized testing. Multimodal tasks required students to participate in creating and posing "authentic questions, research answers in multiple means, and use technology in authentic ways" (Seglem & Garcia, 2018, p.58). As students developed their discourse and design through the use of multimodal texts, they engaged with collaborative meaning making to establish similar and consistent representation of ideas to ensure meaning making and understanding of information (Baker, Labbo & Ryan, 2010). Students creating images with the Minecraft game, language representation in IM, creating films with various props, and creating an app show an understanding of discourse in order for others to create meaning from this redesign process (Burke, Butland, Roberts, Snow, Mills, Exley, 2014, Lewis, Fabos, 2005, Marlatt, 2018, Husbye, 2012, Lee, Soep, 2016). Changing pedagogical practices and reshaping understanding of literacy is difficult, yet these shifts demonstrate a growth in collaborative meaning making and critical consciousness.

Conclusion

The literature suggests that integrating multiliteracies and new literacies in the classroom show a substantial shift in teacher and student collaborative engagement. Teachers become a supportive leader, and students begin to become proactive learners and producers instead of passive consumers of information. This shift is imperative to support students in navigating society. There is an assumption that since students use digital literacies in their everyday life then they should be able to navigate digital literacies in school with no issues. However; it is important for educators to understand that usage does not mean students will be able to engage with digital literacies in school

on a critical level (Woodward, Cho, 2020). Additionally, teachers need to be critical in the ways they integrate digital literacies in the classroom, and shift their understanding from one of a product to a process to elevate students' critical consciousness. Integrating digital literacies is valuable, but there is a lack of how teachers capitalize on students' personal digital literacy knowledge in order to connect those skills to support and develop in school digital literacy knowledge. Furthermore, in early primary grades there needs to be further exploration in understanding critical reading and thinking, these look drastically different among these students.

This study aims to explore how teachers can purposefully integrate and connect students' digital literacy funds of knowledge into in-school digital literacy meaning making to enhance critical reading and thinking, and how it supports students' development of their digital literacy identity. It is anticipated that supporting this connection will aid in developing students' critical consciousness of meaning making and become aware that they are knowledgeable and proactive learners in their development of meaning making.

Chapter 3

Research Background

Introduction

This research explores students' technological use out of school and teachers capitalizing on this knowledge to improve critical reading comprehension to develop their digital literacy identities. The way students interact with literacies is evolving because technology access is evolving and increasing. Students need to learn how to critically navigate in a world with digital literacies. To explore how to utilize students' funds of knowledge, I used pre and post surveys about technology use and knowledge, weekly surveys about new technology knowledge, weekly interviews about technology use and comprehension, and observational notes.

In this chapter, the context of the study and research methodology will be discussed. In order to protect the identities of the research participants, the community, school district, and student population will be described with pseudonyms. Towards the end of the chapter the data collection and data analysis methods will be explicitly detailed.

Research Design

In this study, I utilized a qualitative teacher research design. Qualitative teacher research is an inquiry based way to explore and understand a concern or curiosity teachers have about their instruction, students, classroom, and/school (Klehr, 2012). It allows teachers to explore possible causes to the personal concern, and the research allows teachers to pose possible solutions to navigate the need. Klehr (2012) argues "qualitative methods offer a strong complement to numerical measures, allowing one to

more comprehensively study how teaching and learning happen in dynamic classroom contexts" (p.123). Teacher research provides a deeper insight into outcomes by offering possible causes, and it offers a critical view into pedagogical methods.

The process of qualitative research occurs in six steps. Stremmel (2002) explains the teacher research process as "The Cycle of Teacher Inquiry" which includes a teacher or teachers identifying a problem in the classroom/school, creating questions to explore, choosing a theory to frame and support the inquiry, gathering data, analyzing data, interpreting the data, and changing pedagogical thinking and practices. These steps can be done individually or as a group with the goal to understand the pedagogical methods and learning from inside the specific classroom or school (2002). The purpose of my qualitative research study is to "attempt to create new knowledge, or what may be called local knowledge, about teaching and learning that will contribute to improving classroom practice" (2002, Stremmel,p. 2). Teacher research is relatable to educators so educators can make connections, transfer interpretations into their own practice and classroom, and challenge their own pedagogical bias practices.

This research study is conducted within a 2nd grade classroom. The research for this study will be qualitative because the data will be collected from surveys, interviews, observations, and student work samples. To interpret the qualitative data for this qualitative teacher research, there will be a 5 point Likert type scale for students to evaluate their technological skills, rubrics to interpret work samples for critical thinking and critical literacy skills, and coding of interview answers and teacher observational notes.

Context of the Study

Community

The community in which the study takes place in a suburb in New Jersey is located outside the Philadelphia area in Camden County. According to the National Center for Education Statistics, 2, 902 people live in the suburb. The population consists of 45% Hispanic, 29% Black, 16% White, and 7% Asian (2022). In the community, 95.1% have broadband internet connection.

In the community, 88.3% of the structures are single family homes and 11.7% of the structures are apartments or other structures. Within the community, there are a total of 836 households with a median income of $64, 808, but the median household income for parents with students in school is $71,805. Inside the community population, 17.5% live below the poverty level and 28.2% receive food stamps/ SNAP. In the community population, the households consist of 43% married households, 24% cohabitating couples, 21% female head of households, and 12% male head of households.

District and School

There is only one school for the district. It serves pre-kindergarten through 8th grade. Students within the district go to another neighborhood for high school, grades 9-12. The students are bussed to the neighboring high school.

According to the National Center for Educational Statistics, Elm School District is a Title I school educating pre-kindergarten through 8th grades. It has a total of 398 students with 44 teachers making the teacher student ratio 9.05. The student population consists of 231 Hispanic, 111 Black, 36 Asian, 14 White, and 2 identifying as two or

more races. In school, 277 students qualify for free lunch, and 20 students are eligible for reduced lunch.

Classroom

The study takes place in a second grade classroom consisting of 21 students. The classroom student population consists of 6 African- American students and 15 Hispanic students. Within the participants of this study, 5 students are classified multi- language learners, and 3 have IEPs. All students have an in- school computer, and they will have a technology class one day a week.

The multilingual and special education students receive push-in reading and writing support for 40 minutes 4 times a week. The multilingual learners receive pull out services 40 minutes 2 times a week. They work with a speaking and listening program called Grapeseed. The special education students receive push-in math support for 4o minutes 4 times a week.

Procedure

Data Collection Methods

This study looks into understanding how students use technology outside of school and compares it to how students use technology in school. It explores how to connect students' out of school technological knowledge to in- school literacy lessons, and to develop students' digital literacy identities: how they see themselves as readers and writers with digital literacies. The research study aims to incorporate multiliteracies theory and new literacies theory in order to elevate reading and writing instruction. It should not be assumed that just because students are growing up with technology it makes them knowledgeable. In order to utilize students' knowledge to incorporate within reading and writing lessons, their technological baseline knowledge and use

needs to be established. Throughout the study, students' thought processes and connections will be verbalized through interviews and observations. To gauge their ability to put together information from multiple sources, students will answer six specific research questions related to their research topic. They will produce a digital informational book to share their findings.

At the beginning of the study, students will participate in a survey about their technology use and ownership. The survey will include questions and topics about the different types of technology the students use, how often they use technology, and how they primarily use technology. The second survey, a 5 point Likert- type scale survey with topics and questions taken from the Digital Skills for A Global Society digital questionnaire will ask them to rate their technology knowledge, digital literacy identity, and digital skills (Digital Skills for a Global Society, n.d.). This 5 point Likert- type scale will help to determine how much technology and digital literacies are a part of their life and their ability to navigate technology.

Over the course of the study, students participated in a controlled choice research unit. The unit focused on choosing a particular bug to research, and students answered a total of six research questions. Students gathered information from various sources, such as informational books, internet sites, videos, and graphic sources to answer the six posed research questions on bugs. Students collaborated with one another to share ideas, information, and understanding on the research questions. At the end, they created a digital informational book to share with peers and adults in a writers' publishing party. Throughout the study, students received specific instruction on how to use multiliteracies literacies to identify relevant information related to the research question.

Besides specific literacy instruction, students received specific instruction on how to use digital literacies to gather information and to produce a digital product to share information.

Each week students will receive specific literacy skill and strategy instruction, and they will receive digital literacy instruction on how they can take that skill and strategy and apply it to reading a digital text. The first week focused on students finding information on the research topic: What classification is your bug? Literacy instruction focused on how to identify a main topic, find key details related to a main topic, and how to pull information from a video. The digital literacy instruction focused on how to apply the strategy of breaking a text into smaller chunks in order to find relevant information. Students were taught how to connect asking and answering questions while watching a video by breaking the video into smaller chunks. The second week of instruction focused on answering the question: How does a bug get what it needs from its ecosystem? The lessons focused on identifying important details from interesting details. In technology, students learned how to use keywords from the research question and main topic in order to search for relevant information related to their research question. In the third week, students focused on answering the research question: How does your bug's adaptations help it survive in its ecosystem? The literacy instruction focused on being able to read text features and graphic sources. To enhance the literacy instruction, the digital literacy instruction focused on how an author uses photographs and diagrams to add important key details to the text. Students learned how to look at images on websites to identify facts related to the main topic and research questions. Instructional weeks four and five focused on practicing these reading skills and

strategies with multiple sources. The digital literacy instruction switched from students learning consumer skills to learning producing skills, so students could begin to create their digital informational book. These weeks focused on students using the digital tool of Google Slides and the various elements within Google slides in order to create an informational book to share their understanding of the research unit. Students learned how to add images, create informational paragraphs, create a table of contents, diagrams, create a glossary, create an index, and collaboratively edit and revise one another's books.

Table 1

Instructional Focus

Instruction	Week 1	Week 2	Week 3	Week 4	Week 5
Research question	Characteristics: What classification is your bug?	Needs: How does your bug get what it needs from its ecosystem?	Adaptations: What adaptations does your bug have? How do these adaptations help it survive?	Social and Group Behavior: How does your bug interact with other bugs?	Ecosystem Dynamics: How does your bug help the ecosystem?
Reading	Identifying a main topic	Identifying important details from interesting details	Reading text features and graphic sources	Adding key details with text features and graphic sources	Important information with bold words, glossary, index
Technology	Taking notes while watching a video Using keywords from a question and main topic to search for information Using search headings to find a relevant site	Connecting information from more than one site Using headings to find important information related to a main topic	Reading photographs, pictures, and diagrams on a site and internet?	Creating a Google Slide Adding text to a Google slide Adding images and diagrams Enhancing images and diagrams	Adding organization and extra information Peer editing and revising

While students navigated the various multiliteracies, I took notes in my teacher journal. I focused on how they utilized the print and digital texts, repeated vocalized frustrations, and requests for help. As a student was engaged in a digital text to search for information, I asked questions about how they choose where to look, how they navigated the technology to find the information, the reading skills and strategies applied to identify relevant information from the digital literacy, what did they find easy or difficult, and did this information help them understand the topic. Each week, students completed a survey questionnaire about what they learned about technology either from me or the technology teacher, whether they find the lesson easy or difficult to help them with reading and writing digital or print texts, and how the lesson helped them with reading and/or writing.

Data Sources

There are multiple data collection methods in this study. The first method of data collection is a 5 point Likert scale with questions and topics pulled from the *Digital Skills for a Global Society questionnaire* (Digital Skills for a Global Society, n.d.). This questionnaire created by Dell and ISTE, specifically questions learners, educators, and caregivers about their digital knowledge. The questionnaire focuses on specific skills, such as: locate content, evaluate content, interpret information, express ideas, communicate with others, and navigate technology ecosystems (Digital Skills for a Global Society, n.d.). A sample of the survey can be found in the appendix. Students participated in a three- question weekly survey. They were asked: What did you learn about technology this week? Did you find the lesson skill easy or difficult? and How can this help you with reading and/or writing? A sample of this survey can be found in the appendix. Each week students answered a research question. They gathered information

from various sources, and they had to create a digital product to share their understanding. Samples of students' work can be found in the appendix. Throughout the study, students participated in interviews about their use of digital tools, and I gathered observational notes in my teacher notebook, and samples of the students' responses can be found in the appendix.

Data Analysis

The methodology used to analyze the data was narrative analysis. In narrative analysis the researcher writes interpretative insights and understandings from the examined data (Hubbard and Power, 1999). While the students worked gathering information from various sources and creating their informational digital literacy, I took observational notes on their interactions with peers and the text, conversations, and students' behavior.

To analyze all of the data, I used coding and memos. In order to identify common themes, I charted students' responses and grouped similar responses together. I coded teacher observation notes and interviews for similar themes, and I wrote memos about similar patterns on how students read digital literacies and created their digital literacy. These similar patterns and themes supported me in identifying areas of development and need of instructional support.

After gathering all the materials and developing an interpretation, I used triangulation to find common themes. Hubbard and Power (1999) explain that triangulation uses at least three methods, sources, investigators, or theories to support findings. The data sources are from surveys, interviews, student work, and observational notes. The data sources were used to create a narrative of students' technological

knowledge, and the way students used their technological knowledge to consume multiliteracies and create an informational digital product. Since the main focus was to examine how students utilized digital tools to obtain information, I kept notes on how students interacted with multiliteracies with the use of digital tools to be critical consumers and producers.

Conclusion

In the next chapter, I will discuss the data analysis from the research study. The chapter will explore the common themes found within the data.

Chapter 4

Findings of the Study

Introduction

Chapter four addresses the research question: "What happens when teachers utilize students' out of school technological knowledge to engage in critical literacy and critical thinking with digital literacies in school?" and examines the intersection of out-of-school literacies and in-school literacies and how knowledge of digital tools used at home connects to and impacts critical reading and comprehension of multiliteracies in school. The chapter addresses the major findings of the study: 1.) need for explicit instruction on using digital tools and reading multiliteracies; 2.) students integrate skills from various literacy contexts; 3.) developing confident collaboration skills; and 4.) shifting digital literacy roles from consumer to producer.

Revisiting the Study

As stated in Chapter 3, the students participated in a controlled research unit in which they were able to pick a bug to research. In the research unit, students used several sources to find the answers to six posed research questions. Students collaborated within partners and groups to share facts and information related to the six research questions. At the end, students created a digital informational book using the technological tool Google Slides to share with peers and adults. Throughout the research unit, there were specific lessons on literacy, how to use digital literacies, and how to use Google Slides to create an informational text.

In order to have an awareness of students' specific skills and experience with technology, there was an initial survey on technology knowledge and out of school

literacy use. Then there were weekly surveys about the technology lesson and how students could use that to help them with in school reading and writing. These questionnaires were analyzed to find similarities, consistencies, and patterns with technological device use, amount of time with technology, and connections of technology with reading and writing. Through interviews, teacher observations, and conversations, I gained insight into the critical reading decisions students made while using digital texts and various sources to integrate information to answer the research unit questions about their bug topic. Also, I observed the critical thinking choices students made while using technology to create their digital product. Finally, I looked at students' work samples to determine how students were able to use their knowledge and skills to create their own digital product.

Need for Explicit Instruction on Reading Multiliteracies and Digital Tools

At the start of the study, I thought that since students used technology in their everyday lives they would be confident and independent with the various digital tools to produce a digital product. Yet, the initial technology knowledge and use survey showed that their at home technology use did not match their at school technology needs. In school, students are required to critically engage with multiliteracies and digital literacies. The initial survey showed that 53.8% of students had a gaming system and 46.2% did not have a gaming system; yet, 100% of students played games on a phone and/or tablet. Out of the 12 participants only 1 did not use any apps, and the most popular apps were TikTok and Youtube. While using these different technologies, 38.5% use them alone, and 46.2% use them with someone else, such as a friend or family member. Students are working with people to play games and/or watch videos, but they are also spending a significant

amount of time independently engaging with technology without discourse and processing. The pre-data from the initial technology knowledge and use survey showed me that even though students are playing video games at home, they needed specific instruction on specific digital tools to produce a product and explicit instruction on how to use technology for a critical purpose to share information and understanding on a topic. They needed an opportunity to not just acquire knowledge and information, but create a product that would allow them to share their knowledge with others. Participating in a research unit would allow students to gather information on a topic, to integrate related details from several sources to formulate a constructed response, and create a published product to share their understanding with others.

In the very beginning of the research unit, I found students were able to read the research question and the informational text, but they did not understand how to critically read the questions or text. Along with that, I observed students struggling with integrating information from various sources to formulate a response to the research questions. Students struggled with using all parts of text such as pictures, diagrams, charts, maps, and videos to identify relevant information related to a topic.

There needed to be explicit instruction on how to read a question and pull out the topic and use the topic to guide their research. The first lesson focused on how to critically read a research question, so students could practice being able to critically read the other five research questions. The first question focused on first classification: What type of bug do you have? How do you know? At the beginning, many of the students said the specific name of the bug, such as “ladybug,” “spider,” “grasshopper,” “beetle,” and “dragonfly.” By the end of the week, I noticed students were able to identify the type of

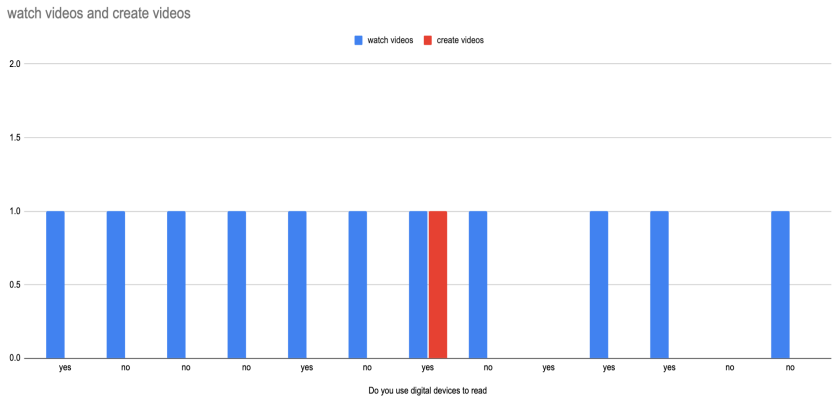
bug as an arachnid or insect and explain their rationale using specific features of the bug, such as number of legs, number of body parts, and other body parts. At the start, one student shared with me that they could not find any information to answer the question What type of bug do you have?

Caleb:	I can't find anything in my book.
Mrs. McGraw:	Can you show me where you looked?
Caleb:	(opens his book and points to the sentence)
Mrs. McGraw:	Is there anything else you can use in the text to get more information?
Caleb:	I can look at the picture.
Mrs. McGraw:	Good, tell me what do you see in the picture?
Caleb:	I see that the bug has legs. It has these on their head.
Mrs. McGraw:	How many legs does it have? What are those (points to the antenna) called? What can we use to help us understand this information?
Caleb:	I have the chart we filled out about the different parts of bugs.
Mrs. McGraw:	Yes, we can use that to help us understand the information from the text and picture. What does it say?
Caleb:	(pulls out chart) It says an insect has six legs, and an arachnid has eight legs.
Mrs. McGraw:	How many legs does your bug have in the picture?
Caleb:	(counts the legs in the picture) It has six.
Mrs. McGraw:	So, what type of bug is it?
Caleb:	It is an insect!

The next step after gathering all of the information from the various sources was to begin creating their Google Slide informational book. Based upon the initial survey results shown in figure 1, all participants use technology to watch videos, but only one participant uses technology to create videos. This suggests that the participants are passively consuming video content, but not participating in creating or producing their own content. This data shows students needed explicit instruction in how to take information and use it to create a purposeful product to share understanding and knowledge. To participate in this process, students used the technology tool Google Slides app to create an informational text. At the beginning, I observed many students exclaiming “I don’t know what to do!” or “How do I do this?” It required me to reassure students that I would take them step by step to learn how to navigate the various tools within Google Slides to help them create their informational book. The initial explicit instruction lessons focused on navigating Google Slides and the tool bar, so students would be able to make critical thinking decisions on the best way to display the information in their informational text.

Figure 1

Students Using Technology to Watch Videos and Create Videos



One lesson required students to use the lines, text boxes, images, and typing tools within Google Slides to create a life cycle diagram on their bug research topic. The first step was teaching students how to read a diagram.We practiced reading many different life cycle diagrams. We discussed how published authors use different elements to share important information, and we discussed how we could create our own life cycle diagrams. At the start, students were able to identify the title and describe the basic details of the photographs, but they struggled with matching the information from the text to the diagram. I would ask students "What is this stage of the life cycle called?" and many of the responses were "I don't know." I needed to prompt students with "what can you do to find that information?," and students would respond with "rereading." Students knew they could find details in the text, but they did not initiate the action without prompting. Once students had the practice, they were able to discuss their findings. In groups, students shared the different life cycle diagrams found in their texts with one another, and they discussed what was different and the same about their bug's life cycles.

In one group conversation between students who had various bugs, they were able to identify the difference between who laid the eggs among their bugs.

Nick: I have a spider. They make an eggs sac, which is like thousands of eggs in this sticky ball.

James: Oh, I have an ant. Only the queen ant lays the eggs. There is only one queen, so not all the ants lay eggs.

Kim: I have a bee, and bees have a queen too. The queen lays all the eggs.

Angela: I have a butterfly. The butterflies lay the eggs.

These groups of students read their text and matched the text to the diagram and the various elements of the diagram to gain a deeper understanding of the specific bug's life cycle.

Students practiced critical thinking by making decisions on how to best display information in a diagram by drawing out their life cycle diagrams on paper first. Then, I modeled how to recreate their life cycle diagrams using the features on the toolbar in Google Slides, so students could learn how to transfer their diagram from paper into a digital text. In my teacher observation journal, I noted many students were able to duplicate the modeled steps, and they were focused on making critical choices on how to show the specific life cycle steps of their bug in a diagram. While walking around and providing support, students did call out when immediately facing a struggle with the tools or technology. One such student Heather would get frustrated and state, "This is too hard." In those moments, I would need to support Heather in the product she was trying to create.

Mrs. McGraw: What are you trying to do?

Heather:	I am trying to get my arrow to show the next step in the life cycle, but I can not get it to turn.
Mrs. McGraw:	Oh, I can help you with that. You want to click on the arrow so it is highlighted. This shows that it is able to move. Now you want to click on your mouse and hold while you move the arrow into position (moving the arrow). Now, you try.
Heather:	(student manipulates an arrow on the screen. Smiles as she is able to move the arrow and put it into position). Thank you.

These interactions showed me students were able to articulate their challenge, knew the specific information they wanted to show with their product, but they were struggling with navigating the tools. Students needed explicit instruction and support to navigate the tools in order to create their product.

In my teacher observation journal, I noticed students carefully choosing particular images to represent and/or enhance the text information on their slide. This skill relates to explicit lessons on graphic sources such as diagrams, photographs, charts, maps, pictures, and timelines. The lesson focused on how to read graphic sources, analyzing the way graphic sources relate and support the text, and choosing the best graphic source to support information. Figure 2 shows a sample of a student carefully choosing different types of spiders to enhance the reader's understanding of their research bug topic of spiders. The student used keywords to search for images related to a specific topic to include in their informational text to enhance a reader's knowledge and understanding. The student considered the information in writing and carefully selected images to supplement their writing.

Figure 2

Student Adding Images to Enhance Writing

By the end of the research process, students were no longer saying "I don't know," but they were excitedly sharing their critical choices they made to show their understanding by stating "Look, Mrs. McGraw. Look how I created my food web!" or "Mrs. McGraw, see this picture of my ladybug?" I found my students were familiar with technology, but they could not see how their specific technology knowledge used outside of the classroom transferred to in-class digital technology assignments. I found that once students saw how to utilize all parts of print and digital text to extract information, they showed they could critically read by looking for specific details from text and illustrations to help them create a response to answer a research question. By the end of the study because of the explicit instruction, the data showed students were able to make critical decisions on how they wanted to share their understanding on research questions, then independently engage with minimum to no guidance with the Google Slide tools to create their research slides.

Students Integrating Skills from Various Literacy Contexts

The first week of the study students needed to reflect on their digital knowledge and skills they had to navigate different technology. Students reflected on their abilities to navigate videos, use technology to create videos, ability to use technology to create a message for others, and navigate different games to complete a task. The research unit required students to be able to use similar skills, such as identifying key details related to a main topic through different types of literacies, integrate information into different contexts to display understanding, and evaluate information. While taking the survey, it required students to not only think of each separate task, the skills for each task, but how the skills connect to the different tasks. The data displayed in Figure 3 and Figure 4 shows how some students were not able to connect the skills of typing messages to their friends and typing on the computer. These students were unable to connect that these two tasks required similar skills and knowledge, and they were unable to see how being able to do one would help them with another task. The charts reveal students would need assistance in connecting literacy skills across the various literary contexts in the research unit to help them gather information and share their understanding in their own writing. Students saw these lessons and skills as separate and not connected.

Figure 3

Students' Ability to Type of the Computer

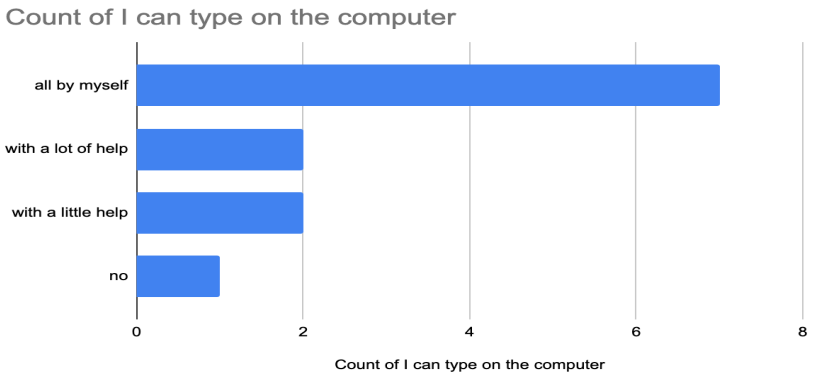
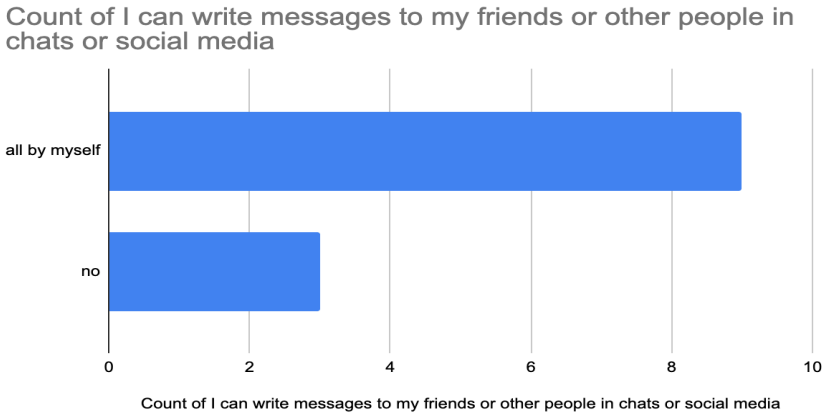


Figure 4

Students Who Can Write Messages



In the first week, we learned how to critically read a question by identifying the topic, so we knew the specific key details to look for in the various literacies. Yet, students needed to know how to organize the information in a graphic organizer. We used a core text to gather background information on the specific research question topic. Another lesson focused on how to critically read the headings in a graphic organizer and

make a critical decision on where to place the information found into the graphic organizer. The first focus was on classification, and a copy of the graphic organizer can be found in the appendix. Students learned to use headings and subheadings to assist them in finding information in text and digital literacies, but students did not connect this same strategy to guide them on where to place information within a graphic organizer. I modeled my thinking while gathering information from various sources, then modeled making critical thinking decisions on where to place the information within the graphic organizer by focusing on the headings in the chart. After the model, I instructed students to find information for the next sub-topic focus: body parts. Even after the model, students struggled with connecting using the headings to support them in organizing similar information in the chart. One student Sara needed extra support in using the headings to help her in finding relevant information and organizing similar information together.

Mrs. McGraw:	Why did you place this information about wings here? (points to box that is under the heading body parts)
Sara:	Because they have wings on their body
Mrs. McGraw:	Look at your graphic organizer. Is there a different place it could go? What can we look at to make sure we are putting information with the appropriate topic?
Sara:	(looks at her graphic organizer for a minute) Wings?
Mrs. McGraw:	What did you use to come up with that response?
Sara:	(student points to the heading at the top of the column labeled wings).
Mrs. McGraw:	What is that called?
Sara:	A heading.

Mrs. McGraw: Yes, remember we learned headings are at the top of a section and they tell readers that most of the information will tell them more about the topic. We can use that to help us decide how to best organize information with different subtopics.

At the end of the period, I went back to check on Sara's graphic organizer, and she correctly organized the rest of her key details within the appropriate topics, and she could explain to me her critical thinking choices of placing those details in that specific section using the headings as her guiding point.

In the group session, I observed students reading, but some students were not following along while other group members were reading. I had to stop the class, and I had to ask "what do we do when we are not the ones reading aloud? What do we do when Mrs. McGraw is reading aloud?" One student responded with "we follow along." Then I needed to have students think about what following along looks like while someone else is reading. Students needed the guidance of using their reading finger and tracking while they read independently as a skill they could use with listening to follow along while someone else was reading aloud. By the end of the research unit, I observed a majority of the class was tracking while partners or groups were reading aloud, and I needed to provide minimal redirections. These lessons revealed students needed assistance in seeing the interconnectedness of their various literacy skills in the various contexts of the research unit, but once that connection was established many of the students displayed they could utilize the skill in the new context without prompting.

Besides receiving specific technology lessons with Google Slides from me, the students have technology class once a week from another teacher. Students did not know how their specific lessons in technology class or the lessons on using Google Slides could

help them in reading or writing. In the first week of the reflection survey, ten students responded with "I don't know," but by the end of the study more students were able to connect the technology lessons to helping them with their reading and writing. Sara described in her week 2 reflection survey that she learned how to play a codable game in technology class with the technology teacher. Learning to play this game helped her with reading and writing because she had practice looking at pictures to help her make decisions. Even though Sara was not playing a game in the research unit, Sara knew she could use the pictures to give her purposeful information just as the pictures in the codable game gave her insights on to which decisions she should make to complete a task. In the week 3 reflection survey, one student Luke described how he learned how to copy a picture from Google and place it in his digital text. Then, he explained how this lesson would help him choose the best picture by matching the key details in his writing. Luke's response shows that even though pictures and writing seem separate, they can be used together to enhance understanding and meaning. He needed to be able to use the same skills of analyzing the details of a picture to gather relevant information on a topic to analyze a picture to make sure the details of the picture matched the details in his writing. These survey responses reveal students started to see how skills from different lessons could be utilized in various situations with similar tasks.

Throughout the research unit, students needed to navigate the internet in order to find relevant information to their research topic. Figure 5 shows that based upon the initial Digital Knowledge and Preference Survey many students felt they were able to find information on the internet. Yet, during the research unit, all of the students needed explicit instruction on how to navigate the internet to find relevant information. In my

teacher observation journal, I noticed many students did not know how to start looking for specific information related to the research question. Many students immediately asked "How do I look for this?" or "I don't know how to look for this. What should I do?" However, when I observed students on the computer during indoor recess, they were able to use the search tool to find pictures to draw or use keywords to find information on a topic of interest. Students did not make the connection that they could use the same strategy or skills of finding pictures to draw to finding information on their research topic. In my teacher observations, once students knew to use their research questions as guides to help them search for information, they were able to independently use this skill. Then, once faced with the choosing which information to select, they used their knowledge of headings and pictures. In one conversation with Zack he explained why he chose a particular site.

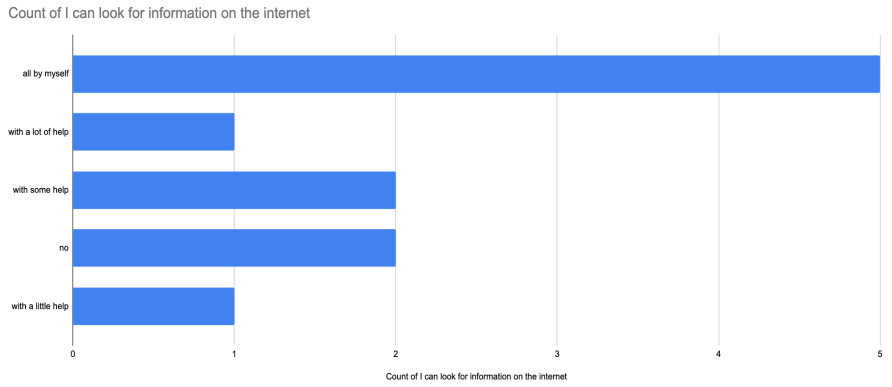
Mrs. McGraw:	What are you reading?
Zack:	I couldn't figure out why grasshoppers were important from my books, so I decided to use my computer.
Mrs.McGraw:	How did you use your computer to help you?
Zack:	I typed in the research question, then I chose this site because it had the word environment in it. That word is in the question.
Mrs. McGraw:	How do you know what to read?
Zack:	I looked at the headings and the pictures.

My conversation with Zack shows he is connecting the skills he uses in reading print text into digital literacies because he is seeing these as similar even though one is on the computer and the other is a physical book. The students' interactions with technology,

digital literacies, and multiliteracies displayed that at the beginning they saw these as separate, but throughout the course of the research unit, they started to see how the skills to understand one could be used to help them understand and use another.

Figure 5

Independence of Looking Up Information on the Internet



Even though at the beginning, students may not see how their digital skills could be incorporated into their reading and writing research, my observations revealed they started to think critically about their problems they encountered with their research and how they could use their tools effectively to help them. In my teacher observation journal, two students Caleb and Anthony struggled with being able to spell words correctly in order to search for information. In order to support them in their research, I taught them how to use the speaking tool on the computer. Once the students knew how to navigate this tool, they were able to search for information on their bug. Caleb and Anthony could explain what they wanted to do, they explained how their research question could help them find information on the computer, but they did not know how to

effectively use the computer. This interaction demonstrated that students could integrate their knowledge of critically reading a question to help them search for information on the computer, and once they knew how to effectively use the tool, they could search for the relevant information.

A lesson on the multiliteracy of reading videos focused on how to read a video. The lesson focused on how to navigate a video to gather important information on a topic, students learned how to apply the strategy of breaking up the video into smaller chunks and to ask and answer questions while watching the video. In an interview with a student navigating a video, the student James explained his struggle with getting information from the video, but he used his knowledge on how to navigate the video from when he uses YouTube at home.

Mrs. McGraw:	What is the problem you are experiencing watching the Video?
James:	Stopping and rewinding the video then writing down the information.
Mrs. McGraw:	How are you stopping and starting the video?
James:	I am clicking the pause and unpause button or clicking the space bar.
Mrs. McGraw:	How do you know the play and pause on the video?
James:	I scroll and put the arrow on the icon and it says play. It looks like the cover of youtube.
Mrs. McGraw:	How do you know what to do next?
James:	I spend a couple of hours trying to see what I can do on YouTube. I usually watch the video where you pause the video and then you see what you have to do. Like when I was first drawing a diglett.

James connected how he watched YouTube at home to how he was watching a video at school to gather information on a research question. He was navigating the video with the strategy and skills modeled in class, and he integrated this knowledge to what he does at home to help him gather the information from the video. The data indicates students displayed critical thinking by being able to integrate their literacy skills and technology skills to gather information from various sources, navigate technology, organize related information, and create a digital text to share their knowledge.

Developing Confident Collaboration Skills

In the beginning of the research, students saw me as the sole resource for feedback and knowledge. After explicit instructional lessons in the first two weeks, students would immediately raise their hands asking “Mrs. McGraw, can you help me?,""I am stuck, what do I do?,” or “I don't know what to do.” This presented many challenges because there was only one of me and a large group of students, and I could not meet the individual struggles of each student. In the initial survey of technology knowledge and use, students shared they did use different digital apps with friends, so they did have some experience working with others using games and videos. Figures 6 and 7 show who the students play with and where they use the devices. These charts show that students are using these devices possibly with people and/or just around people. The data reveals that they could possibly not be using the people around them as tools to engage with the game or app, and they could just be doing a similar task without an actual engagement. This data indicated students would need assistance in their shift of thinking of what it means to work with someone to complete a task and to shift their view of seeing their peers as someone who could aid them in completing a task, and to shift the

way students saw their abilities in decision making to create a product to share their ideas and understanding on a topic.

Figure 6

Who Do You Play With on Devices

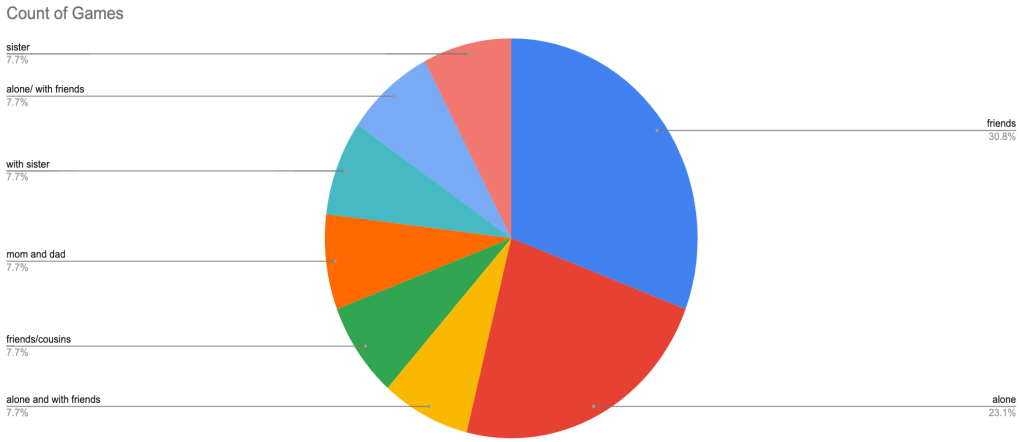
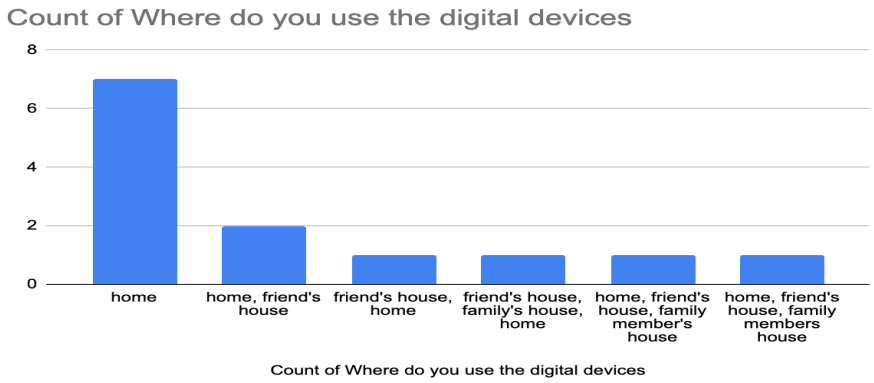


Figure 7

Where Students Use Their Devices



The first week of the research unit required several explicit instruction lessons related to how to read different types of literacies, getting started with Google Slides, navigating the tools within Google Slides, using different types of graphic organizers to organize information and writing, and how to work with partners and groups to gather information and share information. The lessons that focused on partner and group collaboration focused on how to work with someone to gather information from various sources, how they share ideas with one another, and what it looks like to be engaged with the research and not just copying from one another. I observed an interaction between two students James and Josh researching ants. Instead of sharing resources, reading together, or sharing their new information, they were working independently next to one another. This interaction revealed that these students did not see one another as resources and/or felt that it would be easier to independently complete the task. I decided to go over to James and Josh when I saw them sitting there not doing anything, even though there was still time to do research.

Mrs. McGraw:	Hey guys, what are you doing?
Josh:	I am done.
James:	Me too.
Mrs. McGraw:	(looks at both their graphic organizers) Hmmm…I am noticing something about the information you both have in your organizers. Did you share with one another the information you found?
James and Josh:	(silence)
Mrs. McGraw:	Remember, you two are supposed to work together. You need to talk about what you found. Is it the same and/or different? Can you help one another add to your understanding of the research question topic? James go first and share what you found on the first part about ant body parts and where you found it.

James and Josh displayed that they did not think to go over their information with one another. Yet, they both had different information in their graphic organizers about ant body parts, and if they worked together to critically read over their information they would have noticed the different details, so they could add to their existing information to enhance their understanding about their bug. These types of research interactions needed to be supported throughout the research unit, so students could develop their critical reading skills of analyzing and see one another as tools to help them create their informational digital text.

Students had various opportunities to work independently and in groups to research information to answer specific research questions. These opportunities included reading a variety of books, images, videos, and online sites to gather information to answer their research question. From my teacher observation notes, a few students during independent research time would casually flip through books then exclaim “I can’t find

anything. There isn't anything here that tells me about their social behavior." or students would sit there and not do anything. Those students needed support and prompting questions to initiate their critical reading skills, such as "What can we use to help us find the information?" or "What is the topic we are trying to find information about?" In order to better support students in their research, students would work together in groups based upon the bug they were researching. In those collaborative group settings, there was a noticeable change in activity and conversation. One such interaction between two students Caleb and Anthony, who were both researching beetles, displayed supportive collaboration to find information on the research question: why beetles are important to the ecosystem.

Caleb:	Look Andre, this beetle is eating poop. It says here that dung beetles eat poop to clean up and help animals.
Anthony:	Ewww, that is so gross! I found here that beetles eat other bugs called Pests.
Mrs. McGraw:	Why is that important Anthony?
Anthony:	Because the pests eat plants and the plants will die.

Anthony and Caleb were working together to find information related to a specific topic, and the information they shared was different, but it expanded their knowledge on the research topic because it showed two different ways their bug helped the ecosystem. This interaction exhibits the excitement and action of Anthony and Caleb seeing one another as valuable resources to aid in answering the research question. Another interaction between group ladybug group members Heather and Angela showed them engaging in critical reading to assist one another to find information on the research question about

their bug's social interaction. Heather and Angela were both researching ladybugs, and they were trying to figure out if ladybugs were social or not social bugs.

Heather: I see on this page (pointing to a picture) a lot of ladybugs huddled together. And it says that ladybugs hibernate together to stay warm. But, I don't know if that means they are social?

Angela: I can't find anything. All I see is just ladybugs by themselves in the pictures.

Heather: Let's look together.

Heather shows she feels confident they can work together in critically reading the book to find more details about ladybugs social interactions. The two students worked together, and they did not just raise their hand to ask me for assistance. If working independently, Angela would have just given up or asked me for help. Since Angela was in a group with another student, they worked together to reach the goal of using a variety of resources to find their answer to the research question. As the research unit progressed, I saw a definite shift in students seeing themselves and their peers as useful resources to provide support in reading various texts and to offer feedback in creating their digital text.

In the initial surveys, none of the students put down that they have ever used Google apps, so this showed me that students had no experience with Google Slides. The initial use of Google Slides required explicit instruction on how to use the tools to create specific elements within the digital text, such as text and images. In the beginning, I needed to provide most of the support and guidance. In my initial observations, students would shout out "how do I add a heading?," "how do I make my words bigger?," and "how do I add a picture?." These observations showed me that students were using a new digital tool in an unfamiliar way, and they needed the background knowledge and

experience in order to create their digital text. The first few lessons focused on opening the app, getting a new slide, creating a text box, inserting images, and how to use the text boxes to make captions and labels. Students needed practice on how to use the mouse and touch screen to be able to manipulate the text boxes and images in order to stay on the screen. One student Mack, struggled with keeping his text boxes and images on his slide.

Mack:	Mrs. McGraw, I need help with this. I can't get it to go over here.
Mrs. McGraw:	Let me see. Oh, ok. You need to make your text box smaller. Let I will show you. Click on the text box so it is highlighted blue. Then you can make it smaller by moving it like this. Now, you try.
Mack:	(highlights text box and moves it). Thanks.

At times, students needed an individual model to help them have a better understanding on how to navigate the tools within the Google Slide app. These individual models revealed students gained a stronger grasp with the specific skills needed to use Google Slide, and this demonstrated how it enhanced students ability to critically think by using the tools to create their digital text. These enhanced skills then were shared with their peers to assist them when they were struggling with creating their digital text.

After assisting a student with a digital tool task, I would ask them "Would you be able to help another student struggling with this task?" I noticed students' confidence in their abilities to navigate the new technology because they would offer support and guidance to one another without my prompting. I observed one example when students were working on creating a diagram to label their bug's body parts. One student Anthony was struggling with being able to move the arrows to point to a specific body part and to

make another text box to label the body part. Noah said. “I can help you.” He walked over and showed Anthony how to navigate the different tools. Anthony smiled and said “thank you.” He was able to complete his task without further assistance. Once students were done with their writing task for the day, I observed many students walking around and asking their peers “Do you need help?” Students were eager to offer assistance and to receive assistance. Besides suggestions, I overheard numerous students offering praise for their peer’s work, such as “I like these pictures." and "This is cool, how did you do that?”

Another way students started to show confidence in their ability to collaborate with one another was using one another to read over their finished product. Towards the end of the research unit, I introduced checklists to support students to review their work . We practiced rereading work and identifying missing elements and featured elements. Then, I modeled with a student how it would look with peer review and feedback. This included students using the rubric and then explaining their findings to the other person with suggestions. After the lesson, I observed one encounter between Josh and Kim. Josh was reading over Kim’s finished page on her bug’s social behavior. While reading, Josh would point out where Kim needed to add punctuation and start a new sentence. He also gave positive feedback by saying, “You did a great job of adding a caption to describe your photo.” Josh was able to give explicit feedback on how someone can use multiliteracies to add information on a topic, and Kim showed she valued Josh’s feedback to make her digital text stronger because she made those changes to her text.

Throughout the research unit, students showed that they thought that working next to someone was working with them. After several lessons and supported group collaborative sessions, students displayed a growth in confidence in sharing their ideas

and knowledge with one another. They demonstrated this growth through their interactions on supporting one another to research through sources to find information discussing the details in their graphic organizers, aiding one another to navigate the digital tools within Google Slides, and providing insightful feedback so their peers can revise and edit their work.

Shifting Digital Literacy Roles from Consumer to Producer

When students create a product, they transition between the roles as individual producer to collaborative producer because they seek out the feedback of others to elaborate and develop their finished product. Giving students the opportunity to share ideas in the form of collaborative creation of a text allows students insight on how to create a product for others' understanding. In the digital knowledge survey and skills, students shared that they mostly used their digital devices to watch videos, play games, talk to friends, listen to music, and read. Students did not use their devices to write or create videos. This information showed students' main role with digital media is consumption and not producing material to share ideas or understanding. At the start of the research project, students knew how to decode text and would answer prompted questions about the text. Yet, they struggled with being able to share ideas and information without an adult initiating the conversation. In the beginning, lessons needed to focus on how readers obtain information from various forms of literacy, such as videos, diagrams, photographs, and pictures. Students would only read the text, and they would require prompting to look at all parts of the text. I would need to ask them "What else do you notice on the page?" or "Where else can we find information?"

Students need to be able to decide if a video is appropriate or related to their topic. It requires them to not just randomly click on videos and keep watching without purpose. There were lessons on using the research question and research top as tools to support purposeful searching for videos and online sites for information. During an interview, James explains how he decides if a video is appropriate.

Mrs. McGraw:	How do you know what to click on?
James:	I know what to click on because of the very red button in the middle. I do read the comments. If someone comments, I will see it. If it is something inappropriate I won't watch the video. I read the comments after I watched the video.

The student knew to use the comments as an aid to give him more information about the video, but he seemed to confuse when to read the comments to aid in making a decision. However, the student was displaying a critical process in deciding on the appropriate video to find information for his research question. Another student Josh during an interview shared the specific elements he found difficult about finding information using digital media.

Mrs. McGraw:	What do you find easy or difficult about reading on the Computer?
Josh:	I find it difficult when we do slides- finding the different icons, but now it doesn't take that long.
Mrs. McGraw:	When you watch videos, easy or difficult?
Josh:	Finding the videos is difficult but watching it is easy. I find it difficult to pull information out of a video to answer questions. I can take notes- I can use sticky notes to write down information, and using a graphic organizer to write notes would be helpful.

The student showed that he understood that it is important to pull information from videos and not passively watch the video. In order to not be passive consumers of information, students need to be engaged with the material, so they can recognize relevant information.

Once students understand how to develop skills of active and purposeful consumption, students need to be able to share their knowledge and understanding by creating a product for others to read. Throughout the research unit, there were many lessons on how authors created informational texts to share information. Students took the information they gathered for six research questions and created an informational book in Google Slides to share the information they learned about their bug. Figures 8 through 10 show the various ways students created different text features to share information on a topic with readers. Throughout the process of creation, students were purposeful in their choices. In my teacher observation journal, I saw students making decisions on how to highlight important words to add to a glossary, adding appropriate captions to photographs to enhance information on a topic, and choosing appropriate images to represent the text.

Figure 8

Student Digitally Created Caption Matching Photograph

Figure 9

Student Digitally Created Food Web

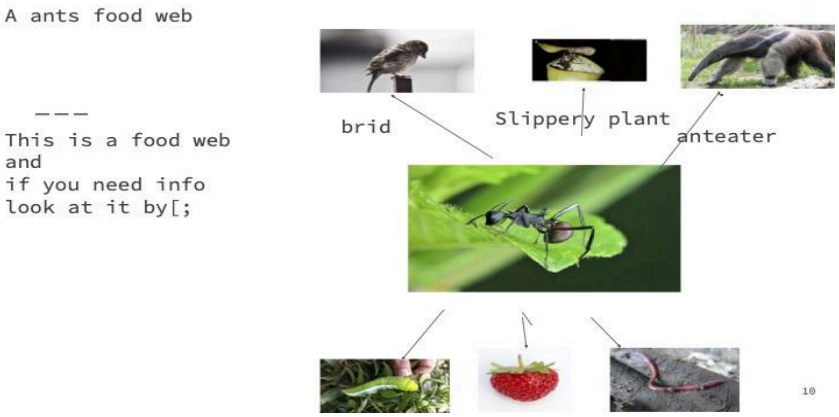
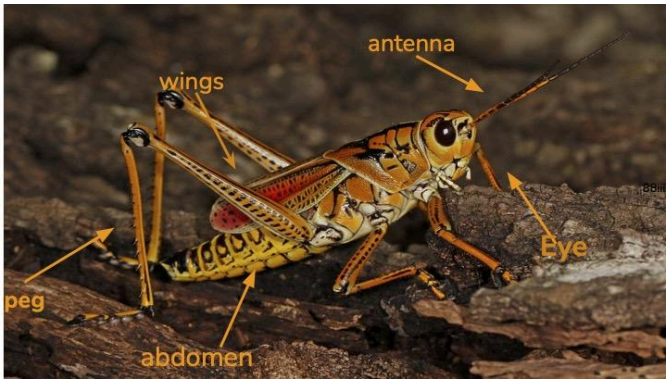


Figure 10

Student Digitally Created Grasshopper Diagram



Students were able to use the formatting seen in various informational texts in print and online. It demonstrated students do need to understand various multiliteracies and study the structure of how authors of various multiliteracies create the elements in order to share information on a topic for readers.

Conclusion

The data from the study suggests students need experience with a variety of literacies, but they also need explicit instruction on how to read the different types of literacies and to use digital tools to create their own product. After explicit instruction, they showed an increase in ability to independently critically read digital texts and displayed critical thinking while using the digital tools within Google Slides. Once students were navigating the digital literacies, videos and digital tools, they displayed confident collaboration skills with their peers. The collaboration skills can help them develop and strengthen skills to transform from passive consumers to critical consumers of information and purposeful creators of their own product. Students demonstrated critical thinking with the feedback regarding peers' writing. Lastly, the collaboration and

feedback aided students to see themselves and peers as valuable resources and tools to help understand information from various sources and to create a complete and coherent product to share information. These findings showed me it is vital to allow students to work with a variety of texts, such as print, digital, pictures, and video to practice the various reading skills to acquire information and understanding, and students need practice creating a variety of products using a variety of digital tools. The following chapter will discuss conclusions, significance, and recommendations for future research.

Chapter 5

Summary, Conclusions, Limitations, and Implications for the Field

Summary

At the end of the research, I discovered that even though students had experience with technology and digital tools, they needed explicit instruction on how to manipulate and use digital tools and to critically read multiliteracies. The fact that students interact or are exposed to digital tools, digital literacies, and multiliteracies does not mean they know how to critically engage with them to make meaning and share understanding with others. At the end, the results showed the need for explicit instruction so students could develop the ability to critically read a variety of texts, critically make decisions about creating a digital text, and navigate digital tools to create a product.

During the research process, students displayed an ability to apply critical reading strategies to various multiliteracies and digital tools. The various conversations, teacher observations, and student work samples revealed that they utilized skills and strategies in one literacy context to critically read and to make meaning and applied them in another area to make critical thinking decisions to make their final digital literacy product. In short, the students showed they were starting to make connections to these literacy skills and multiliteracies.

While working on gathering information throughout the research project, students exhibited an interest and increase in confident collaboration skills. Once students gained experience with the research process, the conversations, sample work, and teacher observations revealed the excitement students had about sharing information, supporting peers in using various multiliteracies to gather information on a topic, and aiding students

in navigating digital tools to create their informational digital product. Conversations throughout the study demonstrated students could articulate struggles, explain how to navigate literacies and digital tools, and relevant feedback to improve writing. These interactions showed that students started to see themselves as experts, and they eagerly wanted to discuss their ideas, creative writing choices, and provide supportive feedback.

At the conclusion of the study, the teacher observations and student work indicated students began to see themselves as producers of digital literacies, not just consumers. In the beginning, the surveys revealed most of the interaction students had with digital literacies were them as consumers, and they did not have any experience creating products. At the end, students shifted that role to producers by creating a published informational digital text. Their finished products showed an ability to make critical thinking decisions to match text and pictures and utilize digital tools to enhance readers' understanding of the information. They no longer just saw digital literacies as a way for them to get information, but they could be creators to share their ideas and understanding on a topic.

Limitations of the Study

A key limitation that affected the study and findings is the creation of one digital literacy. Throughout the course of the study, students were only able to create one digital literacy product instead of being able to explore and create various digital literacies. This limitation affected the study because in the surveys it showed that most of the time students passively consumed videos. In this research study, students were unable to produce the main digital literacy they spent most of their time consuming. Students participated in the ELA research bug unit during the study, and they needed to produce a

writing informational piece, so it limited the ability to create diverse digital literacy content.

Another limitation of the study was the limited collaboration between the classroom teacher and technology teacher. The lack of collaboration did not allow for maximum explicit instruction with digital tools and digital technology. Since reading and writing instruction time needed to be used to explicitly teach digital tools and technology, it impacted explicit instruction and student exposure to other multiliteracies. Students did not have maximum opportunities to engage with multiliteracies and digital technology. A stronger collaboration to plan out lessons and who would teach which lessons would improve students' experience with digital literacies.

Implications for Teachers and Educators

After examining the data and conclusions from the study, there are other areas that can be explored and studied. Other areas to be studied would be a year long study on younger students using technology to create various digital products to demonstrate their understanding. A longer study would give more insight into how students would be able to integrate their daily technology use into school use technology to create a product. Students need to know how to productively use technology to create digital literacies to share their knowledge and understandings, and a longer study might show if students could critically engage in a choice product creation. The choice over which digital literacy to create would show a student's interest and skills using technology.

Another area of further investigation would be a longer study over the course of multiple units of reading and writing instruction that incorporates an equal amount of digital literacies and multiliteracies. This study would allow further insight into a

students' critical reading development with digital literacies and multiliteracies, and if this critical reading would transfer to students' personal digital literacy use out of school.

The research study has areas of improvement in evaluating the improvement of students' out of school technology skills. This area of focus would give insight into whether students would be able to transfer their critical reading and critical thinking skills to their consumption and production of digital literacies out of school and improve their ability to critically engage with information. It is important to consider students' ability to take the skills and strategies from school and incorporate it into their daily life.

Overall, it is important to incorporate digital literacies and multiliteracies into students' daily instruction. These are the skills students need in order to participate in the modern world. This focus will help students expand their understanding of what it means to be literate, and it will change the way many students see themselves as readers.

Conclusions

After analyzing the data from the study, I saw how students changed from the beginning of the research to the end not just with their work but with their conversations and interactions with one another. The use of multiliteracies allowed students to explore information on a topic in a variety of ways, and it showed students that there are many different aspects to critical reading, and many of the skills they have help them in understanding diverse texts, such as videos, photographs, diagrams, maps, online text, and print text. As explored in chapter 2, reading multiliteracies is no longer just print text, but literacy encompasses music, media, body language, pictures, games, trading cards, symbols, and many more possibilities. Another major component of multiliteracies is the context of the literacy and how the context changes the language and meaning of

the literacy (2017, Sang). The data from research support these findings because students were able to gain insight from all areas of their research, especially when collaborating with their peers to discuss their findings and understandings.

In addition, my research showed that reading instruction incorporates many aspects, and explicit instruction is vital to aiding students in developing critical reading and critical thinking skills. As the New London Group explained in 1996, the way to teach literacy can not just be in one way or in one form. Literacy pedagogical practices need to reflect "one in which language and other modes of meaning are dynamic representational resources, constantly being remade by their users" (1996, p.64). The purpose of literacy instruction is to prepare students for the world around them and to be able to navigate within the world. Literacy instruction needs to provide them the opportunity to practice those skills within the context of their daily lives. It can not be assumed that students are able to critically read digital texts and multiliteracies, even though they are exposed and interact with them daily. This assumption is dangerous and it can lead to students staying in a consumer role without critically thinking about information or becoming critical producers of content that challenge ideas and understandings.

All in all, my data and observations in my research reflected the current studies discussed in chapter two. Students need exposure and practice to all forms of literacy. Besides exposure and practice critically reading all forms of literacy, students need to have opportunities to independently and collaboratively create their own literacies using a variety of digital tools. Along with that, teaching practices need to change to incorporate the various digital literacies and multiliteracies, and it needs to include explicit

instruction to allow students a way to access the new literacies. Utilizing these key components will allow teachers and students to unlock a new way to explore literacy and engage with a diverse audience to share their ideas, knowledge, and understanding.

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Appendix A

Digital Knowledge and Preference

Name: _____

Digital Knowledge and Preference

1. I know how to record a video and post it to social media

No

With a lot of help

With some help

With a little help

All by myself

2. I can write messages to my friends or other people in chats or social media

No

With a lot of help

With some help

With a little help

All by myself

3. I can find videos on a topic

No

With a lot of help

With some help

With a little help

All by myself

4. I can create a profile for a game

No

With a lot of help

With some help

With a little help

All by myself

5. I can type on the computer

No

With a lot of help

With some help

With a little help

All by myself

6. I can look for information on the internet

No

With a lot of help

With some help

With a little help

All by myself

7. I can read directions on games, social media, and the internet

No

With a lot of help

With some help

With a little help

All by myself

8. I can tell what is real and what is fake on the internet

No

With a lot of help

With some help

With a little help

All by myself

Appendix B

Digital Activity and Use

Survey Questions about digital activity and use

1. Gender Male or Female
2. Do you have a computer?

   Yes No
3. Do you have a tablet?

   Yes No
4. Do you have a phone?

   Yes No
5. Do you have a game system?

   Yes No

   Nintendo DS Playstation 4 or 5 Xbox
6. Do you play games on a phone or tablet?

   Yes No
7. Which games do you play?
8. Do you use any apps?
9. When do you use digital devices? Weekdays (Monday, Tuesday, Wednesday, Thursday, Friday) Weekends (Saturday/ Sunday)
10. How long do you use digital devices?
11. Do you play alone or with friends?

12. Where do you use the digital devices? Home, school, at a friend's house, at a family member's house

13. Do you talk to your friends on digital devices?

14. Do you use digital devices to read?

15. What activities do you use digital devices for? Watch videos, play games, talk to friends, read, listen to music, create videos, write

Appendix C

Weekly Survey

Name: _____

1. What did you learn in technology class this week?

I learned

_____
_____
_____

2. Did you find it easy or difficult?

Easy Difficult

3. How can you use this to help you in reading and writing?

_____
_____
_____