AN EXPLORATION OF BLENDED LEARNING IN FIFTH GRADE LITERACY CLASSROOMS

by

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A dissertation submitted to the faculty of
The University of North Carolina at Charlotte
in partial fulfillment of the requirements
for the degree of Doctor of Philosophy in
Curriculum and Instruction

Charlotte

2017

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ABSTRACT

KIMBERLY HEINTSCHEL RAMADAN. An exploration of blended learning in fifth grade literacy classrooms (Under the direction of DR. KAREN WOOD)

The development of the Internet allows for hybrid models of instruction that marry face-to-face and online learning (Osguthorpe & Graham, 2003). The purpose of this study was to explore blended learning and traditional instruction in three fifth grade literacy classrooms, examining the teaching and learning students engaged in during the literacy block. Furthermore, this study examined the shift in pedagogy required of teachers in order for students to engage in a blended learning environment. Specifically, I employed a qualitative case study design conducted over six weeks in 2015. Participants included nine fifth graders from three different blended learning literacy classrooms and their three teachers. The study was conducted in public schools located in a southeastern city in the United States. Data included interviews, observation notes and field notes. Data analysis included within and cross case study analyses. Themes and patterns were examined to reveal the following findings: limitations for reading online prevented students from using reading strategies taught in traditional reading classes; the wealth of information provided from the Internet posed both advantages and challenges; and support for teachers and students in a blended learning environment was imperative to its success.

DEDICATION

This is dedicated to Rylee Rose Ramadan. May you always be fearless.

And to Cheryl Lynn Heintschel. Thank you for teaching me I can be a loving wife and mother and still accomplish my goals. You are missed every, single day.

ACKNOWLEDGEMENTS

First and foremost, Dr. Karen Wood, you have supported me throughout not only the dissertation process, but also my entire Masters and PhD program. You have always supported, encouraged, and promoted me and I truly appreciate everything you have done. Dr. Bruce Taylor – I appreciate your unwavering guidance through this process. Your feedback and insight has been unbelievably encouraging these past (many…) years.

To my family and friends who have supported me through this – thank you! Thank you for listening when I needed an ear and understanding when I had to stay home to write. To my dad – who has been an editor, an encourager, and has lifted me up during this process. To Jessie – we have been through it all, it seems, the past ten years. One important accomplishment has been both of us becoming Dr.! The best is yet to come!

Finally, and most importantly, to my husband Sherif – there is no way I would have survived this without you. Never once have you complained about the amount of work I have or the time we have missed out on together. Every time I hit a milestone, you met me with encouragement. I love you more than words could say.

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CHAPTER 1: INTRODUCTION

The term "literacy" has changed and broadened in the last few decades, particularly with the information and technology revolution (Lankshear & Knobel, 2006; Gee & Hayes, 2011). During the pre-Industrial Revolution, literacy was used to statistically measure adult illiteracy in relation to economic development. As the Industrial Revolution began, most citizens did not attend school; rather, they obtained on-the-job apprenticeships where learning to read and write was not necessary. Literacy was not formally taught (Collins & Halverson, 2009; Lankshear & Knobel, 2006). As the United States moved toward post-industrialism, literacy was pushed to the forefront of education. At the same time, the world was going through an Information or Knowledge Revolution, which was "fueled by personal computers, video games, the Internet and cell phones" (Collins & Halverson, 2009, p. 4). These new technologies allowed people to access information immediately through online portals. The rise of the Information Revolution meant that more technology was used in homes. In 1984, 8.2% of households had a computer compared to 2012, when 78.9% of households had a computer (United States Census Bureau, 2014). As technology continues to change, the definition of what it means to be literate changes daily (Rowsell & Walsh, 2011; Leu & Kinzer, 2000; Leu, 2001; Abrams, 2015).

As our society becomes more dependent on technology as our primary form of communication, we see young children interacting with video games, students taking

online courses, and the Internet becoming the major source for information. In addition to the amount of information available, the rise of technology has changed the way people communicate with one another (Domingo, 2012). Whereas previously friends and colleagues would communicate through traditional page-bound text, today people are relaying information and communicating through interactive texts such as digital newspapers, blogs, wikis, emails, Facebook, Twitter, and Skype (Domingo, 2012). As a result of the Information Revolution, new technology is rapidly being developed, and the effect extends to the school building (Abrams, 2015).

The increase of technology outside schools has forced teachers to integrate online learning within the school walls (Henderson & Honan, 2008; Beach, 2014; Hagood, Stevens, & Reinking, 2003; Lankshear & Knobel, 2003, 2007; Mishra & Koehler, 2006; Simsek & Simsek, 2013). This increase forces teachers to adjust the way they are teaching to include technology instruction in their curricula. In order to prepare students for the job market beyond school, twenty-first century skills are essential (Baker, 2010; Jones-Kavalier & Flannigan, 2008). According to Paige (2009), school curriculum should combine knowledge, innovation, Information and Communication Technology (ICT), literacy and life experiences.

Statement of the Problem

Literacy is continuously changing as the Internet evolves (Coiro & Dobler, 2007), and the classroom is largely influenced by changes in new literacies (Rowsell & Walsh, 2011; Leu, Kinzer, Coiro, & Cammack, 2004). Leu et al. (2004) describes New Literacies as the skills and strategies necessary for comprehending, such as "identify important information, locate information, critically evaluate the usefulness of that

information, synthesize information, synthesize information to answer those questions, and then communicate the answers to others" (p. 1572). Leu (1996) defines literacy as deictic, or continuously changing, as new literacy technologies appear.

Coiro and Castek (2010) state that "In today's global knowledge society, print is no longer the dominant form of communication or expression … the range of digital, nonlinear, multimodal, and interactive texts … are often unbounded in time and space" (p. 314). Reading text has expanded from exclusively reading traditional print to interacting with online technology resources in a meaningful way (Rowsell & Walsh, 2011; Coiro, 2003; Leu, 2000). This requires teachers to adjust how they define literacy and how they incorporate literacy within their subject matter. Young people are interacting with technology in their lives outside of school, and the technology they are using in and out of school provides not only exciting new opportunities, but also challenges for educators (Burnett, Dickinson, Myers & Merchant, 2006). O'Brien and Scharber (2008) maintain educators should adjust instruction to include technology. Incorporating technology in reading instruction is not meant to replace old literacies but rather "braid together new digital literacies and old or already established literacies" (O'Brien & Scharber, 2008, p. 67).

Curriculum using primarily traditional print is no longer sufficient, and proficiencies in new literacies are essential to children's future (Rowsell & Walsh, 2011; IRA, 2002; Leu et al., 2004). Reading online and in traditional texts requires different skills; thus, teachers must adjust their teaching to incorporate online texts (Coiro, 2007; Leu et al., 2004). According to Coiro (2011), reading online requires more complex reading strategies and deeper levels of higher order thinking skills than reading a

traditional text. Educators must find new ways to address reading and comprehension to include using online tools (Knobel & Lankshear, 2007; Mokhtari, Kymes, & Edwards, 2008; Leu et al., 2004). Online comprehension skills include the use of hyperlinks on web pages, multimedia such as audio and video clips, advertisements, and virtual reality environments (Coiro, 2003). Teachers have the challenge of integrating these technologies and teaching students online comprehension skills in the classroom.

In this study, I explored the successes and challenges teachers face blending technology with literacy instruction and provided suggestions for implementing and sustaining blended learning in the classroom. As the statement of the problem is developed further, the next section will address the digital divide. In addition to the challenge of teaching technology skills, there is also an issue of equality with digital resources. Teachers, and in some cases schools, charged with educating students about the technology are lacking the tools and infrastructure needed to carry out these tasks.

Digital Divide

Although computers are in homes and schools throughout our nation, there is great disparity in the accessibility of technology across socio-economic groups. Dijk and Hacker (2003) argue that the gap in the digital divide increased during the 1980s and 1990s. According to Hoffman and Novak (1998), there are dramatic differences in computer ownership and Internet usage among racial groups, with White families showing higher levels of availability and usage compared to their Black counterparts. When examining technology availability in homes in 2011, the United States Census Bureau (2014) reported a 19% difference between White homes (82.7%) and both Black (56.9%) and Hispanic (58.3%) homes.

The digital divide transfers into schools as well. Teachers are more likely to integrate technology if their schools are furnished with computers and Internet access. However, schools with higher minority populations are less likely to have adequate computers or appropriate Internet access (Smerdon et al., 2000). The United States Census Bureau (2012) reports elementary schools with a poverty level of 20% or more have 25% less electronic storage space (50% versus 76%) and access to online materials (66% versus 82%) as compared to elementary schools with a poverty level of less than 10%.

Necessary Research

While research in blended learning is on the rise (Drysdale, Graham, Spring & Halverson, 2013), it has focused mostly on students in higher education. There is a lack of research on blended learning at the elementary level (Halverson et al., 2012; Forzani & Leu, 2012). Coiro (2012) found "primary grade teachers … are craving information about how young children tackle the challenges of reading on the Internet" (p. 412). Unfortunately, less is known about how students, particularly young adolescents, interact with their electronic environments both in and out of school (Coiro, 2009). Coiro (2012) sees a research opportunity for educators to recognize the set of skills or strategies learners in elementary school need to successfully navigate online for academic purposes. More information is needed about how students comprehend and interact with digital text and what happens to their understanding as they navigate between traditional and online print (Beach, 2014).

. It was the need for research on blended learning in elementary schools that prompted this investigation. I examined how three teachers conducted literacy

instruction using different blended learning models, and looked at what students were doing online in blended learning and in their traditional literacy classes. During the study, I observed and interviewed students to discover what they did during blended learning instruction. Teachers who were interviewed identified successes and challenges with blended learning. I used the collected data to examine the ways in which blended learning changes teaching and learning in the classroom, and offered suggestions for teachers and teacher leaders to support blended learning.

Blended Learning

Online learning has been named and defined in different ways over the past decade (Drysdale, Graham, Spring, & Halverson, 2013; Fisher & Frey, 2012). Terms for online learning include: hybrid learning, distance learning eLearning, and e-teaching (Ellis, Steed, & Applebee, 2006; Caravias, 2014). In addition to different terminologies, the definition of blended learning varies (Gulbahar & Madran, 2009; Duhaney, 2004; Young, 2002; Powell et al., 2015). Researchers have defined blended learning as a mix of traditional teaching and online learning, which combines face-to-face and online modalities (Halverson, Graham, Spring, & Drysdale, 2012; Welker & Berardino, 2006; Fisher & Frey, 2012). Other researchers add that blended learning is a shift in instruction to include more student-centered learning, where students critically examine their world using different types of media (Powell et al., 2015).

Purpose of the Study

Researchers acknowledge the need for more studies on how students are learning online and the effects of blended learning, particularly with elementary and adolescent

students. (Coiro & Dobler, 2007; Forzani & Leu, 2012). This study will examine literacy in three fifth grade blended learning classrooms.

The overall purpose of this study was to examine how teachers were implementing blended learning, to identify activities students were engaged in, and to discover how teaching and learning have changed as a result of a blended learning environment. I used an exploratory multiple case study model (Yin, 2009) to examine how students were taught, what assignments students were given, and what texts they were reading. The research design was developed over six weeks in three different fifth grade blended learning literacy classrooms. Observations and interviews revealed how blended learning has changed the way teaching and learning occur. I observed each classroom three times and then conducted interviews with students in all three classrooms. Throughout the study, I conducted observations, interviews, and artifact collection, and took extensive field notes.

The research is guided by the following questions:

1. What is blended learning as it is enacted in three fifth grade classrooms?
2. In these blended learning classrooms, what online texts and activities are assigned to fifth grade students, and in what types of traditional reading are they participating in the classroom? How do students engage or respond to assigned online activities?
3. Considering these texts and activities, how does blended learning change the teaching and learning of reading?

The next section describes the theoretical framework that guided the study.

Theoretical Framework

The purpose of this study was to examine what students were doing online in three fifth grade blended learning classrooms, as well as how teaching and learning changed. Online reading comprehension theory and new literacies theory grounded the work of the study and set the stage for research in these areas.

Grounded Theory

I employed grounded theory to develop a theory using data from the described study. The goals of grounded theory are to "generate or discover a theory" (Dey, 1999, p. 1) and provide a theory of a phenomenon that is much more than merely description (Laws & McLeod, 2004). The major difference between grounded theory and other approaches of qualitative research is the emphasis on theory development (Glaser & Strauss, 1967; Merriam, 1997). Glaser and Strauss (1967) posit that data gathering should not be influenced by current theories but, rather, data collection and analysis should lead to theories. In grounded theory, the researcher analyzes documents, interview notes, field notes, and other data to code and compare findings, ultimately developing a well-constructed theory that is grounded in data (Merriam, 1997; Laws & McLeod, 2004). Data analysis in grounded theory begins when data are collected and the researcher uses open coding to critically examine the data and identify categories. The categories are then connected to form theories.

New Literacies Theory

In addition to grounded theory, new literacies theory was used to ground the research. New Information and Communication Technologies (ICT) are instrumental in the discussion of online reading comprehension. ICTs include the skills, strategies, and

dispositions necessary to successfully use and adapt to the rapidly changing information and communication technology emergent in our world that influences all areas of our personal and professional lives. These new literacies allow us to use the Internet and other ICTs to identify important questions, locate information, critically evaluate the usefulness of that information, synthesize information to answer those questions, and then communicate the answers to others. (Leu, Kinzer, Coiro, & Cammack, 2004)

Significance

This study examined what students are doing online and in their classrooms in a blended learning model, how teaching should be adjusted, and what support teachers will need to incorporate technology in their classrooms. The study has value because there is very little research about what students are doing online, particularly in elementary schools, using a blended learning model. Additional information about how blended learning changes teaching and learning is necessary so teachers can better understand how to teach using a blended learning model (American Association for the Advancement of Science, 1999, 2001; Selfe, 1990). Too often, teachers are given technology with no idea how to use it. This study examined three teachers who were asked to use a blended learning model without direction, and without a clear understanding of what teaching using a blended learning model means.

With this study, I made an original contribution to the field by focusing on blended learning and working with elementary students, whereas the prior research focused primarily on students in high school and higher education (Drysdale, Graham, Spring, & Halverson, 2012; Jacobs, 2014). Drysdale et al. (2013) identified the top fifty articles, twenty-five edited book chapters, ten books, and fifteen non-academic

publications indicating where conversations on blended learning were taking place, in what context blended learning was occurring and at what organizational level blended learning was happening. The researchers found that, since 2001, graduate research on blended learning increased steadily and blended learning was used in corporate and higher education, but it is now emerging into K-12 education. In another study, Burgmann and Sams (2008) investigated a high school Chemistry class where students used vodcasting to view lessons before coming to class. This practice, known as flipping, gave teachers an additional fifty to sixty-five minutes per class period to enhance student understanding using hands-on learning activities. In a middle school in Oakland, California, pilot studies were conducted to examine whether blended learning can personalize instruction and increase achievement. Initial findings showed that during the second year of the program, the number of students reading at grade level increased by 10 to 25 percentage points at the three pilot schools, outscoring the district as a whole (Jacobs, 2014). While studies of middle and high schools on blended learning or flipped classrooms are available, there is a lack of research in elementary schools.

This study explored what students were doing online in a blended learning model. More research is needed on "what design features could lead to greater student motivation and engagement" (Drysdale et al., 2012, p. 98). This study gave researchers and elementary teachers an understanding of what and how students are reading online, and it may affect how teachers structure assignments during blended learning in the future. The research informed teachers of the skills students need for effective online reading comprehension, and how they can support their students in acquiring these skills. Finally, it opened the door for further research into online reading comprehension.

Definition of Terms

Blended Learning, Classroom Rotation, Lab Rotation

- Blended Learning: learning technique that combines classroom and digital environments.
- Classroom rotation: Students rotate to various classroom learning centers.
- Lab rotation: Students alternate between working with the teacher and working in a lab with computers.

Summary

Chapter one provided the basis for the qualitative case study investigating blended learning during literacy instruction in three fifth grade literacy classrooms. As technology alters the way students are reading and comprehending, teaching and learning must change as well, and it is essential that educators prepare students for jobs that may not yet exist. As such, educators need to know how students process information while reading on computers and tablets in order to help them fully comprehend what they read. Literature addressing comprehension is abundant, as is research about blended learning in higher education. What is lacking, however, is information about how blended learning is used with students in elementary and middle schools. The next chapter expands on these topics. Chapter two will describe the history of literacy and blended learning in greater detail.

CHAPTER 2: REVIEW OF THE LITERATURE

The purpose of the study was to examine how blended learning was implemented in three fifth grade classrooms. I examined activities students were engaged in during blended learning in their literacy blocks, and how blended learning changed the way teachers instructed and students learned. In this chapter, I reviewed the history of literacy instruction and blended learning. The theoretical framework used to guide the study, New Literacy Theory and Grounded Theory, are further explained in this chapter. Literacy is examined in three key areas: the history of literacy, how students comprehend online, and the shift in pedagogy required for literacy educators. The first section examines how literacy has evolved from printed text to online, or Web-based, literacy. The second section will discuss how student comprehension is challenged by online shifts. Additionally, I offer suggestions for engaging students in high levels of thinking while online and examine the pedagogical shift required by educators to successfully teach students using a blended learning model. The final section addresses two specifics of blended learning: what blended learning is and the models, strengths, challenges, and examples of blended learning in practice.

Theoretical Framework

New Literacies Theory

From the time the Internet expanded to schools in the mid-1900s, the speed with which readers could consume information and the scale in which firsthand knowledge

could be explored increased (Pew Internet & American Life Project, 2001; Coiro, Knobel, Lanshear, & Leu, 2008). According to Internet World Stats (2014), Internet usage has grown 676.3% from 2000 to 2014. In 2000, roughly 45,000 K-12 students took online courses, compared to more than three million in 2009 (Horn & Staker, 2011). Additionally, students began using the Internet for homework and reading online (Pew Internet & American Life Project, 2001).

Reading and writing instruction has evolved, and the introduction of new digital literacies has transformed the way educators instruct students (Hagood, Stevens, & Reinking, 2003; Lankshear & Knobel, 2003, 2007; Simsek & Simsek, 2013). Leu, Kinzer, Coiro, Castek, and Henry (2013) developed New Literacies as a theoretical approach because literacy was rapidly changing. The Internet and Information and Communication Technologies (ICTs) will forever be embedded in our personal and professional lives. ICTs include blogs, word processors, video editors, email, spreadsheets, avatars, and virtual worlds, among others (Lankshear & Knobel, 2003; Leu et al., 2004). New literacies provide a seamless electronic network in which, with a click of a button, a reader has access to print in a digital network. As young people move through their lives, they will encounter even more profound changes in technology than could ever be imagined (Coiro, et al., 2008; Leu, 2000).

Leu et al. (2013) framed new literacies theory on two levels: new literacies (lowercase) and New Literacies (upper case). Lowercase new literacy theories "explore a specific area of new literacies and/or a new technology" (Leu et al., 2013, p. 1157) and include a focused disciplinary base or a distinct conceptual approach. Examples of new literacies include using a search engine to locate information, evaluating information on a

webpage, using a word processor correctly, and inferring information found at a hyperlink on a webpage (Leu et al., 2000). New Literacies, however, is broader, is more inclusive, and discovers the most common patterns in new literacies (Leu et al., 2013).

Leu et al. (2013) describes literacy as a deictic, or dual-level, theory allowing smaller theories such as multimodal literacy (Hull & Schultz, 2002) and multiliteracies (Cope & Kalantzis, 2000; New London Group, 1996) to also inform the theory. Deictic also refers to the rapid changes in new literacies (Leu et al., 2013). According to Leu et al. (2013), the following are common principles in New Literacies research and theoretical works:

- the Internet is this generation's defining technology for literacy and learning within our global community;
- the Internet and related technologies require additional New Literacies to fully access their potential;
- New Literacies are deictic, multiple, multimodal, and multifaceted;
- critical literacies are central to New Literacies; and
- new forms of strategic knowledge are required with New Literacies.

Additionally, new social practices are a central element of New Literacies; learning is socially constructed within New Literacies and teachers become more important though their role changes in New Literacy classrooms (Leu et al., 2004; Leu et al., 2013).

The New London Group (1996) argued that literacy developed from the social practices of a group of people. In the mid-1900s, schooling prepared students for future jobs by teaching them to read and write and by providing them with an understanding of

their social environment. Being literate allowed people access to more information and, ultimately, led to economic advantages (Pullen & Cole, 2010). The New London Group (1996) proposed that there cannot be only one set of skills a reader needs in order to be fully competent, and that literacy educators and students need to see themselves as active participants in learning. Similarly, Leu et al (2013) suggest that new technologies and ICTs "require additional social practices, skills, strategies, and dispositions [for individuals] to take full advantage of the affordances each contains" (p. 1159). Foundational literacy skills for reading traditional texts, such as word recognition, phonemic awareness, and vocabulary, will not be enough to fully engage with the Internet and ICTs (Hartman, Morsink, & Zheng, 2010; Leu et al., 2013). Reading comprehension is an important issue, according to the new literacies perspective, because new comprehension skills, strategies, and dispositions are necessary to locate, evaluate, and synthesize information on the Internet. Traditional reading strategies are necessary, but not sufficient when students are asked to read and process online text (Coiro & Dobler, 2007).

Grounded Theory

Grounded Theory was first developed by Glaser and Strauss (1967) and later expanded by Strauss and Corbin and was established as a tool for collecting and analyzing qualitative data (1990, 1998). Rather than deducing hypotheses from pre-existing theories, Glaser and Strauss (1967) developed theories that were grounded in data, and revolutionized qualitative research.

Grounded theory method consists of efficient and organized, but flexible, guidelines to collect and analyze data in order to construct theories that are grounded in

the data. Data obtained from social research is used to develop a theory (Charmez, 2006; Glaser, 1999; Glaser & Strauss, 1967). The purpose of theory in sociology is to enable prediction of a behavior, allow for theoretical advance of sociology, allow practical application, provide a perspective on behavior, and provide a pattern for research on a behavior. Theories in sociology must provide categories and hypotheses, which can be verified in future research and understood by sociologists in the field as well as be linked to data such that the theories may not be refuted (Glaser & Strauss, 1967). When collecting data, grounded theorists first ask: What is happening here? Throughout grounded theory, data collection, and analysis, memos are developed in order to organize codes, draw comparisons, and record ideas about the data (Charmez, 2006).

Glaser and Strauss (1967) posit that the key components of grounded theory include constant advancement of theories as data are simultaneously collected and analyzed, creating codes and categories from the data rather than a preconceived hypothesis, using the constant comparative method, and writing memos in order to define relationships, identify categories and identify gaps in the data.

Grounded theory was appropriate for this study because it allowed for development of theories related to blended learning and online literacy. While some research has been conducted on blended learning, most studies have been based in colleges or high schools (Powell, Watson, Staley, Patrick, Horn, & Fetzer, 2015). This study will add to the body of research already established by adding theories focused on elementary students in a blended learning model.

History of Literacy

The earliest form of written language was believed to have begun during the

fourth century B.C. with the Sumerian society's invention of tablets (Boyarin, 1993; Diringer, 1968; Manguel, 1996). As agriculture grew, it became necessary for business transactions and tax records to be recorded. In response, written forms of communications were created to facilitate this social and economic need (Boyarin, 1993).

Early books were difficult to access and were not easily understood, as they were often written in languages most people could not read, such as Greek or Latin; they were written about specific and complicated topics such as religion and philosophy; and they were typically written for political purposes. Books were expensive, rare, and time consuming to produce because they were handwritten (Gee & Hayes, 2011). Early written forms of communication were used to express the experiences of the oppressed. For example, Lady Murasaki in Japan used a language system to produce books that only women would understand about the oppression they experienced. Written language was used to spread religious dogma, particularly in Europe, as the Christian church used the written word to reinforce their religious viewpoints (Boyarin, 1993; Diringer, 1968; Manguel, 1996).

As society progressed to the Industrial Age, organizations were structured in a top-down fashion where decisions were made at high levels in the societal structure and were communicated downward. Only those in power were literate (Bell, 1977; Burton-Jones, 1999; Reich, 1992). In the post-industrial economy, businesses shifted to a more horizontal approach, where employee teams were empowered to identify and solve problems (Bell, 1977; Burton-Jones, 1999; Reich, 1992; Lankshear & Knobel, 2007). Organizational structure adjustments within companies caused a change in literacy as teams were tasked with identifying issues, locating information quickly, synthesizing

information, and communicating a solution. Often, this was done with reliance on the Internet, as using online technologies allowed people to communicate more easily, share information, and solve problems (Gilster, 1997; Harrison & Stephen, 1996; Leu et al, 2013). As digital tools allowed greater access to large amounts of information, workers needed to efficiently develop technology skills (Gilster, 1997; Harrison & Stephen, 1996).

In the 1900s, citizens were considered literate if they could read and write their names and, in the late 1900s, if they could read a familiar text and answer literal questions. In today's society, traditional as well as new literacy skills are needed (Baker, 2010). Simsek and Simsek (2013) posit that before the inception of the Internet, information was obtained mostly from newspapers, books, radio, television, and films and, thus, was described as "print literacy" (p. 129).

As democracy developed and public schools were established, schools were charged with creating literate, informed citizens. Children become literate through socialization in school and home through reading and engaging with texts; thus, students who were not immersed in a rich literate culture entered school in need of more practice and immersion in literacy activities (Gee & Hayes, 2011).

Changes in literacy are a result of social forces within a society and the technologies these forces produce (Abrams, 2015; Baker, 2010; Lanskear & Knobel, 2007; Leu et al., 2004; Boyarin, 1993; Diringer, 1968; Manguel, 1996; Street, 2003). In 21st century society, adults and children are saturated with accelerated and automatic media coverage which requires a new set of literacy skills, more broadly defined than the traditional ability to read and write (Baker, 2010; Jones-Kavalier & Flannigan, 2008).

The way information is obtained changed significantly with the emergence of the Internet, and applications such as Twitter, blogs, and Facebook, and mobile technologies (Mishra & Koehler, 2006; Simsek & Simsek, 2013).

New literacy studies propose that the importance and use of technology are determined by social, cultural, historical, and institutional practices (Hagood, Stevens, & Reinking, 2003; Lankshear & Knobel, 2007; Baker, 2010). Foundational literacies continue to be important with the development of ICTs and new literacies (Leu et al., 2004). In the 1990's, pre-Internet literacy materials at home and school consisted of printed papers, books, pencils, and pens; however, now there is a continuum of print-based and computer-related multimedia (Baker, 2010). As a result of new literacies, different and more complex skills are necessary to understand and use technology, and to gain information from it. In the past, literacy was built on foundational skills such as phonemic awareness, word recognition, vocabulary, comprehension, and spelling, and these skills would build on one another to make a student literate with printed material. However, these skills are insufficient for Internet and ICT literacy (Hartman, Morsink, & Zheng, 2010). Literacy today means understanding new technologies such as Google Docs, Skype, Dropbox, Facebook, and Foursquare, and preparing for ongoing changes in technology (Baker, 2010; Leu et al., 2013).

The Development of Online Literacy

The Internet is becoming increasingly important in daily life, and it is changing the way information is accessed, used, and exchanged (Dalton & Proctor, 2008; Pew Research Center, 2014). According to Internet World Statistics (2014), approximately 45% of the world's population is now online. Learning in the 21st century poses new

challenges for readers, such as the flood of information available and dealing with new and complex technology (Alexander & Jetton, 2000; Lankshear & Knobel, 2007; Churches, 2009). Schools in the United States still focus on print literacy, but there has been a change recently to a focus on digital literacy (Baker, 2010; Beach, 2014; Mishra & Koehler, 2006; Powell et al., 2015). Rather than replacing traditional literacies, new literacies build upon foundational literacies (Coiro, 2003; IRA, 2002; RAND Reading Study Group, 2002; Sutherland-Smith, 2002). An awareness of foundational literacies is essential for students to read online. Foundational literacies include phonemic awareness, recognizing the connection between letters and sounds, and fluently reading words, phrases, and sentences (Lyon, 1997; Neuman & Roskos, 1997; Vukelich, 1994). Foundational literacies are used in conjunction with online literacy to allow students to read for meaning in online texts (Coiro, 2003; IRA, 2002; RAND Reading Study Group, 2002; Sutherland-Smith, 2002).

Learning to read begins at a very young age when children are immersed in print-rich environments (Durkin 1966; Holdaway 1979; Teale 1982). Children who read often are exposed to sounds of language, rhyming, and foundations for phonemic awareness (Lyon 1997; Neuman & Roskos 1997; Vukelich 1994). As children are exposed to literacy, they recognize letters and sounds and the connections in between. Reading develops from students' ability decoding words and then develops into scholars reading fluently and comprehending, or reading for meaning (Chall, 1983). Strategies for successful online reading, such as rapid decoding, word recognition, fluency, monitoring understanding, and identifying and locating information, are similar to those for offline reading (Afflerbach & Cho, 2009; Leu et al, 2015; Presley & Afflerbach, 1995).

However, online reading requires more complex and higher order thinking skills and strategies (Coiro, 2011; Dwyer, 2016; Leu et al, 2015) often focused on inquiry and learning (Kuiper & Volman, 2008). Web literacy includes being able to incorporate key reading and navigation skills such as accessing, analyzing, and processing information (Sutherland-Smith, 2002). Online reading is focused on the multimedia environment students are engaged with and how students navigate these environments, especially the Internet (Baker, 2010; Alvermann, Hinchman, Moore, Phelps, & Waff, 1998; Dyson, 1999; Flood & Lapp, 1995). Readers must be able to navigate, create, write, collaborate, and participate online (Dwyer, 2016). The size of the Web and the speed of the online text require students to locate and comprehend information quickly and accurately (Kuiper, Volman, & Terwel, 2008; Pachtman, 2012). Moreover, reading on the Internet permits nonlinear strategies, requires visual literacy skills, is interactive, and often blurs the relationship between reader and writer (Sutherland-Smith, 2002). Students jump from one place to another via hyperlinks and different media forms, such as videos (Kist, 2005; Coiro, 2011), and students must evaluate sources when conflicting information is found (Sutherland-Smith, 2002). Additionally, online reading is often social in nature (Lankshear & Knobel, 2006). New text forms are electronic, digital, interactive, and constantly changing, e.g., Internet-based e-mail, instant messaging, chat rooms, message boards, threaded discussions, image-based digital photography, video, movies, social networking, and virtual worlds (Baker, 2010; Pachtman, 2012). Reading online is complex, and as teachers navigate teaching online literacy, standards can provide clarity for creating online curricula (Coiro & Kennedy, 2011; Castek & Coiro, 2015; Leu et al., 2013; Abrams, 2015).

With the development and rapid increase of these varied forms of teaching and learning, there is a lack of clear, consistent, and rigorous educational standards for online literacy (Coiro & Kennedy, 2011). In the United States, the Common Core State Standards (CCSS) were developed to prepare students for college and careers of the 21st century, including literacy and new technologies (Castek & Coiro, 2015; Leu et al., 2013). Coiro and Kennedy (2011) suggest that CCSS are critical in establishing a consistent foundation and in fostering collaboration among states that have adopted the Common Core. The standards ask readers to engage in close reading, or reading a complex text multiple times to discover the layers of meaning and to participate in inquiry-based print and digital activities (Boyles, 2013; Coiro et al., 2014). While CCSS address technology, they focus on student interaction with multiple media sources and neglect student experiences with technology in and out of school. The standards prescribe a broad scope of technology use and integration in the classroom (Abrams, 2015). CCSS, combined with the International Society for Technology in Education (ISTE) standards, however, focus on the educators' responsibility for student learning (Abrams, 2015). ISTE standards articulate goals such as creativity and innovation, communication and collaboration, research and information fluency, digital citizenship, and technology operations and concepts (Abrams, 2015). Abrams (2015) argues for a combination of Common Core Standards and ISTE standards to include student experiences in and out of school, and an overall application of complex thinking around technology. Creating technology standards for teachers is essential to provide clarity on what to teach; however, this is immaterial if students are not provided access to the Internet and technology devices.

Lack of Internet access may be an important factor in students' ability to comprehend online texts. School literacy has been and continues to be dependent on the availability of technology (Leu et al., 2004), and a substantial gap exists in student reading skills as measured by socioeconomic levels (National Center for Educational Statistics, 2011, 2013). Equal access to technology depends on geographical location, socioeconomic status, and diversity of needs (Livingstone & Bulger, 2013; Hargittai & Hinnant, 2008; Leu et al., 2015; Dalton & Proctor, 2008; Dwyer, 2013). In a study conducted in 2013, the United Nations Children's Fund (UNICEF) found insufficient information about Internet use among children in underdeveloped countries. Moreover, among children in developed countries, many of the interactive features of the Internet are not used (Livingstone & Bulger, 2013). Hargittai and Hinnant (2008) suggest that children from higher socioeconomic backgrounds use the Internet for educational programming, increasing the technology gap. As a society, we are in danger of developing two distinct classes: one that is poor, minority, and challenged by new literacy requirements and one that is advantaged, white, and excels with new literacies required for reading and learning on the Internet (Leu et al., 2004). Digital technologies are not available in all classrooms and there is a digital divide between those who can afford technology and those who cannot (Baker, 2010). Other concerns are broken computers, labs used only for standardized testing, Internet connectivity issues, and outages in classrooms (Abrams, 2015; Jones-Kavalier & Flannigan, 2008). The United States National Center for Education Statistics (2012) report that students are using computers only to connect to the Internet and not for creative purposes. Jones-Kavalier and Flannigan (2008) suggest that there is lackluster professional development in

technology; classrooms today are filled with digitally literate students led by linear-thinking teachers. Teachers who foster critical inquiry are more often found in high-income schools (Warschauer, 2007). Because of these disparities and the increasing use of technology in schools, research into the best practices for teaching comprehension is intensifying (Henry, 2007; Livingstone & Bulger, 2013; Hargittai & Hinnant, 2008; Leu et al., 2015; Dalton & Proctor, 2008; Pew Research Center, 2014; RAND Reading Study Group, 2002).

Online Reading Comprehension

While there is promising evidence that technology can improve reading achievement, the introduction of ICTs can present new challenges (Hargittai & Hinnant, 2008). Students who struggle to comprehend printed text may have even more difficulty with the speed of online texts (Leu & Kinzer, 2000). Comprehending traditional print texts requires students to be active readers while constructing meaning from a text (Bransford, Barclay, & Franks, 1972; Kintsch & Kintsch, 2005; Pearson, Roehler, Dole, & Duffy, 1992). Readers must be able to infer, draw connections to the text, and use prior knowledge, while self-regulating reading comprehension strategies depend on the text being read (Dole, Duffy, Roehler, & Pearson, 1991; Pressley & Afflerbach, 1995). In narrative texts, readers have to connect and comprehend the main components of the story, while comprehending informational texts includes being able to readily identify genre specific vocabulary, understand multifaceted concepts, and recognize unfamiliar text structures (Graesser, Golding, & Long, 1991; Paris & Paris, 2003; Weaver & Kintsch, 1991). Studies have shown that children and adults have a more difficult time reading informational text than narrative text (Biancarosa & Snow, 2004). Reading

online is often done in response to a question (Leu et al. 2015) and reading in response to a question is different from reading for pleasure (Taboada & Guthrie, 2006). As the range of texts increases, engaging in reading comprehension restructures the reader's cognitive process (Alexander & Fox, 2004).

The same skills needed for comprehending traditional texts apply to reading and researching digital texts (Goldman et al., 2012; PIAAC Expert Group on Problem Solving in Technology-Rich Environments, 2009). Yet, reading online requires additional skills: searching accurately for information, evaluating resources, and synthesizing new information in inquiry-based learning (RAND Reading Study Group, 2002).

Researchers have just begun to understand how reading online differs from reading in traditional texts and there is a lack of valid and reliable assessments to measure online reading (Coiro & Kennedy, 2011; Hartman et al., 2010). While students are connected to digital technologies outside of the school environment, they are struggling to use the Internet and other technology for academic purposes (Alvermann, 2008; Dwyer, 2016; Kuiper, Volman, & Terwel, 2008). Students lack adequate online search skills and strategies to locate and evaluate information (Dwyer, 2016; Fabos, 2008; Kuiper, Volman, Terwel, 2008). Additionally, it is difficult for some young readers to escape confusion from the online environment (Bennett, Kervin, & Matton, 2008; Ito et al., 2009; Leu, Kinzer, Coiro, Castek, & Henry, 2013; Williams & Rowlands, 2007). For example, online research demands that students possess effective keyword search strategies, inferring which link will be useful in response to a question and they must know how to scan for important information on the websites they select (Bilal, 2000;

Eagleton, Guinee, & Langlais, 2003; Kuiper & Volman, 2008; Rouet, 2006; Rouet, Ros, Goumi, MacedoRouet, & Dinet, 2011). Students must also be able to critically evaluate online information, which is different from evaluating traditional print because the information is more varied (Bråten, Strømsø, & Britt, 2009; Coiro, 2009; Leu, Kinzer, et al., 2013; Kuiper & Volman, 2008). Finally, synthesizing information from many sources is the most challenging comprehension strategy because it requires students to fully understand multiple texts from unlimited sources (Coiro, 2009; Jenkins, 2006; Keene & Zimmermann, 1997; Dole, Duffy, Roehler, & Pearson, 1991).

Dwyer (2016) posits that to help students work online at higher levels, teachers need to engage students in thinking that is authentic, meaningful, and inquiry-based. Inquiry experiences can help students develop problem-solving skills, which allow them to adapt to different situations. Inquiry-based assignments are nonlinear, individual, and flexible (Alberta Learning, 2004). Students should ask their own questions about real-world topics, generate search terms, investigate their search results critically while locating information, and finally, communicate the information to others (Sekeres et al., 2014; Dwyer, 2016). Sekeres et al. (2014) structured an inquiry task for third through fifth grade students. Pairs of students were asked to question, navigate, and negotiate online texts. Students were to recommend, for a new toy store, eco-friendly toys that children would enjoy. They used the Internet to research what makes a toy eco-friendly and sent an email recommending the toy to the toy shop owner, and describing their reasons for choosing it. Teachers led students through hyperlinks to locate helpful information. Findings suggest that partners who carefully engaged in the teacher-created

web page and self-monitored their learning gave more thoughtful and thorough responses (Sekeres at al., 2014).

Kuiper, Volman, and Terwel (2008), use the term "Web literacy" to describe the skills students need to navigate the Web: searching, reading, and evaluating. Dalton (2015), invites educators to engage their students in a web literacy map, which includes exploring (navigating), building (creating) and connecting (participating). Exploring the Web includes searching and analyzing it for credibility. Teachers show students how to safely use the Internet. Building involves creating podcasts, blogs, and websites. Connecting teaches students how to share, collaborate, and connect on the Internet (Dalton, 2015). Leu et al. (2013), suggest five processes for students during online research and comprehension:

- reading to define important questions;
- reading to locate online information;
- reading to critically evaluate online information;
- reading to synthesize online information; and
- reading and writing to communicate online information.

The Pedagogical Shift

Teaching is multifaceted and draws on many skills and requires educators to be flexible and have access to a variety of information sources (Glaser, 1984; Putnam & Borko, 2000; Shulman, 1986, 1987). As technology becomes more prevalent in schools, teachers must develop the pedagogical knowledge to appropriately engage students in technology (Storz & Hoffman, 2013; Tozkoparam, Kiliç,& Usta, 2015). Technology alone cannot help students learn; however, if teachers know how to use ICT to enhance

student thinking, a positive result can occur (Koehler & Mishra, 2005; Loveless and Dore 2002). Unfortunately, teachers are often asked to apply technology skills on their own through trial and error, and often may approach technology with apprehension (Kent & McNergney, 1999; Dwyer, 2016; Mishra & Koehler, 2006; Storz & Hoffman, 2013). Mishra and Koehler (2006) posit that the use of technology by teachers requires Technological Pedagogical Content Knowledge (TPCK). They argue for a theoretical framework that draws on the relationship between content, pedagogy, and technology, which can transform the practice of teacher education and professional development. Technology is often handed to teachers without proper training or explanation of what they should do with it (International Society for Technology in Education, 2000; National Council for Accreditation of Teacher Education, 2011; U.S. Department of Education, 2000). Rather than technology being given to teachers without direction, the primary focus on teacher education in technology should be on how the technology is used in the classroom (American Association for the Advancement of Science, 1999, 2001; Issroff & Scanlon, 2002; Selfe, 1990). In a study conducted in Europe, researchers found that students struggled more with comprehension of online texts than with traditional texts. At the conclusion of their study, the researchers proposed a Teacher's Guide to support late primary and secondary teachers in planning online reading lessons using Think-Alouds (Carioli & Peru; 2016).

Teacher education begins with nationally recognized standards and continues with professional development and lesson creation (ISTE, 2000; National Council for Accreditation of Teacher Education, 2011). Technology alone will not impact student learning, unless the instruction, or the way the content is designed, delivered, and

supported, is adjusted (Barbour, McLaren & Zhang, 2012). Teachers need not only the pedagogy, but also the subject matter content (Ball & McDiarmid, 1990; Shulman, 1986). The International Society for Technology in Education (2000) developed book lessons for teachers to use as a starting point for integrating technology in their classrooms.

Historically, teacher education has focused on pedagogical practices absent content knowledge or subject matter (Ball & McDiarmid, 1990). Shulman (1986) introduced Pedagogical Content Knowledge (PCK), an intersection of pedagogical and content knowledge where teachers address both facets concurrently. Mishra and Koehler (2006) posit that technology plays a critical role in education; and while some teachers have not embraced it, technology will advance in spite of any resistance. In conjunction with pedagogical and content knowledge, teachers need to learn the skills for current tools, as well as for technology that has not yet been created (Mishra & Koehler, 2006). Through the TPCK model proposed by Mishra and Koehler (2006), teachers engage in technology through pedagogical knowledge and content knowledge inclusively. One area in which teachers can engage in content through technology is blended learning. In order to provide background for blended learning, the next section will describe the emergence of blended learning, provide a definition of the term along with instructional models and, lastly, review of the advantages and challenges when implemented in classrooms.

The Emergence of Blended Learning

In the early 1980s, personal desktop computers were used to digitally record study materials on tape, and the first offline distance learning occurred by using pre-recorded lectures or sending prepared learning materials to individuals by physically mailing them

(Horvath, Peck, & Verlinden, 2009). An increase of ICTs and access to computers and iPads in schools has caused schools to adapt daily instruction to the technological changes students are engaging in outside of school (Bruno, Silva, & Teixeira, 2012). Internet development allows for an introduction of hybrid modes of instruction that marry face-to-face and distance learning tools, and blended learning has opened learning options for students and teachers (Osguthorpe & Graham, 2003).

Blended learning is not just about technology but, rather, a shift in the instructional model, which allows for a student-centered learning environment (Powell et al., 2015). Blended learning has become a term for many different technology enhanced classroom experiences and an umbrella term for technology-based instruction (Abrams, 2015; Horn & Staker, 2011; Fisher & Frey, 2012). It is projected that in 2019, 50% of all high school courses will be delivered online (Horn & Staker, 2011), creating an interest in blended learning and other teaching methods that blend technology with traditional teaching. Educators are increasingly creating blended learning environments where students learn online for at least part of their instructional time. Blended learning includes online instruction, but centers on content delivery (Abrams, 2015). Ellis, Steed and Applebee (2006) posit that the goal of blended learning is to facilitate quality learning.

Defining Blended Learning

Blended learning has many different names and definitions, and the term is being used with increased frequency, with much disagreement regarding its meaning (Horn & Staker, 2011; Powell et al., 2015). Other terms for blended learning include hybrid learning, distance learning, and eLearning. eLearning's corollary, eTeaching, is defined

as combining learning in a traditional classroom with online learning (Bruno, Silva & Teixeira, 2012; Gulbahar & Madran, 2009; Duhaney, 2004; Young, 2002; Powell et al., 2015). Some researchers define blended learning as any instance in which a student learns at least part of the time in school, and part of the time through online delivery where the student has some control over individual learning through time, place, path and/or pace (Singh, 2003; Horn & Staker, 2011). Other researchers argue that blended learning is not just adding more technology tools, but rather a true blend of teaching in the classroom and digital environments (Welker & Berardino, 2006; Fisher & Frey, 2012). According to Caravias (2014), blended learning provides four important advantages: flexibility with time; independence for students; time for reflection; and meeting different students' needs and learning styles. In a study of teacher conceptions of blended learning, Ellis, Steed, and Applebee (2006) found that teachers described blended learning as critically investigating changes in the world, actively building understanding, duplicating ways of learning using different methods, and using different types of media.

Blended Learning Models

Researchers have studied several models of blended learning: (a) face-to-face, (b) rotation, (c) flipped, (d) flex, and (e) virtual classrooms (Horn & Staker, 2011; Powell et al., 2015; Abrams, 2015; Fisher & Frey, 2012). Face-to-face learning involves the teacher delivering most of the instruction, with students participating in online learning case-by-case or to supplement the information being taught. Students engaging in online instruction are often located in the in the back of the room, with the computer screens facing the teacher so student online interactions can be monitored (Horn & Staker, 2011).

In the rotation model, students rotate on a fixed schedule or at the teacher's discretion between learning online and face-to-face with the teacher (Horn & Staker, 2011; Powell et al., 2015). The rotation model includes sub-models: station rotation, lab rotation, flipped classroom, and individual rotation. The station rotation model allows for students to rotate among all stations and the lab rotation allows students to move to a separate room where the computer lab is located for online learning (Powell et al., 2015).

In flipped classrooms, students encounter new information and skills at an off-site location through assigned materials and then apply their knowledge in class (Abrams, 2015; Fisher & Frey, 2012; Powell et al., 2015). Teachers may use short videos prepared by themselves or others to introduce content and skills (Fisher & Frey, 2012), providing the teacher with more time to meet students' targeted needs (Abrams, 2015).

In a flex model, the online platform delivers most of the instruction and the teacher provides support as needed through tutoring and small group instruction (Horn & Staker, 2011). Students report primarily to a school building and move through courses individually (Powell et al., 2015). In virtual classrooms, on-line distance learning creates a face-to-face view for students through video or media conferencing, often in virtual classrooms (Horvath, Peck, & Verlinden, 2009). According to Osguthorpe and Graham (2003), there must be a balance between online and face-to-face learning; this varies depending on the teacher.

Advantages and Challenges of Blended Learning

A blended learning environment offers five advantages: (a) students can work independently at their own pace, (b) student work can be personalized, (c) blended learning is flexible for teachers and students, (d) material students are currently working

on or have worked on in the past is easily accessible, and (e), and students have access to the best of traditional teaching and web-based learning (Anderson & Elloumi, 2004; Rosenberg, 2001; Horton & Horton, 2003; Rudestam & Schoenholtz-Read, 2002).

Blended learning can revolutionize classrooms by allowing students to work at their own pace, requiring fewer but more specialized teachers, and it allows for personalized learning (Horton, 2000; Horn & Staker, 2011). Masalela (2009) suggests that blended learning allows students to be self-directed, independent learners who develop critical thinking skills. As students enter the workforce, they find that employers are requiring that their workers possess the skills to gain and analyze information, and problem-solve, often using online resources (Powell et al., 2015).

Dzakiria, Wahb, and Rahman (2012) state that blended learning provides the flexibility for learning to take place anywhere, at any time. With the teacher's guidance, students can be free to decide which lessons they will learn (Bouhnik & Marcus, 2006), and they are less dependent on the teacher's time constraints (Edginton & Holbrook, 2010). Blended learning can combine the strengths of traditional classroom strategies with the advantages of Web-based instruction. Content can be delivered in both the classroom and in a virtual environment, where teachers and students can communicate face-to-face or online (Gulbahar & Madran, 2009). While there is a wealth of programs and sites available to teachers, Abrams (2015) warns that educators need to examine programs they use and adapt them for students' needs, rather than using them as is.

Gonzalez-Gomez, Jeong, Airado Rodriguez, and Canada-Canada (2016) evaluated the effects of a flipped classroom on student performance. The participant group was comprised of sophomores attending a science course at the University of

Extremadura in Spain. A control group and a flipped classroom group were given video lessons and reading materials online to review before class. The researchers found a statistically significant difference in assessment results. Students in the flipped classroom performed higher on average than students in the control group (Gonzalez-Gomez et al., 2016).

Teachers who use a learning management system such as Google Classroom or Moodle can share course resources and assignments, and use discussion boards and blogs to support blended learning and facilitate access to instructional materials (Caravias, 2014). Simply putting technology in front of children will have little impact on student achievement if teachers are not supported in managing and utilizing it (Caravias, 2014). Teachers must adapt to new technologies in order for students to benefit from blended learning (Piccoli, Ahmad, & Ives, 2001). Frustration can occur when there is uncertainty about what students' and teachers' roles will be, and how often classes will be face-to-face versus online (Osguthorpe and Graham, 2003). Remote learning requires facilities to have fast, reliable networks and reasonably up-to-date equipment (Horvath, Peck, & Verlinden, 2009). Garrison and Vaughan (2008) suggest that success is best achieved when in-class activities reinforce online activities, learning shifts from teacher-centered to student-centered, students are responsible for navigating online resources, and a teacher-created evaluation instrument is used to provide frequent feedback.

What are Students Doing Online?

Many classroom teachers use online programs to enrich literacy. Pennsylvania's Spring City Elementary Hybrid Learning School uses Compass Learning, Achieve 3000, Reading Eggs, and Education City as online curricula (Powell et al., 2015). Other

teachers use online platforms to individualize instruction. Nolan Elementary and Middle School in Detroit, Michigan used Buzz, an online platform, to assign personalized learning pathways. Although challenges exist, teachers in traditional schools are adapting their classrooms to include the Web-based world in which their students live (Powell et al., 2015).

Merchant (2010) used a virtual world program created by educators in the United Kingdom to gain insight into whether virtual worlds could promote digital literacies. Students communicated with each other through avatars, and used environmental print, tool tip cues where they could mouse over objects to access hyperlinked texts and interactive chat with other students or teachers. The students' goal was to discover who destroyed the virtual world. Interviews with the students were conducted in the virtual world in which the interviewer was an avatar. Merchant found that both teachers and students enjoyed working in the visual worlds, and engagement levels were high. His study gave teachers an idea of the possibilities of blended learning (Merchant, 2010).

Lotherinton and Chow (2006) created a project where students were exposed to several forms of the story *Goldilocks.* The students created their own version of the story using digital photography or Hyperstudio. The researchers found that students' versions were much more complex and contained more elements of popular culture than the older versions. The children "interlaced old and new literacies, moving from the paper to screen with ease and flexibility and, in the process, were transformed from passive emergent readers to authors working inside their own text versions" (p. 251). Kindergarten students from an inner city school were able to use digital technology with ease and, in turn, became authors of new versions of *Goldilocks*.

Schorr and McGriff (2012) reviewed a blended learning model called School of One, where students received math instruction from online content providers, then worked in small groups with a teacher using data collected daily. Students and teachers received real-time, automatic data from the online providers that allowed them to plan for the next day's instruction.

Summary

The purpose of this study is threefold: (a) to examine how blended learning is used in three fifth grade literacy classrooms; (b) to determine in what specific ways students were engaged in blended learning; and (c) to determine how the findings of this examination change how teachers instruct and learners learn. This chapter provided a review of the ways in which literacy instruction has changed from primarily print material to a combination of print material and digital technology. The advancement of ICTs has forced educators to think differently about what they are teaching and how they are teaching it. Changes in technology have been met with challenges and successes. Blended literacy instruction has taken on various forms and functions and looks quite different from one classroom to another. Studying how blended learning is implemented in elementary schools – mainly what teachers and students are doing in blended learning and the impact it has on teacher decision making – will add to the growing research on blended learning and has the potential to help educators determine which instructional approaches yield the best results.

CHAPTER 3: METHODOLOGY

Additional research is needed on blended learning in elementary schools, specifically regarding what students are doing and how that changes the way teachers teach and students learn (Bergmann and Sams, 2008; Drysdale, Graham, Spring & Halverson, 2012; Jacobs, 2014). In an effort to add to the body of research and to support teachers in improving planning and instruction in a blended learning classroom, I examined fifth grade students' online activities in blended learning literacy classrooms, and explored how blended learning changes the way teachers teach and students learn.

This chapter provides a description of the research design including the setting, participants and methods, data analysis plan, and limitations to the study. The purpose of this study was to examine the activities of nine students in three fifth grade literacy blended learning classrooms, and to discuss how teaching and learning is affected by blended learning. I used a qualitative case study approach to answer the following research questions:

1. What is blended learning as it was enacted in three fifth grade classrooms?
2. In these blended learning classrooms, what online texts and activities are assigned to fifth grade students, and in what types of traditional reading are they participating in the classroom? How do students engage or respond to assigned online activities?
3. Considering these texts and activities, how does blended learning change the teaching and learning of reading?

The qualitative method was best suited for this study because, through observation and interviews, I gathered rich data to examine what students were doing online and how blended learning changed teaching and learning. A qualitative research design allows for examination and development of theories, or statements, about relationships between concepts that focus on meaning and interpretation (Ezzy, 2002).

Qualitative research is an inclusive term covering several forms of inquiry that support understanding of the meaning of social phenomena (Schostak, 2005; Merriam, 1997; Wiersma & Jurs, 2009). Qualitative researchers are interested in the understanding of meaning people have created, or how people make sense of their world, from the participants' perspectives (Merriam, 1997; Dyson & Genishi, 2005). Another characteristic of qualitative research is that unlike other methodologies, the researcher is the primary instrument for data collection and analysis (Merriam, 1997). Additionally, qualitative data research typically involves fieldwork done in person by the researcher in order to observe participants in their natural settings (Glaser & Strauss, 1967; Merriam, 1997). Since qualitative research focuses on meaning and understanding, the product of the research is typically rich in description, as the research is displayed verbally with direct quotes from participants (Merriam, 1997). For this qualitative study, a case study design was employed to better understand what fifth grade students were doing in their literacy classrooms. In the remaining sections of this chapter, the case study design, the specifics of each school, and the details of the participants are described. Finally, the data methods used in the study are described in detail.

Case Study Design

I utilized a case study design to determine what fifth grade students were doing online in literacy classrooms. Case studies are used to contribute to our knowledge about a certain group and in order to understand a complex phenomenon (Yin, 2009). Duke and Mallette (2011) describe case studies as descriptive and non-experimental. A case study is an empirical inquiry that investigates a phenomenon in depth and relies on multiple sources of evidence, which are triangulated during data analysis (Yin, 2009).

Components of case study research design include the study's questions, its propositions, the unit(s) of analysis, the logic linking the data to the propositions, and the criteria for interpreting the findings (Yin, 2009). Construct validity, internal validity (explanatory or causal case studies only), external validity, and reliability are used throughout the case study to establish the quality of the research design (Yin, 2009). Case studies can be single-case or multiple-case, and can be holistic or embedded. A single-case study is focused on a single case, often where there is a unique case, whereas a multiple-case study has more than one case (Yin, 2009).

In this multiple-case study, I examined students' online activities and how those activities affected teaching and learning. Research was conducted in three classrooms in three different schools. Both within-case and cross-case designs (Miles & Huberman, 1984) were used to answer the research questions. The initial two questions were answered using a within-case study design:

1. What is blended learning as it was enacted in three fifth grade classrooms?
2. In these blended learning classrooms, what online texts and activities are assigned to fifth grade students, and in what types of traditional reading are they

participating in the classroom? How do students engage or respond to assigned online activities?

During and after data collection, a within-case analysis was employed to examine each case carefully and to create themes. Each case was observed as data were collected to inspect two things: (a) what students were doing online, and (b) themes within each case.

A cross-case design was used to answer the third research question:

3. Considering these texts and activities, how did blended learning change the teaching and learning of reading?

To answer this question, I examined three cases for themes that extended through each of the cases. The themes were examined to discover larger themes across all case studies. Data analysis is further discussed in Chapter four.

Research Context

Description of Setting

This study took place in three elementary schools: Everbrook Elementary, Allen Park, and Norfolk Elementary (all pseudonyms). All three schools are public schools located adjacent to a city in the southeastern United States. Everbrook and Allen Park were recipients of funding from a nonprofit organization that raised supplementary funds for elementary and middle schools that feed into the high school with the lowest test scores in the district. Blended learning classrooms were created to raise academic performance at these schools. Through blended learning, classrooms could accommodate more students who would be placed with highly effective teachers, with a goal of improving test scores. Teachers were vetted through an interview process that required

them to provide student data proving their effectiveness. Selected teachers were paid higher salaries, and had more students (35-40 students) in their classes than an average class (20-25 students). The assumption was that technology would allow the teacher to differentiate and increase instructional impact. Demographics for each school are listed below.

Everbrook Elementary is a Title One school that serves students in kindergarten through fifth grade. Enrollment for the 2014-2015 school year was 526. The student demographics include: 9% Hispanic, 80% African American, 9% Asian, 1% Indian, 1% Mixed Races, and 2% White. Forty-eight percent of students are Female and 52% are Male. Everbrook was chosen as a site for this study because it has a fifth grade blended learning classroom.

Allen Park Elementary is a Title One school that serves students in kindergarten through fifth grade. Enrollment for the 2014-2015 school year was 565. The student demographics include: 2% White, 7% Hispanic, 91% Black, 0% Asian, and 0% Native American. The gender demographic is split evenly: 50% Female and 50% Male. The 2014-2015 school year was the second year Allen Park engaged in blended learning. The fifth grade classroom teacher, Ms. Jacobs (a pseudonym) was known among county leaders for her success in using blended learning in her classroom.

Norfolk Elementary is a Title One school that serves students in kindergarten through fifth grade. Enrollment for the 2014-2015 school year was 795. The student demographics include: 4% White, 52% Hispanic, 41% Black, 2% Asian, and 1% Native American. The school has 46% Females and 54% Males.

Description of Participants

Teacher participants were selected based on established relationships I had established with them. The first teacher, Ms. Jacobs, was in her fifth year of teaching at Everbrook Elementary. She has teaching experience in third, fourth, and fifth grades. Ms. Allen, from Everbrook Elementary, a fifth grade blended learning teacher in her twelfth year of teaching. Prior to her current position, Ms. Allen held several classroom positions and served as a literacy facilitator and an assistant principal. Ms. Nash was the most experienced blended learning teacher, with three years of teaching experience using a blended learning model. She was in her fourth year of teaching and taught fifth grade all four years.

In this multiple case study, I used purposeful sampling. Student participants were selected based on their gender, demographics, academic ability, and willingness to be part of the study. I sought a diverse mix of students among the relatively small number included at each school site. The teachers assisted me in selecting students who would provide the richest data.

Three students were selected from each classroom, for a total of nine study participants. These students were purposefully selected so that the mix of demographics and gender mirrored that of the classroom (Duke & Mallette, 2011). The teachers collected parent permission slips (see Appendix B) from all willing study participants. The teachers then identified groups of students as struggling (low), on grade level (medium), and above grade level (high). One student was selected from each group.

I selected three African American females from Everbrook Elementary; two African American Females and one African American Male from Allen Park Elementary;

and two Females (one African American and one Hispanic) and one African American Male from Norfolk Elementary. The students selected were not an exact representation of the school's demographics. For example, at Norfolk Elementary, 35% of students were white but no White students were selected. Permission slips were not sorted based on demographics, so it could be assumed that fewer White students agreed to participate, or that they simply were not chosen during the random selection.

Table 1: *School Information*

School	Teacher	School Demographics	Participant Demographics
Everbrook Elementary	Ms. Allen	9% Hispanic, 80% African American, 9% Asian, 1% Indian, 1% Mixed Races, and 2% White	3 African American Females
Allen Park Elementary	Ms. Jacobs	2% White, 7% Hispanic, 91% Black, 0% Asian and 0% Native American	1 African American Male 2 African American Females
Norfolk Elementary	Ms. Nash	4% White, 52% Hispanic, 41% Black, 2% Asian and 1% Native American	1 Hispanic Female 1 African American Male 1 African American Female

Data Collection Methods and Process

I used multiple data sources: observations, semi-structured interviews with teachers and students, and field notes for triangulation of data collection in order to increase validity of findings. I kept a daily reflective journal (memo) to capture initial thoughts and questions, and to reflect on subjectivity during data collection. During the study, I observed each school and interviewed student participants three times. I kept notes on the observations; interviews were recorded and transcribed within two days.

Observations

Observations captured students' online activities in their traditional literacy classrooms and blended learning. Using Microsoft Word, I documented field notes of the setting, participants, lessons, and events. With an iPad, I kept a visual record of student activities in the classroom during traditional teaching and blended learning instruction. I also created a chart with two columns to record what was seen and heard in the classroom and to note thoughts and questions for later reflection and possible themes.

Video Observations

After the first observation and before the first interview with each student, Ms. Nash and Ms. Jacobs videotaped all three participants separately during blended learning. The purpose of the video was to ask students what they were doing during the clip, and specifically discuss what they were doing during blended learning. During the first interview, the students and I viewed the video and then the students described what they were doing online during the taping. Student responses provided details about what they were doing online, and generated follow-up questions I could ask.

Interviews

I interviewed each classroom teacher to determine what traditional reading instruction and blended learning look like in the classroom. The initial interviews represented the first face-to-face meeting with the teacher from Norfolk, and the first discussion with the teacher from Allen Park. Together, the teacher and I determined the appropriate time to observe and interview each student. This process also provided understanding about each teacher's initial thoughts on blended learning in literacy. Each teacher was interviewed again at the end of data collection. The focus was on self-reflection and inquiry about how the teacher-participants viewed the effects of blended

learning and what instructional changes would be needed. Additional questions addressed how blended learning started and was implemented in each school and classroom.

I interviewed each student once per visit for a total of three interviews during the research period. The interviews were semi-structured but followed an interview protocol (see Appendix C). Students answered general questions about themselves during the first interview. The research questions were focused on the types of activities students were assigned in traditional literacy class and during blended learning. The student interviews informed the first two questions in the study.

Researcher's Journal

I kept a journal (memo) to record thoughts, analysis, questions, and ideas throughout the study. Patterns, codes, and themes began to emerge. After observing each site, I recorded thoughts about the observation, interviews, and themes. As the data were transcribed and analyzed, I recorded codes, themes, and thoughts. The memo was used as a place to record outlines and organizational structures to develop the analysis. The journal contained a record of subjectivity issues that arose during the data collection process. In addition to the observation notes, a memo was used to record any question or evaluations that were not related to the research.

Weekly Schedule

Week 1. During the first week, I conducted semi-structured interviews with teachers from Allen Park Elementary and Norfolk Elementary schools to get an overall sense of the environment in their classrooms. The teacher interviews focused on how blended learning and their reader's workshop were structured. The teacher from

Everbrook discussed how her students engaged in a lab rotation model and how she saw three sections of students, while the teacher at Norfolk had all of her students all day and they participated in a classroom rotation. The Everbrook teacher taught all subjects to her students, and blended learning was part of their literacy rotation. After the meetings, teachers at Allen Park and Norfolk discussed the study with their students and passed out permission slips to all of the students in their classes.

At Everbrook, there was no need to meet the teacher individually as background information had already been provided about the instructor, classroom, and students. Contact information was collected from the students at Everbrook during the first week of data collection.

Week 2**.** During week two, I conducted an initial observation at both Allen Park and Norfolk Elementary. Permission slips were collected and students were given the chance to ask questions about the study. I traveled to each school, to discuss blended learning and to observe the classroom environment before the official observations. Although these were not formal observations, they were used in data collection and analysis.

I met with the student participants to describe the study process, the observation method, and the schedule, and to answer the students' questions. Teachers were asked to video each of the students during blended learning. The video was used as needed to prompt students to describe what they do in blended learning.

Weeks 3-6. During the remaining weeks of the study I observed the student participants, and interviewed each student individually.

Data Analysis

I used grounded theory for comparative data analysis, and initiated analysis as soon as data were collected and concepts were noted (Glaser & Strauss, 1967). Collected data entered into theory only if they were repeatedly presented (or not presented) in most data collection formats (interviews, observations, and field notes). I then grouped concepts to form categories and provide to constant comparison for similarities or differences, as they occurred throughout the study (Corbin & Strauss, 1990). Open coding, axial coding, and selective coding were used to break down, categorize, and unify the data (Strauss & Corbin, 1990).

Strauss and Corbin (1990) argue that theory can be built through observation of the social world, concepts are categories, and themes are identified as research is conducted. The major difference between grounded theory and other types of analysis is the emphasis on theory development (Glaser & Strauss, 1967; Merriam, 1997). Glaser and Strauss (1967) posit that data gathering should not be influenced by current theories but, rather, data collection and analysis should lead to theories. The end result for grounded theory is that a theory emerges grounded in the data (Merriam, 1997). The theories generated from this study were: limitations for reading online prevented students from using reading strategies taught in traditional reading classes; the wealth of information provided from the Internet posed both advantages and challenges; and support for teachers and students in a blended learning environment was imperative to its success.

Ethical Issues

There were minimal known risks to participants in the study. The three teachers in the study were asked to participate and could withdraw from the study at any time. All student participants were invited to take part in the study and submitted signed parent permission slips. Those selected were involved in the study on a voluntary basis and they could withdraw from the study at any time.

I knew students from Allen Park and Norfolk prior to the study. I held a preliminary meeting with the students to establish a comfort level, and to ensure their understanding of the procedures and the purpose of the study.

I secured all materials in a password-protected file on a personal computer. Hard copies of parent consent, student assent, and teacher consent forms were kept in a locked cabinet at my school. Participant names were kept confidential and pseudonyms were used to ensure anonymity. Audio interview data were deleted after transcription.

Limitations

There were several limitations to the research study. The cases studied cannot be generalized to the larger population; however, other researchers may replicate the study. This study can help teachers and school leaders understand the challenges of blended learning, and the support necessary to its success. Additionally, this study could lead to insights that could be useful to others studying blended learning. Other researchers could use the theories provided in this study and they could lead to other research questions.

I observed two of three schools only during the scheduled times, which might have limited the amount of data collected. Observation time was limited, as was my

availability to observe. Thus, I may have missed instruction that affected the observations.

My role at Everbrook at the time of the study was a literacy facilitator. As a researcher and a facilitator, whose goal is to provide instructional feedback, I used a two column of the chart to record notes about feedback and instruction. In the second column, I recorded observational feedback notes. The purpose of this column was to differentiate observations from feedback I would normally give to teachers. In other words, I wanted to separate myself from the role of facilitator to the degree possible. The chart allowed me to acknowledge the feedback but then focus on what I was observing for purposes of research.

A final limitation is researcher bias. As an educator and avid technology teacher and learner, I felt strongly about the success of personalized learning through blended learning. Because personal and professional experiences informed this study, I used the observation chart and researcher memos to separate evaluation from data collection.

Summary

This chapter outlined the research design. The settings of the studies were described as well as the research methods and data plan analysis. I studied literacy in blended learning in three fifth grade public school classrooms. Data collection included observations, interviews of teachers and students, and research journals. Following data collection, I conducted a within-case and cross-case analysis. Chapter four will describe the data analysis in more depth. It begins with addressing the first two research questions in the study: What was blended learning and what activities were the students assigned, and how did they respond to the activities. The first two questions of the research study

are addressed with a within-case analysis of each of the three classrooms. Themes for each classroom were developed at the beginning of Chapter four. Following the within-case analysis, the third question in the study about how blended learning changed the teaching and learning of reading, was addressed through a cross-case analysis. Chapter four concludes with a synthesis of themes from all three cases.

CHAPTER 4: RESEARCH FINDINGS

The purpose of this qualitative study was to explore what students were doing in traditional and blended learning literacy classrooms, what activities they were engaged in, and how blended learning has changed the way teachers teach, and students learn. Study participants came from three fifth grade blended learning classrooms. I observed and interviewed three students in each classroom over a period of six weeks. Data collected for the study included observations, semi-structured interviews, and the researcher's memos.

This chapter begins by placing research within the context of the literature reviewed in chapter two. Then, a within-case analysis of each case study is examined, looking at each case individually and bringing to the forefront themes within each case. The first two research questions will be addressed in the first section:

1. What is blended learning as it is enacted in three fifth grade classrooms?
2. In these blended learning classrooms, what online texts and activities are assigned to fifth grade students, and in what types of traditional reading are they participating in the classroom? How do students engage or respond to assigned online activities?

As these research questions are addressed, data from each case will be described and themes developed.

Following the within-case analysis, a cross-case analysis will connect all three cases, and themes across those cases will be explained. In this analysis, the connections

between the cases will be examined and discussed. The third research question will be addressed in the cross-case analysis: Considering these texts and activities, how does blended learning change the teaching and learning of reading? The chapter will conclude with final analyses.

Within-case Analysis

Questions remain about the definition of blended learning. It is defined loosely as a mix of traditional teaching and online learning and as "an area of design and inquiry that combines face-to-face and online modalities" (Halverson et al., 2012, p. 381). But what does that mean? Is simply reading online rather than reading in a traditional print text considered blended learning? What is the role of higher order thinking in blended learning? In the three cases studied, blended learning activities varied. In the first case, Ms. Jacobs asked students to research topics discussed in their traditional reading class. Students were reading *The Watsons Go to Birmingham* in class and then were observed engaging in WebQuests about civil rights and slavery. Some students copied and pasted information from the Internet to answer questions posed by the teacher. In the second case, Ms. Allen engaged students in a variety of writing exercises throughout the year, and students participated in a digital Writer's Workshop. Students read about historical fiction in Reader's Workshop, and then researched assigned events and then wrote a piece. In the final case study, Ms. Nash asked students to choose books from LightSail or Raz-Kids (a list of these digital tools, as well as their definitions, can be found in Appendix A). The applications allowed students to read books on their reading level and included questions based on the story. In all cases, students used either Chromebooks or an iPad, but the activities they engaged in on the devices varied. In the third case,

students used the iPad to read, whereas in the first two cases the students used Chromebooks to produce an assignment. In the first two cases, the students used the Internet more to research and add to their wealth of knowledge about a topic. While reading activities on an iPad vary, is using technology to read still considered blended learning?

To answer the question, what is blended learning, I used a within-case analysis to address the first and second research questions and to analyze each school, or case.

Allen Park Elementary School

School Information

At the time of the study, 91% of students at Allen Park were African American, 7% were Hispanic, and 2% were White. Allen Park was a Title I school; 100% of students received free or reduced lunch. Ms. Jacobs, a blended learning teacher, said that she blended her literacy curriculum to include a mix of technology and traditional reading instruction. The school had one other blended learning classroom, middle-school math. The other classrooms at Allen Park had access to technology but were not formally identified as blended learning classrooms.

Allen Park compartmentalized its upper-grade teachers; each teacher taught a different subject. Ms. Jacobs taught literacy, but embedded social studies content in her lessons. Ms. Jacobs taught three sections a day, and the students also rotated to the math and science teachers, and her classroom was a mix of fourth and fifth grade students. The fourth grade students in her class were performing at or above grade level, thus they worked well with the fifth grade students, who spanned ability levels. All of Ms. Allen's students participated daily in blended learning, rotating from the traditional classroom to

the computer lab. The math and science classes were not blended learning classrooms, but students did have access to iPads or Chromebooks. The other teachers in the school were one-to-one with technology, or had a Chromebook or iPad for each student in the classroom. Most teachers used programmed websites, while some used Google Classroom to create and house student assignments.

Classroom Context

Ms. Jacobs was in her fifth year of teaching and had looped with her students for three years, meaning she had taught the same students since third grade. She began blended learning in her classroom starting with fourth and fifth grade. In the first year of implementation, Ms. Jacobs said the school did not have a clear vision for blended learning. Ms. Jacobs had a classroom of close to 40 students. She was given Chromebooks for technology but was not given much direction about what to do with them. In her interview, Ms. Jacobs stated she was given the technology and then simply asked what else she needed. Her school was supportive of the idea of blended learning but it was uncharted territory and, because no one had attempted this before, county and school support was minimal. At her request, the school purchased additional computers and programs such as iReady and Achieve 3000, but Ms. Jacobs was not sure what was best for her students. Ms. Jacobs reported, "The first year was a trial and error of how to do blended learning and what resources to use."

During the first year of implementation, Ms. Jacobs used a classroom rotation model, with half of the students on the Chromebooks and half of the students receiving whole or small group literacy instruction with her. Ms. Jacobs described the first year as "rough," because there was never any formal training in technology. She had to

independently research and create what the students were doing in the lab. The students were mostly engaged in ready-made programs such as iReady, a personalized online program where students took a diagnostic assessment and were given instruction through animated videos, and Achieve 3000, an online program designed to use students' Lexile reading levels to provide non-fiction texts and assessments that increased in complexity as the students' reading skills grew.

In her second year of blended learning implementation, Ms. Jacobs adjusted what students were doing and the activities they were engaged in during blended learning because she wanted to try different formats of blended learning. She arranged student desks in a half circle facing the SmartBoard at the front of the room. On either side of the classroom she placed bookshelves of leveled books for students to read independently. Comfortable chairs and a recliner next to large windows provided independent reading space. Students not engaged in independent reading worked with Ms. Jacobs in small groups focused on identified student needs. During one observation, Ms. Jacobs noticed that students struggled with inferring, a concept they had learned the day before, so she worked with those students in a small group to reinforce the concept while the others read independently.

At the beginning of her third year at Allen Park Elementary School, Ms. Jacobs had a computer lab with a teacher assistant who acted as computer monitor for the students during their lab time. The teacher assistant sat at the front of the room; the students worked at desks situated so the teacher assistant could see the computer screens. The majority of students were actively engaged in teacher-created materials and learning modules based on a unit theme. Students read on various websites, viewed media,

created and wrote using Google Docs, created presentations with Google Slides, participated in discussion boards, and were involved in personalized remedial learning based on need. Although observations showed most students on task, Ms. Jacobs worried about kids "working as hard in the computer lab as they did with me."

Ms. Jacobs noticed that the strategies she taught for reading traditional texts did not easily translate to reading online. Students could not track their thoughts in the margins of the text or highlight on the computer as they did in traditional texts. Ms. Jacobs stated that her "ultimate hope is that students would be able to successfully monitor their comprehension when they read," i.e., they would stop and reread when something didn't make sense. She also wanted them to be able to ask questions, summarize, chunk text, use context clues to identify unknown words, make inferences, and take notes to remember all of the strategies they had used. When I interviewed Ms. Jacobs' students, they mentioned using blended learning strategies such as rereading and asking questions. Terrance reported "going back to the text and rereading" when he did not know how to answer a question. All three student participants in Ms. Jacobs' class mentioned that they did the same. On occasion, Ms. Jacobs asked students to find the answer to questions she posed on websites using their Chromebooks. Ms. Jacobs also wanted students to generate their own questions from the text in both blended learning and the traditional classroom. I observed that students searched for answers to questions posed by Ms. Jacobs more often than creating their own questions. Once students found answers online, they copied and pasted them in the correct place. Students struggled making notes along the margins of their papers, and marking the text was difficult to do on a computer. While students could use a pencil to write down questions, answers, or

thoughts on their papers or on a sticky note, this was not easily done on a computer. Ms. Jacobs looked into resources that provided students an opportunity to track their thoughts while reading online, such as Read USA, a nonfiction reading website that allows students to highlight and write notes electronically.

Students in Ms. Jacobs' class rotated daily from the classroom for reading instruction to the computer lab for online learning. Students attempted similar strategies in the classroom and the computer lab. During the study, students were assigned a civil rights unit where they read the novel, *The Watsons Go to Birmingham,* and completed a digital project-based learning activity in blended learning that was related to the text. In the classroom, students did a close read of sections in the novel and Ms. Jacobs repeatedly made connections to the Civil Rights movement. In an observation, I saw Ms. Jacobs working with a group of students doing a close reading of the text. Each of the students had a section of text from the novel *The Watsons Go to Birmingham*. The teacher led the students through reading the text, breaking it into smaller chunks and summarizing those chunks, and then discussing the major event happening in the story and how it connected to the events happening outside of the Watson's home. In addition to close reading instruction, the students read some sections of the story independently. One student participant discussed her "inner voice," or what she was thinking about while reading. She was thinking about "why the parents did not like the little girl [in the story] because that's your daughter and you're supposed to always love your family no matter what – family always comes first." Another student described tracking her inner voice in notebooks and on sticky notes. While students could not easily track their inner voices

on the computer, one student said in an interview that he used a piece of paper to track his thoughts and then he "made a Google Doc about it."

Ms. Jacobs used an online platform called Schoology to post assignments for students (Figure 4.1). In the computer lab, the students logged on and completed the assignments. One assignment was a scavenger hunt, where the students gained additional information about slavery to connect to the work they were doing in the classroom. The students clicked on the sites provided by Ms. Jacobs and then filled out a Google Slide presentation to answer specific site-related questions. A student explained the assignment in an interview as "a scavenger hunt, because it had to do with slavery and their escape and how they got their freedom so … we had to copy the PowerPoint and [go] back to the website and … put our own sentences and submit it to her." In observation in the computer lab, I noticed one student participant researching the Underground Railroad. She watched a video about abolitionists and appeared to be creating a PowerPoint presentation about slavery.

Figure 4.1. Schoology assignment created by Ms. Jacobs.

In the first example of a Schoology assignment, Ms. Jacobs explained what students were to do that day in the computer lab. She directed students to different folders where their assignments were housed. Students could insert comments under the

assignment. In the second example, Ms. Jacobs linked a survey to the assignment, and, again, gave students instructions on what to do for the day.

Students

In Ms. Jacobs' classroom, I observed, videotaped, and interviewed three students over the course of six weeks. The students' reading ability levels varied, as determined by Ms. Jacobs' informal observations, formal running records, reading conferring notes, and classroom assessments. I asked each student the same primary interview questions and varied follow-up questions (see Appendix C).

Ms. Jacobs taught three sections of fourth and fifth grade students using a lab rotation model: students rotated between the lab and the traditional classroom. During the first portion of the block, half of the students received whole, small, and individual instruction in the classroom and half of the class rotated to blended learning in the computer lab across the hall, which was monitored by a lab assistant (teacher assistant). Halfway through the class period the students switched to the classroom or the lab. On Fridays, the schedule was more flexible; Ms. Jacobs pulled groups of students for personalized instruction she deemed necessary based on assessments throughout the week. All students used Chromebooks in the computer lab and worked on Compass Learning, Raz Kids, and Schoology. Compass Learning offers videos on specific literacy strategies, such as main idea or sequence, and quizzes on those topics. Ms. Jacobs tracked students' progress using her administrator sign-in. On Raz Kids, Ms. Jacobs set the students' reading levels and the students read books and took a quiz when they finished. The site also allowed students to listen to the text. Schoology is a learning management system with a dashboard where students read announcements and

assignments posted by Ms. Jacobs (see figure 4.1). There are also collaboration spaces where Ms. Jacobs could post a question and students could respond to the question and each other. Ms. Jacobs graded assignments on Schoology and students viewed their grades.

Students in Ms. Jacobs' class used Schoology to work on personalized projects related to reading units or topics. They used websites provided by the teacher to find, copy, and paste information into a Google document that was then used to create a Google Slide presentation.

During observations, students either read independently or worked in a small group with Ms. Jacobs. Students participated in a novel study of *The Watsons Go to Birmingham*. They read the novel in the classroom in small groups or individually, often guided by a packet of questions to be answered individually or in small groups. In one observation, a group of students was engaged in close reading, a type of instruction where the teacher sits with students and guides them through multiple readings of a text in order to acquire a deeper knowledge of the text. During the close reading instruction, Ms. Jacobs and the students engaged in dialogue where the teacher posed questions, such as, "What does it mean to be inclined to war?" and discussed vocabulary words students might not have known without support. During this time, other students were seated around the room and in the reading area, engaged in independent reading of self-selected texts.

In order to create a smaller class size to better personalize learning for her forty students, Ms. Jacobs had twenty students engaged in online learning in the computer lab, and twenty students in the classroom. In the lab, students used Schoology to engage

independently or with others about various topics on the assigned classroom text. Ms. Jacobs posted announcements each morning detailing what she wanted students to do that day during blended learning in the computer lab. During interviews, students described a scavenger hunt Ms. Jacobs set up where students accessed "this website about slavery and … what they did on the plantation and when they ran away and what helped them run away and the abolitionists and stuff." Students used multiple websites and found answers to questions that Ms. Jacobs posed. Students then used the information to create a Google Slide presentation with Google Docs.

In another interview, a student described assignments relating to how slavery ended. Students followed a rubric and answered questions posed by the teacher on a Google document. Questions included: "Tell me about the people you encountered on the underground railroad. Who did you encounter?" and "African Americans sometimes organized revolts against owners. A number of these revolts were violent, resulting in the death of slave owners and their families. Were these results warranted? Why or why not?" Students were assigned to access websites Ms. Jacobs posted on Schoology to find answers. They were also permitted to search other websites they found on their own. The questions encouraged students to think beyond the text and analyze what life was like for slaves.

Blended Learning versus Traditional

I observed similarities and differences in the ways students interacted with texts in the traditional classroom versus online. One similarity was the way in which students were asked and responded to questions. When interviewed about reading in the classroom, students discussed the characters in their text, specifically how the characters

suffered, interacted with one another, and reacted to situations in their lives. The students' reflections about their characters could have been prompted by the questions in their comprehension packets. These questions, according to the students, guided their thinking. All three students mentioned that they read questions and looked for answers in their books in the classroom or on the computer. I observed that students copied and pasted answers to questions directly from the computer into their discussion posts or Google documents without paraphrasing the text.

A main difference between reading in the classroom and reading in blended learning was the type of thinking students had to do. Students engaged in higher level thinking when reading online texts because they were asked to complete higher order tasks. Classroom assignments were focused on the novel the students were reading. Ms. Jacobs asked students to read the novel, then asked them comprehension questions, and discussed the novel and questions together. The lab, according to Ms. Jacobs' interview and student interviews, connected the novel to world issues such as the Civil War and slavery. The students researched and extended their thinking about the issues in the novel with websites and other resources from the Internet. The teacher selected most of these resources, but students were allowed to explore freely. One student described his thinking in the lab as "thinking about the world" rather than just the characters in the book. He juggled multiple screens and thought about multiple topics at one time.

Analysis

I explored the first two research questions using within-case analysis. Two themes emerged from the data at Allen Park Elementary: (a) reading online requires a different set of strategies and skills than reading traditional texts, and (b) these

differences require teachers to meet students' needs differently when teaching online versus teaching traditional text strategies. Themes from this first case connected to the research questions because they answered what and how students were reading online and how they were engaged in the activities. The term "strategy" is used very broadly in this study and can refer to anything the reader does to facilitate understanding the text. In education, strategy is sometimes referred to as a specific reading tool that teachers instruct their students to use. A teacher in the study used boxes and bullets as a specific strategy for her students to use in organizing main ideas and details. Students wrote the main idea in a box and the details as bullets below. While this is a specific strategy some teachers use, this is not what the word strategy refers to in this study. Rather, a strategy students used in the study was to question the text, to find text evidence to back up an answer to a question, and to use the Internet to find definitions of unfamiliar words. In this study, strategy means any method students used to help them read and understand texts, or any tool the students were given with the intention of scaffolding learning.

Data analysis in this case revealed that traditional reading was more linear and strategies more text-centered, while online reading was more expansive, as the use of hyperlinks and hypertexts allowed students to look beyond the page they were reading. Reading online meant students could move freely from one text to another with multiple tabs open at the same time on the computer screen, whereas traditional text was fixed. In one assignment, students were asked to complete a scavenger hunt. Ms. Jacobs posted a link to a Scholastic site where students could find answers to the questions she posed. A student in the study said she got her answers to the scavenger hunt from following all of the different links and watching videos. She showed me how, unprompted by the

teacher, she followed hyperlinks to locate additional information. When asked which she preferred, traditional texts or using the Chromebook during reading, she replied she preferred using technology because it "helped me understand more." She explained that while doing an assignment she could go to the dictionary and "look up the definition" while still having the assignment open on the screen. Another student commented she was working on the same content in both the computer lab and the classroom, but the Chromebook "gives more details" because she could "look up videos" with information, and if she had a question she could just "look it up" without having to ask the teacher.

Online reading is interactive, but it can also pose challenges for students. The students in Ms. Jacobs' class used the Internet to research and answer questions. During an interview, Ms. Jacobs mentioned that she wanted students to use the sites assigned and the hyperlinks on each webpage to find answers to her questions. A Google search could lead to many websites to choose from for research. It was up to the reader to evaluate and decide which site was best. From there, students had to analyze the information to use for research or answer questions posed by the teacher. One site could lead to multiple hyperlinks, leading to an infinite amount of information.

Some strategies students could use online but not in traditional texts, such as copying and pasting. Students in Ms. Jacobs' classroom used the Internet resources provided by the teacher, as well as the teacher herself, to create a slide presentation or discussion post on Schoology. As students were working in the lab, many of them simply relied on the cut and paste tool to copy from the Internet. Given the vast amount of information available online, one student in particular struggled with summarizing the information he read. In several observations, I noted that rather than using hyperlinks to

find information and then put it into his own words, the student simply copied and pasted the information in order to produce the right answer. Several times in interviews he stated that he was "looking for the right answer" online rather than using the Internet as a tool for discovering answers to the questions and then putting them in his own words. Instead of taking an analytical approach, as Ms. Jacobs preferred, this student copied and pasted from the website. While this approach gave him the correct answer, it did not lead to the best outcome: his own interpretation of the online resources. Copying and pasting allowed students to get to the right answer without having to make meaning of the online texts, and to use lower-level thinking skills rather than critical thinking.

As the Internet provided a virtually infinite amount of information, it was imperative that students be taught how to navigate and evaluate texts online. One student was observed using multiple sources of videos and online texts to find answers. During their interviews, two of the students mentioned re-reading texts several times, and one student said she used hyperlinks to go beyond the information on websites linked to the assignment. Students needed to know that hyperlinks lead to different sites and that they could use this information to add to what they knew about a topic. A different set of strategies was needed to read online so students could appropriately navigate through the massive amount of data on the Internet. Finally, students needed to know how to evaluate the texts they were reading. With the potential for infinite amounts of information found online, students must be able to use critical thinking in order to deem the information reliable and important for the task. Traditional reading is more linear. A student could look deeply within a text, analyze what the author wrote, and think outside of the text, but there was no way for the student to read beyond the text.

As an analytical tool, I coded the data from student interviews and assigned them to two classifications, blended learning and classroom based, noting which area the data came from. When I asked students what they did in blended learning, they responded that their activities were based on answering questions and looking on several websites to find the answers. During traditional reading in the classroom, however, the students focused more on characters and on the connections they had to the text. All three student participants mentioned relating to the characters in the text and the struggles they went through. Two students questioned how the main characters were able to survive the tragedies they went through in their lives. Relating to characters and making connections are strategies that did not go beyond the text itself.

The students could have found a similar text to gain more information or used technology to research further information, but that would require them to look beyond the original text. One student mentioned using the Internet to find out what a word meant. When asked how using the computer is different from using a traditional text, he said that he was able to highlight and copy the word and then search for its meaning in a second window. Most strategies used in traditional text reading rely on an inward look at the text and text-centered questions. Because traditional texts have been available for so long, strategies that allow students to read within a text are not new.

Students annotated and highlighted traditional texts when they came to important information they needed to remember. One student mentioned writing down the answers to questions in a notebook and using sticky notes in her book when she found answers to questions. Online texts, for the most part, did not allow students to do this. In her last interview, Ms. Jacobs expressed her frustration for the lack of traditional tools like sticky

notes and highlighters. She was searching for sites that would give students the opportunity to use these tools to help track their thinking. The benefit would be that students could track their thinking and the strategies they were taught in traditional texts. In online texts, this was much more difficult. The teacher must come up with different strategies for students to track their thinking and remember what they were reading without doing it on the page. Ms. Jacobs had students use paper and pencil journals while they worked online.

In this section, the first within-case analysis was examined. The data showed that reading online required a different set of strategies and skills than reading traditional texts. These differences require that teachers meet the needs of students differently when teaching online versus when teaching traditional text strategies. The next section, the second within-case analysis, describes the school and classroom setting. Data collected from students were formed into themes. The themes at Allen Park varied from those at Everbrook Elementary. Ms. Allen, Everbrook's fifth grade blended learning teacher, had less support in implementation of blended learning, thus, had less success and sustainability of blended learning in her classroom. Additionally, her blended learning replaced a section of balanced literacy, whereas Ms. Jacobs used the blended learning time to expand on reading topics.

Everbrook Elementary

School Information

At the time of this study, Everbrook Elementary had a predominately African American (80%) population, while 9% of the student population was Asian, and 9% were Hispanic. Everbrook had blended learning classrooms in grades two through five. Each

grade level had a math and science teacher and a literacy teacher, for a total of eight blended learning classrooms. Each classroom had an increased class size of between 30 and 35 students, depending on the grade. The students rotated from the math and science teacher to the literacy teacher. Ms. Allen and all blended learning teachers taught the same content to two separate groups of students each day. Kindergarten, first grade, and non-blended learning classrooms had access to iPads and some Chromebooks, but were not formally classified as blended learning classrooms.

Ms. Allen was a blended learning literacy teacher, meaning her students had both traditional and blended learning literacy instruction. Ms. Allen was teaching the students without the use of technology and technology-based instruction, and students used Chromebooks in the back of the room as a tool for learning and creating content. Ms. Allen taught literacy only and embedded Social Studies into her curriculum. She used standards required by the state and covered those topics in her reading units. The other fifth grade teacher taught math and science.

Classroom Context

At the time this study was conducted, Ms. Allen was in her twelfth year of teaching and was new to Everbrook Elementary. Prior to teaching fifth grade literacy, Ms. Allen had been a literacy facilitator for three years and an assistant principal for two years. Like the other blended learning teachers at Everbrook, Ms. Allen had never taught using a blended learning concept before this school year. Ms. Allen, in her interview, reported that the school did not have a vision for what blended learning was to look like because it was new. The blended learning teachers at Everbrook received training at Discovery Education, a local professional development site, where teachers focused on

how to teach using a blended learning model before the start of the school year. Teachers spent one week at the site learning about blended learning and planning for the beginning of the school year. Everbrook was the only school studied that participated in professional development prior to starting blended learning at the school. The purpose of the training was to help blended learning teachers establish a platform they would use, to discuss how blended learning would work, and to develop a curriculum. The administration preferred that all teachers use the same platform for blended learning; however, as the year progressed, all blended learning teachers in the school adjusted their platforms and how blended learning looked in their classrooms. Ms. Allen reported that the training "really got teachers excited about what [blended learning] could be … we picked a platform, Edmodo," but that was changed to Google Classroom. Google Classroom was not available to the public the prior year. As it became available during the year, the teachers found Google Classroom was compatible with the Chromebooks and operated well as a learning management system. Once Ms. Allen researched Google Classroom, she decided to switch from Edmodo to Google Classroom around October of that school year.

When I asked how blended learning worked, Ms. Allen said they tried it several ways, beginning with a lab rotation and ending with a classroom rotation. For the lab rotation, half the class stayed in the classroom and the other students went to a computer lab down the hall that housed 15 Chromebooks. A teacher assistant monitored the students in the lab. Half way through the class period, the students in the lab went to the classroom, and the students in the classroom went to the lab. Ms. Allen reported this did not work because of the lengthy transition time, and the movement "ended up being a

bigger behavior issue … so [the students] ended up … staying in the classroom." Once the decision was made to keep all students in the classroom, Ms. Allen tried a rotation model where she stayed in the front of the room teaching while students in the back of the room worked on their blended learning assignments.

As blended learning was a new initiative, trial and error was evident throughout the interviews and observations. Similar to adjusting the type of blended learning the students engaged in, Ms. Allen changed how she graded writing assignments as the year went on. At first the students did several writing assignments using a Writer's Workshop model on Google Classroom (see Figure 4.2) and Ms. Allen gave them feedback. They submitted their work for feedback as soon as they were finished, which often meant students were submitting assignments at different times, creating a time challenge for their teacher. Allowing inconsistent deadlines did not work because it was difficult for her to give timely feedback to all of the students in both of her blocks. She found if she didn't give them feedback they would "goof off on the Chromebook," so she adjusted her assignments. Instead of choosing any topic and submitting writing pieces when they were finished, the students began doing assigned writing, mostly short research papers or narrative pieces related to the unit they were reading, which they submitted at the end of the week for grading. Simultaneously, throughout the week during direct instruction, Ms. Allen taught students writing strategies that could help them during blended learning. She modeled strategies for reading and comprehending nonfiction. Then, in blended learning, students would use these strategies to create their own research projects. During an observation, Ms. Allen taught boxes and bullets, a strategy where students found the main idea in the text and put it in the box, adding details as bullets underneath.

The students in blended learning conducted research for their projects and applied the same strategy online using a note-taking app. Ms. Allen also provided writing lessons based on what she determined the students needed. These assignments had a rubric attached so students knew how they were graded. When they finished the assignments, students could access Compass Learning, a self-paced program where students learn reading skills through videos, so they were not waiting if they finished their assignments early.

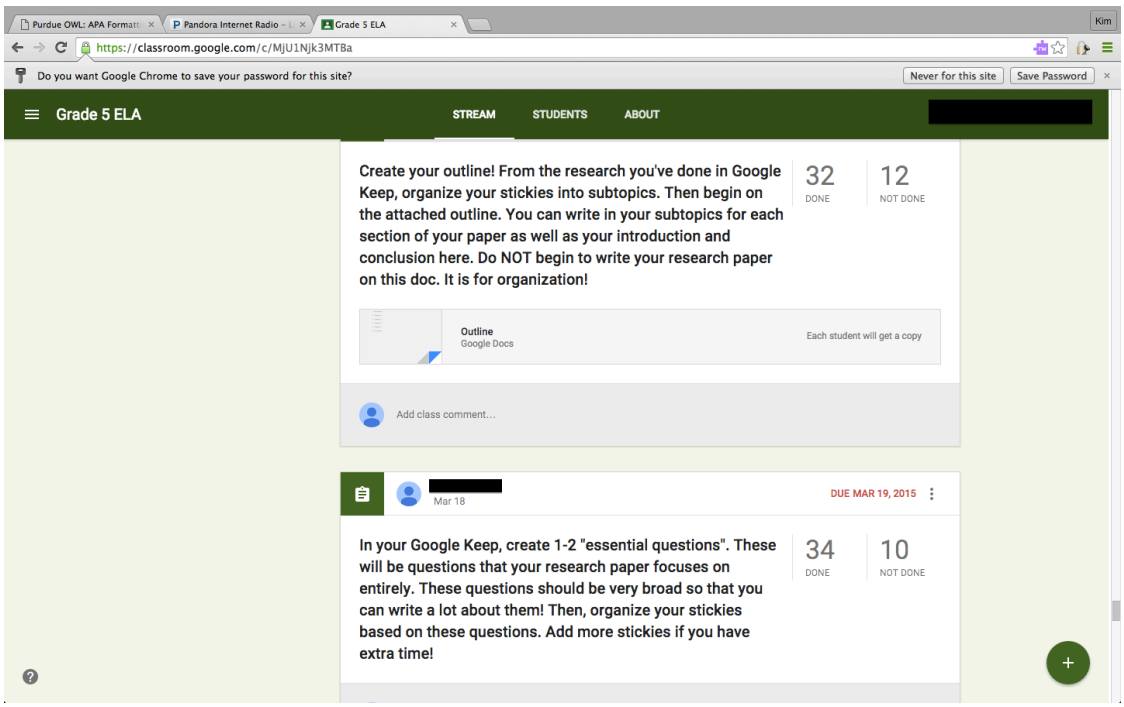

Figure 4.2 Google Classroom assignment from Ms. Allen

In this screenshot of Google Classroom, Ms. Allen explained the blended learning assignment to students. In the example on the bottom, students were to create questions and put them on virtual sticky notes using an app called Google Keep. The second example explains another assignment where students created an outline using their sticky notes. The numbers on the side of the post told Ms. Allen how many students had completed each assignment.

As technology gave students access to support texts and other information on the Internet, it also allowed them to access material that was not school-related. Ms. Allen needed to ensure that her students were using appropriate websites. I observed that when Ms. Allen was in the room, students in blended learning seemed to be on task. The teacher walked to the back of the room several times to check on them. She also had a behavior management technique where she said “hands” and the students would have to

raise their hands, preventing them from clicking quickly to another tab if they were on an undesirable site. She would then do a quick check of their computer screens. These systems helped Ms. Allen manage both her group and the blended learning tables.

In her interview, Ms. Allen reported that blended learning was better in theory than practice because "In reality, we had to create content and did not have time to do so." Blended learning required teachers to plan not only for their regular instruction, but also for blended learning, creating twice the amount of work. The benefit, according to her interview, was that it gave her a small group to work with while the other students were working on Chromebooks. She reported, "I didn't even have time to provide feedback because of all the other responsibilities as a teacher. So while I think it could have worked had there been … more support or more time or people doing things for me or giving me time to do them, I think it could have worked, but without those pieces in place I couldn't … get it all done." Ms. Allen said she would do blended learning again if she was given additional time to create content and a learning management system with built-in features that would make grading easier. Following her role as observed in this study, she worked as a Dean of Instruction and not in a teaching role or facilitating blended learning.

Students

In Ms. Allen's classroom, I observed, videotaped, and interviewed three students over the course of six weeks. They were observed in their classroom setting during both whole and small group instruction with Ms. Allen, and during their blended learning time on the computer. I conducted interviews in a small, private room across the hall from their classroom during blended learning time. All participants were asked the same

interview questions with slight variations to follow-up questions. According to Ms. Allen's informal observations, conferring notes, and classroom assignments, the students were of varied ability level in reading.

In Ms. Allen's room, four desks faced each other with a student at each desk, using headphones. Around the classroom, desks faced the walls and students used Chromebooks. Ms. Allen explained that students faced the wall so their computer screens could be easily seen, and she could ensure that they were on the correct website while she instructed students in the front of the room. All students worked on their writing assignments from Google Classroom or Compass Learning if they were finished with other assignments.

In the front of the room, several rows of desks faced the SmartBoard. Eight desks comprised each row, with walking space for Ms. Allen in the middle of the row. In the blended learning area, several rows of desks faced the wall along the perimeter of the room, and two groups of four desks were in the middle of the room. Students worked individually on the Chromebooks during the lesson. Halfway through the class period, the students working with Ms. Allen moved to the back of the room and the other half rotated to the front.

Ms. Allen taught two sections of literacy for fifth grade students. Half of the students in fifth grade began their day with Ms. Allen, while the other half were with the math and science teacher. Halfway through the day, and after recess, the classes switched, and Ms. Allen taught the other section. All of the students in the study were in the morning section, and all participated in both classroom instruction and blended learning each day.

Whole class instruction, as noted during observations, often consisted of Ms. Allen conducting a close reading of a piece of text. During a close reading lesson, all students had the same text and Ms. Allen supported them in multiple readings of the text to gain deeper meaning. In close reading, the students had the same piece of text for a week. They had a copy of the text in front of them and Ms. Allen guided them through the text and higher-level thinking. She posed a question and led students through answering the question, and then the students wrote individually about the question posed. During a nonfiction unit, Ms. Allen led the students through the reading of the Gettysburg Address, focusing on vocabulary. As the week progressed, the students focused on parts of the Gettysburg Address and used boxes and bullets as a strategy for finding the most important parts and the details that supported the main idea. At the end of the week, the students discussed the big idea question, "What does Lincoln's description of the 'great task' show about his attitude toward the war?" One student participant described Ms. Allen's expectation for a "5-star response" to the question posed in the close reading. After an open discussion about the assignment question, often a higher level thinking question, the students wrote their responses. Ms. Allen expected students to include direct quotes from the text to defend their answers. At times, Ms. Allen read aloud or taught a more direct mini-lesson to guide students through their writing. Ms. Allen carefully planned the whole-class teaching and blended learning so students practiced blended learning using the strategies she taught them. In blended learning, they were observed reading or writing on the same topic they were studying in the whole class lesson.

During blended learning, the students' writing assignment in Google Classroom was related to the unit they were studying in their traditional classes. I observed a lesson where Ms. Allen's students participated in a close read using a historical fiction text. With the help of the teacher, students broke down the text and focused on its deeper meaning. They also viewed poetry on the same topic. Then, in blended learning, they researched their own Civil War topic with a final assignment to create a historical fiction writing piece that took place during the Civil War. Figure 3 is an example of a Civil War assignment in Google Classroom. The first assignment was to answer questions based on a passage read in class. The second assignment was to watch a video related to the close reading passage for the week and then to continue researching the Civil War.

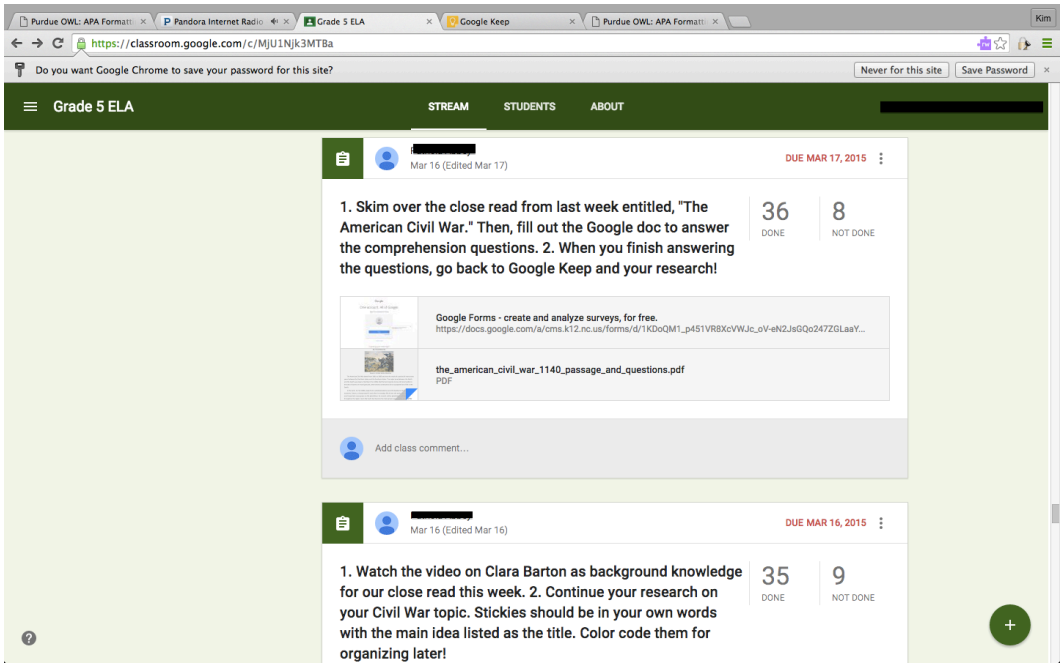

Figure 4.3 *Civil War assignment in blended learning*

One participant talked about a biography she was writing about Clara Barton. During blended learning, her assignment was to research and come up with main ideas and then subtopics about Clara Barton, for which she used Google. I observed another student

finding information about famous battles in the Civil War and writing sticky notes about it. Once the students organized their subtopics using Google Keep, they created drafts of their research papers in Google Docs. Figure 4 is an example of a Google Keep page, where students accessed sticky notes to organize their topics just as they would using paper and pencil. In this example, the student used Google Keep to organize her notes. The notes are color coded based on the subtopics of her research.

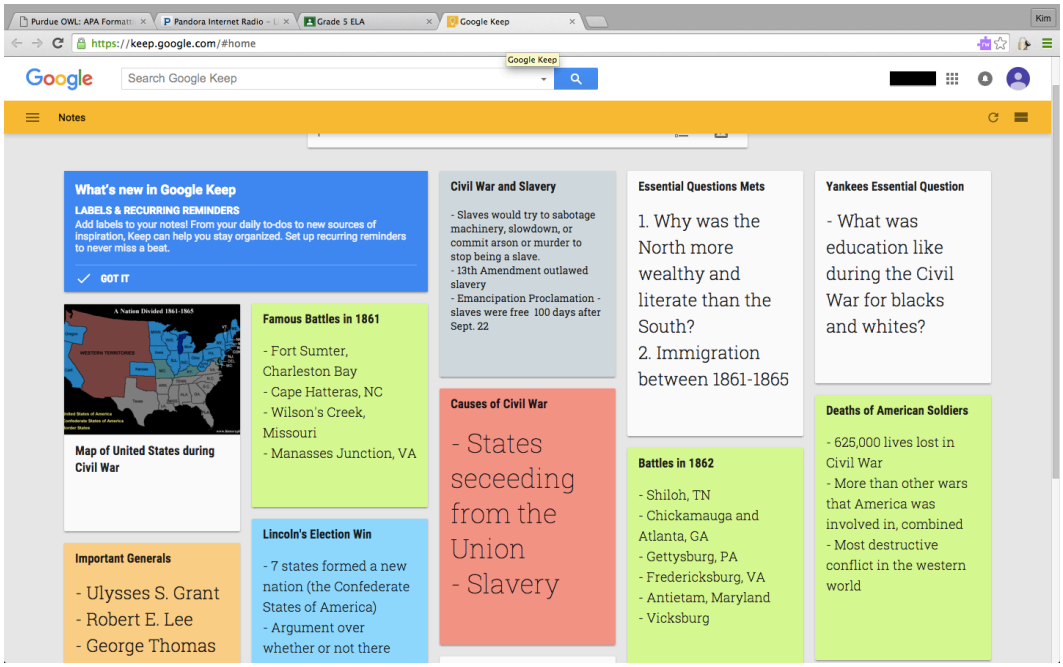

Figure 4.4. *Google Keep student example*

Blended Learning versus Traditional

The three students interviewed described some similarities and differences in blended learning versus working with Ms. Allen. Students found that the work they did with Ms. Allen was similar to the work they did in blended learning, and they saw the connections between the strategies she taught them. One student explained that what the students do with Ms. Allen and in blended learning is "not that different because she'll make us charts that we do in the classroom and we make predictions from the context

clues … in Google Docs or on paper." Another student explained that they read passages during the traditional reading time and they worked on reading and answering questions on the Chromebook. During reading instruction, students typically engaged in close reading with Ms. Allen and then answered comprehension questions on their own. These comprehension questions often matched the standard she was teaching. In blended learning, students were observed reading passages on the computer and answering questions related to the standard Ms. Allen was teaching, and she graded on their ability to correctly answer the questions.

By contrast, some students interviewed recognized they could have access to more information while on the computer, and all three students mentioned using the computer to search for additional information. One student said she could find "more stuff on the computer when reading. When you're reading a book it describes it but you can actually search it up with words, or you can find more about specific words [on the computer]."

Analysis

I explored the first two research questions using a within-case analysis. Several themes emerged from the data at Everbrook to connect to the first two research questions: (a) adjustments were made to the organizational structure and assignments in blended learning throughout the year, (b) blended learning can replicate traditional learning, and (c) there was a lack of support for the teacher in a blended learning environment.

Ms. Allen often made adjustments to organizational structures and student assignments in her blended learning environment. In her interview, she spoke about the changes she made to the organization of blended learning in her room. She tried a

rotation model at the beginning of the year where students "move[d] out of the classroom and [she] kept half the class and then they switched." She explained that this did not work because the transition to the computer lab took up time and the movement created behavior problems. Students talked and acted up during transitions in the hallway and took too long to move from one room to another. A few months into the school year, Ms. Allen kept all the students in the classroom and had the students follow a classroom rotation model so she could monitor behavior. This change required her to rethink how she provided support to the students in blended learning. They were in the back of the room while she was in the front. Occasionally, while her students were working independently, she moved around the room to see what students were doing on the computer and to answer questions. In December, her assistant was moved to another classroom, so she was the only adult in the classroom. While teachers in traditional teaching environments often adjusted and changed what they were doing, Ms. Allen's changes were significant because, in most cases, had she been given a stronger support system, the changes may have been less stressful. That is, as Ms. Allen mentioned in an interview, if she had been given more ideas about how to implement blended learning early in the school year and had time during the school year to give feedback to students and create content, blended learning could have been much more successful.

Ms. Allen also spoke about the changes in student assignments during blended learning where the students started doing a lot of writing assignments on Google Docs and she gave them feedback. She explained that did not work because it was difficult to give them feedback as often as they needed it. The students wrote during blended learning time, while Ms. Allen taught the other group of students. In a traditional

classroom, during Writer's Workshop, the teacher is able to confer with students throughout the writing block to discuss their writing, give them guidance, and support them through the writing process. However, because students in Ms. Allen's class were working on the computer while she was teaching, the writing had to be checked outside of instructional time, which was time consuming. When Ms. Allen's assistant moved to another classroom, she changed her assignments to short research papers or narrative pieces with a rubric, and the students submitted them weekly for grading.

A traditional balanced literacy approach includes reading and Writer's Workshops, word study, read aloud, and shared reading. At Everbrook, blended learning was used as a method of instruction for students to engage in independent writing during Writer's Workshop. The students participated in the writing process online. Students were observed collecting data from the Internet on their topics and organizing the data using virtual sticky notes. They then organized their sticky notes into subtopics and categories, and wrote final products on the computer using a rubric as their grading guide. Using blended learning as a way for students to write online allowed Ms. Allen the opportunity to focus on more direct instruction during Reader's Workshop, specifically close reading, in her daily instruction. While Ms. Allen was teaching reading, the students were on the computers writing in the same genre as they were reading. Writing online allowed the students to explore sources and remain engaged with the writing process and afforded them the opportunity to research and organize data on a single computer. This is different from a non-blended learning atmosphere because the use of the computer allowed students to gather sources, organize, and write without traveling to

a library. Working online, according to Ms. Allen, was much easier than having students go through the writing process using only traditional texts, as she had done in years past.

Students often studied the same topics or genres in direct reading instruction with Ms. Allen as those studied during blended learning. Students rotated from traditional reading instruction with the teacher to writing in the same genre on the computer. Occasionally, Ms. Allen would teach a writing lesson in lieu of a reading lesson, based on what students needed. During a researcher observation, Ms. Allen taught a mini-lesson on how to create a strong opening to a piece of writing by asking a question to hook a reader. When students finished with a piece of writing, they accessed Compass Learning, a website where the teacher assigned specific skills or strategies like finding main idea and details. Ms. Allen could teach students more directly using Compass Learning.

A final theme identified in the data was the lack of support for teachers who implemented blended learning. Blended learning was a new concept in many schools, including at Everbrook. In her interview, Ms. Allen explained that blended learning was new at the school, and, "When I interviewed for the position there was no vision [for blended learning] because no one knew what it was." In an attempt to support the teachers in the implementation of blended learning, the school sent them to Discovery Place Training where they "got really excited about blended learning" and "learned all this cool stuff and learned how to create content." But in reality there was "no time to create content." With the exception of a three-day training at the beginning of the year, there was no support for blended learning throughout the year. As the school year progressed, regular teaching responsibilities took over and made finding time to plan blended learning and to create content impossible.

When asked if she would teach using a blended learning model again, Ms. Allen stated she "would try it in a different environment … not a different population of students, but with more support." She felt she would have benefitted from having time in the beginning to "think out in advance how we would get teachers the time to make it successful" and time throughout the year to create online content. Blended learning teachers were expected to successfully implement the model without any extra planning time. A mentor, or someone who had successfully taught in a blended learning environment, would have helped and provided support.

This section has described the data and themes from the first two cases. In the first case, the data showed that reading online required a different set of strategies and skills from those required for reading traditional texts. These differences required teachers to find alternate methods to meet students' needs when teaching online. In the second case, the lack of support Ms. Allen received for blended learning affected her success.

Norfolk Elementary

School Information

Norfolk Elementary was a Kindergarten through fifth grade elementary school located outside a large city in the Southeastern United States. The majority of students at the school are Hispanic (52%) and African American (41%). Four percent White and 2% Asian made up the remaining demographic.

Ms. Nash taught all subjects to her students. Unlike both other cases in the study, her students were with her all day. She taught literacy, which included blended learning, math, science, and social studies. Her classroom had access to one iPad per student.

Classroom Context

Ms. Nash taught all subjects to her fifth grade students and had a class size of about 25 students. She was a fourth year teacher and was in the third year of using a blended learning model in her classroom. Two and a half years ago, the school wanted to go paperless and use technology resources in an attempt to save paper. Several teachers and school personnel were awarded grants to acquire iPads for approximately two classes per grade level. Ms. Nash admitted, "In the beginning I thought technology [was] a thing that [students] can read and view stuff on but … there's so much more that they can do and create and learn and there are so many programs out there that really came about in the last couple years that changes your mind about what can happen in the classroom and how students can be empowered to make their own choices and be at the center of their learning."

The first year the school slowly attempted blended learning. Their implementation was more "surface level trying to see what [applications and platforms] we liked and didn't like." Students used Raz-Kids, a website where the teacher gave students a reading level and they read, listened to, and took a quiz on texts at their level. During that year, the students worked on Raz-Kids as part of a rotation model in the classroom. They read independently or on Raz-Kids and then rotated to the teacher in small groups. A year before the study, Ms. Nash incorporated more resources including Compass Learning, Achieve 3000, and LightSail.

The year of the study, blended learning was in full implementation and Ms. Nash felt like she "had more of a handle on things" and made full use of Internet tools in blended learning. Students progressed from "putting things on the iPad instead of having

them on paper," to finding programs and apps, to "creating content." She noted in her interview she "could not have had this year without having the two previous years," suggesting that the success of blended learning occurred because she was able to slowly implement the model and improve it over time. While students spent a great deal of time on iPads, Ms. Nash expressed the need for a balance of online and traditional texts because "although things are still technology-based, [traditional texts] are not going away, and I still feel like that's where it all started … and I want students to develop … within themselves what works for them and what they prefer." She desired online platforms that "give the students the ability to highlight or write or interact with the text in some way so they can still do the [strategies] they use on paper."

According to Ms. Nash, teachers at Norfolk Elementary were given support for blended learning. The first year of implementation, several teachers were sent to an International Society for Technology in Education (ISTE) conference, where they learned how to successfully implement blended learning into the classroom. The administration and facilitator at the school were supportive and trusted teachers to choose their own professional development. They also allowed them to implement blended learning the way they saw fit.

Students

Ms. Nash used the classroom rotation model for her students in blended learning. Twenty-six desks were arranged in rows facing the front of the room with one table in the back that was used for collaborative work groups. A teacher desk held a laptop connected to the SmartBoard. A small group area was available for read-alouds and whole-class discussions and there was a small section in the back of the room that was

closed off and looked like a private work area. At the back of the room sat two desktops that were rarely used by students. A few bookshelves held books for independent reading.

I observed, videotaped, and interviewed three students over the course of six weeks. Observations took place during morning meeting, direct reading instruction (the mini-lesson), and independent reading and rotation time. At the morning meeting, Ms. Nash and the students sat in a circle and discussed important news and thoughts for the day. During one observation, Ms. Nash was reviewing class results on an interim assessment with the students. She talked to them about the overall proficiency percentage and expectations on the next assessment. Following morning meeting, Ms. Nash taught a mini-lesson on one reading topic. During one observation, Ms. Nash started a poetry unit and taught a mini-lesson on summarizing each stanza to come up with a main idea for the poems. Students then went to three different rotations. The teacher called a small group of students to the back of the room to focus on one skill or strategy. Another group went to a back table to participate in a skills group. This group read cards containing passages and questions correlated to particular skills, such as main idea and details. The students paired up, read the cards, and answered the questions. Other students worked independently with either a traditional text or an iPad.

Blended Learning versus Traditional

I noted that Ms. Nash's students used the iPads in blended learning as an extension of how they read in the classroom. In observations, students were seen reading texts at their independent reading levels, and on the iPads, students were accessing similar texts using LightSail and Raz-Kids. These programs allowed the teacher to set

the level so students had access to texts only on their reading levels. Similarly, Ms. Nash had students pick independent texts from the classroom and school library at their levels.

Although students were reading texts at their levels in both blended learning and in traditional texts, there was a difference in the way they responded. During one observation, Makayla, a student participant, was reading a traditional text and writing key facts about the text in her journal. Isaac, another student participant, described writing sticky notes about "the setting, what I don't understand, what I think about the book and the main idea" when reading in a traditional text.

During an observation, Isaac was reading on the iPad using LightSail. Periodically throughout the book, the program prompted him to find the meaning of an unknown word, or to answer questions to check for understanding. Isaac found the meaning of the unknown word by selecting one of three similar words when the unknown word was blacked out. He had to use context clues to figure out the meaning of the blacked-out word and could not move on to the next page until he had done so. The program prevented the student from moving on to the text page until he correctly answered a comprehension question. Makayla said reading the book was different from reading on the iPad, because in a book, "You can read and make your own mental thought because you can answer your own question" but on the iPad, "It think[s] of questions for you."

Another difference mentioned in a student interview between traditional reading and reading on the iPad was the ability to research and explore beyond the text. One student recalled searching Wikipedia "for an author … and I searched what more books he's done … and I go there and it tells me his history … and I can't do that in a book."

She also read a nonfiction text about skateboards on the iPad, was curious about what skateboards looked like, and searched Google Images. The same student also said she used screen shots "to take pictures of the book when I'm out of post it notes." She referred to her screen shots when she talked with her partner about a book.

Analysis

Two themes emerged from the data at Norkfolk Elementary: (a) the teacher felt blended learning was successful because she implemented blended learning slowly and the school and administration supported her, and (b) the work students engaged in was similar whether they were in blended learning or the traditional classroom setting. Both of these themes provided answers to the first two research questions in the study. The second theme addressed what students were doing online and provided answers to the first and second questions.

Ms. Nash described her implementation of blended learning as encompassing several years. She said she started with "surface level" implementation to decide what programs students liked and disliked. Students read on Raz-Kids during their blended learning time. The second year, the students an additional option during blended learning to include Read Theory (a program where students chose passages to read and then answered comprehension questions at the end). In the third year more choices were added, such as Compass Learning, Achieve 3000, and LightSail. Ms. Nash stated, "We took our time with implementation and that worked for us. If we had all of these programs to choose from it may have been overwhelming." Instead, the teachers had time to explore each program before they decided which they preferred.

Ms. Nash said she felt that her school supported the implementation of blended learning. She was sent to a well-known national conference for technology in education, ISTE. There she spent time attending sessions of her choosing and discussing blended learning implementation with colleagues. The teachers in the school also went to technology professional development sessions with their facilitator, which allowed the facilitator to support the implementation of blended learning.

Finally, teachers were given autonomy for what blended learning would look like in their classrooms and Ms. Nash reported she had "a lot of administrative support." The administration "put a lot of trust in [us] to pick the classes and sessions we wanted and come back" to make the information their own and adjust for their individual classrooms and students.

At Norfolk Elementary, students used iPads for virtually the same activities as they did in traditional texts. While Ms. Nash stated in her interview that students were "creating and choosing [programs and apps] and not just using the iPad instead of paper," observations and interviews with the students showed that they were using the iPad instead of traditional texts. While the iPad features allowed students to engage differently with online texts as compared to traditional texts, they were essentially reading on an iPad rather than a traditional text. All three student participants discussed using the iPad for Raz-Kids and LightSail. Students were observed reading these texts rather than traditional texts in the classroom.

The programs students used for reading varied from traditional texts, because they included comprehension questions. While using LightSail, the students were periodically prompted to answer comprehension questions or to find the meaning of an unknown

word that was blacked out on the page. In Raz-Kids, students answered comprehension questions at the end of the book. I observed students using the iPad to read from these programs and not creating or using higher order thinking. The interviews and observations brought into question whether simply reading on an iPad was considered blended learning.

Summary of Within-case Analysis

This section summarizes the within-case analysis. Table 2 summarizes the major themes found in each case. The following section explains the findings further. Each classroom, teachers, and students in each room are described, similarities and differences in each case are discussed, and themes presented. Finally, connections are drawn to the first two research questions.

Table 2: *Within-case Themes*

School	Teacher	Themes
Allen Park	Ms. Jacobs	1. Reading online requires a different set of strategies and skills than those required for reading traditional texts. 2. These differences require that the teacher meet the needs of students differently when teaching online versus teaching traditional text strategies.
Everbrook	Ms. Allen	1. Adjustments were made to the organizational structure and assignments in blended learning throughout the year. 2. Blended learning can replicate traditional learning 3. There was a lack of support for the teacher in a blended learning environment.
Norfolk	Ms. Nash	1. What the teacher deemed to be successful implementation of blended learning occurred because of slow and supportive implementation. 2. Blended learning students did not vary between traditional and online texts.

In the first case study, Ms. Jacobs of Allen Park taught literacy using blended learning in a lab rotation model, where students rotated from the traditional classroom setting to a computer lab equipped with Chromebooks. While the county and her school supported blended learning in the classroom, they did not have the infrastructure to support its implementation because of their lack of experience. Blended learning was a new concept for the district and school, so there was neither support staff nor materials to

assist Ms. Jacobs with implementation. Without a clear support network, Ms. Jacobs was forced to learn through trial and error, which was difficult and time-consuming. The students engaged in similar content in the classroom and in blended learning; however, Ms. Jacobs struggled with how to teach the same reading strategies in traditional reading and online texts. Students read the same genres or topics in blended learning and the traditional classroom. They had difficulty using strategies online that they could easily use with traditional texts, such as tracking, or keeping track of their thinking on paper.

Major themes from the first case study included: (a) reading online required a different set of strategies and skills than reading traditional texts; thus, the teacher should be responsible for teaching these skills, and (b) while traditional reading was more linear and one-dimensional, reading online allowed students to explore an infinite amount of information. Students needed to learn how to read online and how to effectively manage the information available to them.

In the second case study, Ms. Allen's fifth grade classroom at Everbrook Elementary participated in blended learning using both a classroom and a lab rotation with Chromebooks. The year of the study was Ms. Allen's first year teaching with a blended learning model, and Everbrook did not have a vision for what blended learning should look like. Beyond one training session the summer before school started, Ms. Allen had little support. In an interview, Ms. Allen said blended learning was better in theory than it was in practice because there was little time to create the needed content for her students to be successful. Ms. Allen adjusted her blended learning model and student activities several times during the school year, and moved from a lab rotation model to a classroom rotation model.

Themes from the second case study included the teacher making adjustments to the organizational structure and assignments as needed throughout the year. There was a lack of support for the teacher to implement blended learning successfully. Additionally, Ms. Allen used the blended learning time for Writer's Workshop, ultimately using it in place of a part of balanced literacy in the classroom. Students would write in the genre they were studying in the classroom. The class was studying historical fiction in Reader's Workshop and writing historical fiction pieces in blended learning.

In the final case, a fifth grade classroom at Norfolk Elementary school, Ms. Nash taught all subjects to her class of approximately 25 students in a classroom rotation model. She had taught using a blended learning model in literacy for three years, and described her implementation as incremental. The school sent her to several professional development sessions where teachers were given the opportunity to experiment with apps and platforms to discover their preferences. I observed students reading texts and answering questions on iPads. The use of the iPad to read and answer questions seemed to replace the traditional text, but not to enhance the students' learning experiences; they could easily have done the same exercise reading a passage on paper with questions to follow. While some cases in the study used technology to enhance learning, the final case study did not.

Two themes emerged from the final case study: (a) the teacher successfully implemented blended learning as a result of slow implementation, and support from her school community, and (b) questions remain as to what it means to effectively implement blended learning. Over three years, Ms. Nash gradually implemented blended learning by first experimenting with apps and programs and attending national professional

development conferences to learn more about blended learning. In her third year of implementation, the year of the study, students began to use more programs and became more independent in their use of iPads. Although Ms. Nash reported that students created and chose apps and did not just use the iPad instead of paper texts, observations and interviews did not indicate that the students created content. Questions remained as to the definition of blended learning: Was reading on an iPad considered blended learning? What was considered blended learning?

At the beginning of chapter four, I discussed the within-case analysis of three case studies in fifth grade classrooms, and attempted to answer the first two research questions:

1. What is blended learning as it is enacted in three fifth grade classrooms?
2. In these blended learning classrooms, what online texts and activities are assigned to fifth grade students, and in what types of traditional reading are they participating in the classroom? How do students engage or respond to assigned online activities?

Analysis of data within each class indicated that teaching and learning that fell under the common title of blended learning differed. At Allen Park, Ms. Jacobs had her students in a lab rotation model where the students rotated from her classroom to a lab across the hall where a lab assistant supported the students in their learning. Students experienced blended learning to enhance what they were doing in their reading classroom. In her traditional classroom, Ms. Jacobs engaged the students in novel studies and close reading (or multiple readings of a piece of text). She used blended learning as an extension of her reading lesson, and students worked using Google Classroom. I

observed students participating in scavenger hunts, where they searched for information and then created a Google Slide presentation of the data they found.

Students at Everbrook experienced a blended learning situation similar to the one at Allen Park. Ms. Allen had her students in a classroom rotation model where students rotated to her for reading instruction and worked on Chromebooks for writing. During the reading lesson, I observed Ms. Allen doing close reading with her students. Similar to students at Allen Park, the Everbrook students typically worked on an extension of the reading lesson in blended learning where they wrote in the same genre as the close reading passage. Students read about nonfiction in their reading class and wrote nonfiction in blended learning. Ms. Allen asked her students to engage in the writing process in blended learning, whereas Ms. Jacobs had her students creating presentations on Google Slide and posting on blogs.

Finally, at Norfolk, Ms. Nash had students in a classroom rotation model where students used LightSail and Raz-Kids to read and answer questions on their reading level. Her reading instruction was typically done with a small group and was based on standards they struggled with on assessments. She was observed pulling a small group and having students read and answer questions with her support. Blended learning here differed from that in Ms. Jacobs' and Ms. Allen's classrooms because students were not creating content on their devices; they were using the devices to read and answer questions. Ms. Nash asked her students to do similar work during blended learning and traditional reading time, namely reading books on an iPad and answering comprehension questions, while Ms. Jacobs and Ms. Allen asked students to extend their thinking from their traditional reading class to their blended learning time. Not only is there no clear

definition of blended learning, but also, if iPads are being used simply to replace traditional texts, why are counties and schools spending so much money on them? Why not continue using texts they already have in the classroom? On the other hand, if computers are being used to extend students' thinking, it could potentially mean higher levels of thinking and engagement. Next, I will attempt to answer the final research question by discuss this and other findings in more detail using a cross-case analysis

Cross-case Analysis

Reading online requires a different set of strategies and skills from those required for reading traditional texts; thus, blended learning changed the way teachers responded to how students learned and understood reading. Online reading created demands on teachers and students that differed from traditional reading. The next section addresses the challenges of online reading and the way it has changed reading instruction.

Reading online created challenges for students and teachers. Although some reading strategies are compatible in both traditional and online formats, more applications and programs need to be researched and created for students and teachers to successfully bridge the gap between reading online and reading in traditional text. Ms. Jacobs noted that strategies she taught for reading traditional texts could not be used with the Chromebooks. She preferred that her students monitor their comprehension of a text by tracking their thinking. She wanted them to use their inner voices, or what they thought about the text, and make note of it on paper or sticky notes. She asked students to summarize portions of traditional texts in the margins, and underline and highlight important information, but students were unable to do this on the Chromebook. "Marking up the text," as Ms. Jacobs' described this strategy, was difficult on Chromebooks. In the

third case study, students were asked to respond to texts in their journals and on sticky notes, but they did not employ the same strategies while reading online texts. Students were observed writing about their traditional texts in journals or responding to the text on sticky notes in the book. Writing to learn is a tool that allows students to process what they are reading (MacArthur, Graham, & Fitzgerald, 2015). Students need such tools to respond in both traditional and online texts. Conversely, in an observation of students reading on iPads in Ms. Jacob's class, students read books using LightSail, where periodically the program required students to answer questions or identify vocabulary words. The students did not respond to the LightSail text as they did to their traditional texts; they answered comprehension questions as they read the text. Some reading strategies did not carry over to the reading of online texts; however, some strategies worked in both reading formats.

In contrast, some capabilities of online text raised concerns for teachers about student engagement and learning. Ms. Jacobs' class used websites to find information. She allowed students to use hyperlinks to answer specific questions. Some students observed during the study copied and pasted information without putting it into their own words. One student showed me how he answered questions posed by his teacher by using the copy and paste option. He quickly copied the work of the online author and posted it as his own answer. While this can be done with traditional texts, it took seconds for this student to copy and paste. The ability to copy and paste text is a concern for teachers because little time and effort is required to copy text written by someone else, and it indicates a lower level of thinking. Instead, teachers would prefer to see students summarizing the text in their own words. Ms. Jacobs and Ms. Allen taught students to use

strategies with traditional texts, and the students did not apply the same strategies when they read online texts.

Ms. Jacobs' students mentioned some strategies that carried over from reading traditional texts to reading online. Rereading is a strategy students used to aid comprehension and it can be done with online or traditional texts. Rereading online would require students to scroll back through the text to read again. In the second case study, students said they use sticky notes to track their thinking with both traditional and online texts. In traditional texts, students used sticky notes to write down their thinking and fixed it to the page. For electronic texts, students generated online sticky notes using Google Keep. Once they had sticky notes on the page in the app, they could move and organize them into groups.

Findings also suggest benefits in online reading that changed what it means to read. Students had a wealth of information available to them on the Internet that was both beneficial and challenging to teachers and students. Traditional texts were linear in nature, meaning that students read and thought about the text but only about what was written on the pages. With online texts, students were able to use hyperlinks to explore beyond a text and gain a deeper understanding of a topic. In the first case study, Ms. Jacobs asked her students to explore a Scholastic site where they could click on links and gather more information about the topic they were studying. A student in Ms. Jacobs' class said she could get more details and look up videos for more information on a topic. In the second case, Ms. Allen asked her students to research historical figures using Google and then write sticky notes about the information they found. I observed students using Google to search for relevant information about their subjects.

A student participant from the first case study mentioned she preferred reading online because she could go to the dictionary and quickly look up a definition. In the second case study, one of Ms. Allen's students mentioned she could find "more stuff on the computer" because she could search for additional information about what she was researching. In an interview from the third case study, a student mentioned she could search Wikipedia for an author to search "more books he's done." The same student read about skateboards and wanted to know what they looked like, so she searched Google Images and found pictures. She also took screenshots of the books and saved them to her pictures folder so she could discuss those parts of the book with her partner.

Although having an abundance of information available is inviting, it also poses challenges. The struggles include: (a) physically reading online versus traditional texts, (b) finding appropriate websites, (c) properly using websites and associated hyperlinks, and (d) avoiding getting lost in the abundance of information available. Reading online requires a different set of skills than reading a traditional text and it needs to be taught like any other genre of reading. Physically reading on a screen and navigating with an iPad or Chromebook requires students to scroll with their fingers on an iPad, use a mouse on a desktop, or use the keypad on a lap top. The act of using a computer or online device is more complex than simply turning the pages in a book.

Furthermore, navigating through online text can be challenging. Students need to know where to go to find the information they are looking for. The options when researching a topic on Google can be extensive, so students need to understand how to analyze the websites they find for appropriateness. Once an appropriate website or online article is found, students need to understand how to scroll through the text and navigate

hyperlinks to gain as much information as possible, as well as how to return to the original webpage, or find additional information.

Ms. Jacobs mentioned that she wanted students to use hyperlinks to find more information, but she had to teach her students how to evaluate a site and decide if it was reliable, and then decide if the information it provided was useful. Students needed to understand that some sites were more valid and reliable than others. She realized she needed to teach them how to critically analyze a site content on their own.

Support for teachers and students was imperative to the success of blended learning. In the first and third cases, the teachers gradually implemented blended learning and were still using it a year after data collection for the study ended. In contrast, the teacher in the second case study was given little support and she no longer taught using blended learning.

Ms. Jacobs, the first case study teacher, had been using blended learning for several years. She spearheaded blended learning for her school and the county, attended several professional development sessions provided by the district, and was sent to a well-known national conference. When she asked the school for more support in personnel and technology, she was given it without question. Ms. Nash, the third teacher in the study, reported that her school was supportive. She was sent to a national conference to learn about blended learning and was given the autonomy to make it her own. She reported receiving ample administrative support to choose individual learning paths and implementation of blended learning.

Both teachers mentioned that the first year of blended learning was trial and error. They both admit that they grew in knowledge about blended learning and how to make it

successful in their classrooms. Teachers in all areas of study had to create content on some level. Blended learning teachers, however, had to plan and create material for both online and traditional activities. When planning traditional reading content, they found many resources available for content support because this kind of reading instruction had been in place for so many years. Blended learning, however, was a new concept, particularly in elementary school, and there was not as much information available. The teachers in the study were both forced to create their own content and to independently research successful applications and programs. Ms. Nash and Ms. Jacobs were more successful than Ms. Allen in implementation because they were able to slowly build their online content. While additional support was needed for teachers, successful implementation required measured implementation and support from the school and district.

In contrast, beyond a professional development session in the summer, Ms. Allen did not receive much support in blended learning. In an interview, she mentioned needing additional planning time to create content for her students. She did not have time for necessary teacher tasks as well as blended learning planning and preparation. Ms. Allen would have liked support from a second adult in the room to make sure students were on task and to help with their blended learning assignments. Ms. Allen was the only teacher in the study who did not continue to teach using a blended learning model, perhaps an indication that the lack of support affected the overall sustainability of the program. One argument for blended learning specifically, and technology in the classroom in general, is efficiency. Students can do more and teachers have more flexibility. However, in Ms. Allen's case, the opposite was true. The heavy use of

technology plus the lack of support were a burden; they created more work for her, and ultimately, blended learning did not work.

A lack of support for students in blended learning was noted as well. In the third classroom, a student mentioned that she was not able to receive support from the teacher because Ms. Allen was teaching other students during blended learning time. The student said she would go to the Internet or ask the person next to her to find an answer if she had a question during blended learning because Ms. Allen was with a group most of the time.

Technology allows students to navigate to multiple websites, and while school districts place blocks on inappropriate sites, students know how to get to games. In Ms. Jacobs' class, the students were in a lab across the hall, and Ms. Jacobs was unaware of what they were doing. There was an adult monitor in the room but I observed that she sat at her computer while the other students sat around the room, some with their computer monitors turned away from her. During observations, I saw students playing games on the computers rather than working on required assignments. While students in traditional classroom settings can go off task, the computer, with its endless search opportunities, makes it easy for students to go off task, especially when their computer screens are turned away from those monitoring the work. There are, however, forms of accountability. Students interviewed in Ms. Jacobs' class knew that she checked their work on the computer because she commented and posted grades in Google Docs. One student interviewed knew that Ms. Jacobs checked the history on their computers to track the sites they accessed.

Conclusion

Throughout the three cases in this study, blended learning is ill-defined, a cause for confusion that forced teachers to create definitions based on their own experiences. Current research suggests the definition of blended learning is unclear (Horn & Staker, 2011; Powell et al., 2015; Osguthorpe and Graham, 2003) and the findings from this study also revealed different definitions of blended learning. The teacher in the first case used blended learning as an opportunity for students to expand on the topics studied in Reader's Workshop. Students researched and created Google Slide presentations based on the reading lesson. In the second case, Ms. Allen used blended learning time for students to engage in Writer's Workshop. The students in the final case read on an iPad during blended learning time. Although there is not a clear definition of blended learning, it can be loosely defined as students using technology for the purpose of increasing learning. Two of the three schools in the study used blended learning as a way to increase class size and place good teachers (as measured by student test scores and teacher evaluations) in front of more students in the hope that they can positive affect more students. This supports the assumption that teachers can be effective if they teach using a blended learning model.

In some cases, blended learning can be used to replicate reading with printed text, causing students to read using technology in the same way they would read a traditional text. In the third case study, Ms. Nash's students chose a book to read on iPads. LightSail or Raz-Kids included comprehension questions, either throughout the book or at the end. This activity is similar to an assignment where the teacher would give students a passage and ask them comprehension questions at the end.

This study also suggests technology can be used to create different learning opportunities, particularly for higher levels of thinking. In the first study, Ms. Jacobs assigned students tasks that allowed them to create content such as Google Slides based on topics they were studying. In contrast, in the third case, students were more focused on recall, a lower-level thinking task, where they were reading and answering comprehension questions based on the text. Although it is not necessary for students to be at high levels of thinking all the time, it is important to note that technology made it easier for students to research and create because of access to applications and programs with a click of a button. Although computers help students elevate their thinking, when they are used as a substitute for traditional texts, they limit what students can do. Ms. Jacobs expressed concern that her students could not track their thinking as they usually do in the margin of their texts.

For students to truly engage in online learning, teachers must give up some control. Reading online can extend boundaries, and rarely entails reading a single text. Rather, it means navigating a potentially limitless web of texts. Often, websites are visually appealing with videos and moving pictures, and distracting with advertisements and unrelated information. Video and other media on the page can give readers more information to digest, and hyperlinks on one web page can lead a reader to other pages of information about related topics. Both videos and hyperlinks can be interesting for readers, but also distracting if they are not related to the initial research topic. Reading online text allows students to explore and leaves teachers somewhat helpless as to where that exploration will end. Reading traditional books gives teachers greater control. In the three cases in this study, the teachers maintained much more control and access to the

texts students were reading during traditional direct instruction. In the first case, Ms. Jacobs chose the topic and the book the students would read. The students then researched the topic during blended learning. The texts in blended learning were online, so students had access to more information.

The findings in Chapter four revealed what students were doing online in blended learning and in traditional classrooms and how teaching needs to be adjusted based on these findings. Three major themes emerged from the cross-case analysis in this qualitative case study: (a) questions remained about the definition of blended learning; (b) reading online often required a different set of strategies and skills, thus, blended learning changed the way teachers responded to how students learned and understood reading, particularly reading and comprehending online texts; and (c) support for teachers and students was imperative to the success of blended learning. In the final chapter, I will revisit the findings and will discuss implications and recommendations for further research.

CHAPTER V: DISCUSSION OF FINDINGS

In this study, I examined blended literacy in three fifth grade literacy classrooms, observed student activities in blended learning and observed the program's its effect on teaching and learning. Chapters one and two described the study and the need for research in blended learning. Chapter three described the methodology used in the study, and chapter four focused on the findings that emerged from the data. The last section of chapter four described the final analysis, indicating that there is still no clear definition for blended learning, and that blended learning provides an opportunity for teachers to replicate traditional literacy or to expand learning and teach critical thinking skills. The final chapter includes conclusions, implications, and contributions to the field, and recommendations for future research.

The overarching intent of the study was to explore how fifth grade teachers taught literacy using a blended learning model, and to observe the activities in which students were engaged. The research questions that guided the study were:

1. What is blended learning as it is enacted in three fifth grade classrooms?
2. In these blended learning classrooms, what online texts and activities are assigned to fifth grade students, and in what types of traditional reading are they participating in the classroom? How do students engage or respond to assigned online activities?
3. Considering these texts and activities, how does blended learning change the teaching and learning of reading?

The next section describes the theoretical framework that guided the study.

What it means to be literate is changing at a rapid pace (Rowsell & Walsh, 2011; Leu & Kinzer, 2000; Leu, 2001; Abrams, 2015), and expanding traditional literacy to include digital technology in the classroom is necessary to prepare students for the work and lives they have outside the school walls (Leu, 2001). However, some schools, particularly those at lower socioeconomic levels, are not equipped to handle the changes in technology due insufficient resources (United States Census Bureau, 2012) and a lack of teacher professional development in digital literacy. Student success in digital literacy in school and beyond requires that they learn how to successfully read and write online.

Current research in blended learning focuses on higher education; there is little research on blended learning in elementary literacy classrooms. Higher education uses primarily a flipped model of instruction, where the teacher assigns students tasks on an online platform, like Blackboard. Students complete assignments online and the teacher grades them, then gives feedback and support as needed. Blended learning in elementary classrooms, particularly those studied here, used lab and classroom rotations where the technology is used as multimodal texts.

I investigated blended learning in three fifth grade literacy classrooms, observing the activities students were engaged in online and in their traditional classroom settings, and how blended learning changed teaching and learning of literacy. I employed a qualitative case study design to gather data over the course of six weeks. Data collection included observations, teacher and student interviews, and work samples.

I addressed the first two research questions by conducting a within-case analysis:

1. What is blended learning as it is enacted in three fifth grade classrooms?

2. In these blended learning classrooms, what online texts and activities are assigned to fifth grade students, and in what types of traditional reading are they participating in the classroom? How do students engage or respond to assigned online activities?

Next, I analyzed the data in a cross-case analysis, which connected all three cases and answered the third and final research question:

3. Considering these texts and activities, how did blended learning change the teaching and learning of reading?

Findings revealed three major themes: (a) reading online required a different set of strategies and skills, and teachers must respond by teaching skills and strategies necessary to engaging in online learning, (b) support is needed for teachers and students to successfully engage in blended learning, and (c) questions remain about the definition of blended learning. In addition to these themes, further analysis revealed that blended learning can replicate reading with printed text or it can elevate or extend learning.

These findings raised questions about the implications of blended learning on the teaching and learning of reading. In Chapter five, I offered recommendations for future research.

Traditional vs. Online Reading

The increased use of technology in general, and blended learning specifically, has changed what it means for teachers to teach reading and for students to read (Hagood et al., 2003; Lankshear & Knobel, 2003, 2007, 2014; Simsek & Simsek, 2013). Rather than reading a book from front to back, as was typically done with a traditional text, the use of hyperlinks and search engines allows readers to explore a vast amount of information

with the click of a button (Coiro, 2013; Leu et al., 2004). While the ability to discover an immense amount of information is exciting, it can be dangerous if students are not given the tools needed to safely explore. Hyperlinks and media links on web pages can be distracting. Students in Ms. Jacob's class needed instruction on hyperlinks and how they can be helpful, as well as how to use search engines using key words, and how to assess the validity and reliability of a website. Some of Ms. Jacobs' students were cutting and pasting information into Google Slides rather than comprehending and paraphrasing the information.

Online reading materials can have limitations when compared to traditional texts (Coiro, 2011; Dwyer, 2016; Leu et al, 2015). The Common Core State Standards require that students read deeply to understand text (Boyles, 2013). Ms. Jacobs and Ms. Allen taught their students to do close readings, or multiple readings of a complex text to gain deep, comprehensive knowledge. Students were taught to mark the text with their pencils, underline words they did not know, and write summaries of paragraphs in the margins. These skills did not translate to online texts. Ms. Jacobs expressed concern that students could not track their thinking on the computer as they could in a text.

Blended learning can be used to replicate traditional reading, expand thinking, and allow for higher levels of thinking in the classroom (Abrams, 2015; Fisher & Frey, 2012). In Ms. Nash's classroom, students read on iPads during blended learning, an activity that could be replicated with traditional texts. They read books on their reading level using Raz-Kids or LightSail. LightSail included intermittent comprehension questions for students to answer as they read, similar to a teacher giving students a passage to read and questions to answer.

Blended learning can make researching and organizing materials more efficient. When students were asked to create presentations using the Internet to research a topic, Ms. Allen's students accessed Google Keep to organize information, used virtual sticky notes to sort information into subtopics, and wrote a research paper. Technology in the classroom made it easier for students to research and add to their knowledge of a topic. While students could have done this work using traditional texts, the Internet, hyperlinks, and online resources made it easier for students to think at higher levels by creating content.

Blended learning can also be used to create higher level thinking tasks (Powell et al., 2015). When students read in traditional texts, they wrote their thoughts on sticky notes or in their reading journals. Different demands were placed on students when they use a program that incorporated questions with the text. It forced them to think about what was happening in the text, or required them to reread the text if they were not paying attention. When they were reading a text on their own, students had ownership of what they were thinking about and they continued to read without stopping. Conversely, LightSail incorporated specific questions that challenged students to think about the text while they read. The ultimate reading goal is for students to be able to read and to think critically about content. If students are asked questions as they read, they may have to think about what they are reading, but they do not learn to think independently about what they are reading.

Current educational practices focus on outdated notions of printed text, and there is a call to update current pedagogy. This study suggests teachers and students who have access to digital texts do not have the necessary strategies to adjust to the strengths and

limitations the texts present. While all teachers in the study were open to a hybrid curriculum, and they attempted blended learning in individual ways, ultimately they were unable to help students use the strategies they were taught with paper texts when reading online. The International Society for Technology in Education (ISTE) (2008) offers the following standards for teachers:

- facilitate and inspire student learning and creativity,
- design and develop digital age learning experiences and assessment,
- model digital age work and learning,
- promote and model digital citizenship and responsibility, and
- engage in professional growth and leadership.

All five standards support the argument that pedagogy must change to adjust to changes in technology, particularly standard 1b, which recommends that teachers "engage students in exploring real-world issues and solving authentic problems using digital tools and resources" (pg. 1) and standard 4b, which recommends that teachers "address the diverse needs of all learners by using learner-centered strategies providing equitable access to appropriate digital tools and resources" (pg. 2). Both of these standards call for teachers to use technology that is centered on the learner, or is personalized. Digital technology allows teachers to personalize student learning to a greater degree. To address these standards, teachers need support and professional development, particularly those teachers who are not familiar with technology. The ISTE standards offer teachers a framework for making a pedagogic shift in literacy and in other subject areas.

I argue that there is a need to bring to the forefront applications and information that support the transition from printed text to online text. While these may exist, teachers at the elementary level are not aware of them and are not using them in their classrooms. Teachers need access to multiple strategies for students to use online applications, resources to help support thinking, and a central place for resources. Students observed in this study did not have strategies for tracking their thinking when reading online. They were unable to highlight and write in margins, or add sticky notes to online texts. Reading strategies they were taught for reading traditional texts did not translate to online reading. The data from Chapter four indicated the need for more research into whether these types of applications existed. If they do not, I recommended that they be created to make teaching strategies using traditional texts transferrable to online texts.

Teachers can use current programs and applications to teach students how to summarize and track their thinking online. In Ms. Allen's class, students conducted a research project using Chromebooks. They researched topics, wrote notes, and organized the notes into subtopics. In traditional texts, students wrote notes in journals or on sticky notes and then organized their thinking by moving sticky notes to create subtopics. Ms. Allen asked students to use Google Keep to create and organize electronic sticky notes for their research. While some applications and tools were available, there was a need to explore or create more, and support for finding these tools easily needed to be provided to teachers. The resources available to teachers should be in an accessible, central location. Websites for teachers and students, like ISTE, that support technology instruction and are well known could provide lists of available resources. These could include applications

and Internet sites that support reading instruction and help connect traditional reading strategies to online texts.

Teacher and Student Support

All three teachers in the case studies discussed the importance of having support to successfully implement blended learning. Ms. Jacobs and Ms. Allen reported their schools did not have a clear vision of what blended learning looked like. The schools entered into blended learning thinking it was a good idea, but without knowing how to support implementation.

Two teachers had positive experiences with support from their schools, and one did not. Support for teachers can be defined as the school administering or sending teachers to professional development opportunities at either the district or national level, providing time for teachers to plan the necessary curricular support, and funding the appropriate personnel to assist the teacher. A gradual implementation timeline made two of the teachers feel successful in their implementation of blended learning and they continued with the program the following school year. The one teacher in the study who did not continue with blended learning the following year implemented it quickly, and said she was not successful. Additional support could be provided for teachers by developing an implementation plan to support the introduction of blended learning.

This research indicated that there was a need for a curriculum to teach students to read online, including how to compare traditional print to online print, how to be critical readers, how to find appropriate materials, and how to analyze information online (Loveless & Dore 2002; Kent & McNergney, 1999). The curriculum needed to include teaching students. As Coiro (2011) has asserted in previous studies, students need to

understand how print text is more linear, and reading online is multimodal. Hyperlinks allowed students to investigate information further; however, students could get lost in hyperlinks and did not know how to use them correctly without instruction. Ms. Jacobs was concerned about students being able to transfer the strategies they were taught in their traditional classroom setting, such as tracking their thinking, to online reading. Students needed to be taught how to use these strategies online, whether that meant using paper and pencil to track thinking or Google Keep to record thinking on virtual sticky notes. Applications that bridged the gap between traditional and online texts could be researched or developed. Researching applications that highlight text and allow for notes in the margin or on sticky notes could be useful for the second case in the study. Students needed to learn how to find appropriate materials online. The quality of Internet information varies. Students needed to be able to analyze websites for validity and appropriateness. In one observation, when students were asked to find information, one student simply copied and pasted information. Higher level thinking skills would have allowed the student to assess, analyze, and paraphrase the text.

An implementation plan for blended learning is needed. Teachers mentioned that gradual implementation was key in the success of blended learning. The first and third cases in the study had a measured implementation of blended learning and they continued teaching literacy using that same model the following year. The teacher in the second case reported in an interview that she had not received very much support, and there was no vision for blended learning in her school. An established implementation plan may have helped Ms. Allen sustain blended learning at her school.

Teachers introducing blended learning were in need of in-service or professional development focused on implementation and creation of materials. This in-service should be created or run by teachers in the field who have first-hand experience with blended learning. Teachers needed a proven implementation plan that worked for other teachers. Teachers who have successfully applied blended learning in their classrooms could provide examples of beginning of year implementation, and recommendations for a 3-5 year sustainability plan. The plan could include literacy and math websites, learning management systems, examples of teacher-created content, and behavior management strategies.

Teachers also needed support with building curriculum, and a database to share successful blended learning curricula. Two teachers in the study successfully implemented blended learning because they had the first year as a trial and error period. Ms. Jacobs successfully built her own curriculum using Google Classroom and Schoology after the first year.

What is Blended Learning?

Many definitions existed for blended learning, but none of them were clear (Horn & Staker, 2011; Powell et al., 2015; Abrams, 2015; Fisher & Frey, 2012). In this study, students in one school used iPads to read text and answer questions. Fisher and Frey (2012) posited that blended learning was not simply applying technology tools to supplement the school environment. Instead, the goal of blended learning was to combine the classroom and digital environments. In the third case, the students used iPads to read, and, beyond the application that included comprehension questions, the online activities were similar to classroom activities. In the first two cases, teachers

extended learning from the classroom to technology with Chromebooks, whether in the classroom or in a computer lab. Ms. Jacobs asked her students to engage in online scavenger hunts and to create Google Slide presentations that answered questions about civil rights, using technology exclusive of printed resources. In the second case, Ms. Allen asked her students to research topics related to those studied in class. They used Google's virtual sticky notes to record and organize their thinking. For Ms. Nash, however, the students used technology to read and answer questions on an iPad, and did not extend their thinking. This study suggests there is not yet a clear definition of blended learning; however, in these classrooms both traditional forms of reading instruction and some system of technology application were evident.

ISTE (2016) has developed standards for students that require demonstration of creative thinking, construct knowledge, development of innovative products using technology, use of digital media and environments to communicate and work collaboratively, and application of digital tools to gather, evaluate, and use information. Students must also demonstrate digital citizenship and an understanding of technology systems. Standard 1a requires students to apply current knowledge to new ideas, products, or processes and Standard 1b asks students to create original works. These standards assume that students are using technology beyond simply doing the same thing with the technology as they do with traditional texts. The standards that ISTE (2016) developed can be a starting point for a clear vision of blended learning.

Recommendations for Further Research

These data analyses and findings are not meant to be broadly applied. Instead, I intended to explore blended learning in an elementary setting, and the implications of

literacy education when students read online. There are limitations, because I studied nine students in three classrooms. This study contributed to the field by providing a description of how blended learning looked in three classrooms, the activities those students were engaged in, and the changes in teaching and learning of literacy in these classrooms.

Although the study contributed to the field of knowledge, more research is needed on blended learning in elementary schools. Research exists on blended learning in higher education, but there is minimal research on blended learning in elementary schools, in different areas of the country, and among different socioeconomic levels. Research questions could include: What did blended learning look like? How was blended learning implemented?

The teacher participants in this study had 0-3 years of experience with blended learning. I question what the data would reveal if the teachers had more experience with blended learning. Research questions could include: How was blended learning implemented? What changes were employed when blended learning was implemented over a long period of time? What instructional practices were used in blended learning? How has blended learning instruction changed over the years?

Summary

Students read differently online than they do in traditional texts, and teachers need to provide the resources for students to be successful with the change in practice. Support was needed for teachers and students to have a successful blended learning experience. For teachers to feel supported, they must have quality professional development focused on measured, successful implementation, and information on

creating content for blended learning. While this study did not resolve questions about what blended learning is, I suggested steps that institutions can take to support students and teachers who are increasingly using technology to aid teaching in elementary schools.

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APPENDIX A: DEFINITION OF DIGITAL TOOLS

Achieve 3000 – a cloud-based program that provides online differentiated instruction with the goal of improving reading comprehension.

Chromebook – a thin laptop that is configured with the Chrome operating system.

Compass Learning – an online resource for teachers for personalizing student lesson plans and tracking achievement data.

Edmodo – a digital platform where educators can collaborate with students, parents, and each other. Groups can be created and sent assignments, homework, quizzes, and more. The platform easily integrates with Google and Microsoft apps.

Google Classroom – a web-based platform that supports Google services: Google Docs, Gmail, and Google Calendar. Teachers can send student assignments on the platform, see who has completed the work, and provide feedback and grades, as well as set up virtual classrooms to share assignments and announcements.

Google Docs – a web based program that allows multiple users to write, edit and collaborate in one document. Documents can be accessed from a phone, tablet, or computer. Files are compatible with Microsoft Office Suite.

Google Keep – allows users to create notes, photos, and audio on virtual sticky notes. Notes can be shared with other users and can be manipulated and moved on the screen.

Google Slides – a web based program for users to create, collaborate, and present in one document. Google Slides are used to create presentations where video and animations can be added.

iReady – a personalized online program for student diagnostic assessment and results-based assignments. Progress is monitored through the teacher platform.

iPad – a touch screen tablet PC.

LightSail – a web based reading and writing platform that provides engaging, level-specific online texts. Comprehension is monitored through close, multiple choice, and short answer questions.

Raz-Kids – an online guided reading program with interactive ebooks and reading quizzes.

Schoology – a learning management system (LMS) and a teaching and learning platform. Teachers can create content, design lessons, and assess student understanding.

APPENDIX B: PARENT CONSENT LETTER

University of North Carolina Charlotte
College of Education
9201 University City Boulevard, Charlotte, NC 28223-0001
734.395.9468

Informed Parental Consent to Participate in a Research Study
"Exploring Online Reading Comprehension in a Blended Learning Model"

Your child is being asked to participate in a research study entitled **Exploring Online Reading Comprehension in a Blended Learning Model**. The purpose of this research study is to better understand what students are doing online and to understand how they comprehend differently online than in traditional texts. At the end, you will be asked to sign this document if you agree to allow your child participate in the study.

Myself, Kim Heintschel Ramadan, a UNC Charlotte Urban Education doctoral student, will be conducting this research project. Dr. Karen Wood, who is a professor in the College of Education at UNCC, is the responsible faculty designated to oversee this project.

There will be a total of 9 participants in the study. There will be videos taken of students working online and interviews conducted during the course of this study. Video recordings will take place twice during the study when your child is working on the computer in his or her classroom environment. Your child's teacher will record them on the computer and I will retrieve the video from them for review. The purpose of the videos will be to record what your child is doing online to help inform the interview. In addition to videos I will be observing your child in person before the interview. The purpose of this is see what the student is working on that day during their time on the computer. This will further help inform my interview with the student and provide me with the most current data.

Kimberly Ramadan will interview your child for approximately thirty (30) minutes twice throughout the study. The interview will consist of questions about what your child is doing online and how they comprehend online differently as compared to traditional texts. Example interview questions will include "What types of reading do you do online? What are you thinking about when you read? What strategies are you using?" The interview will be audio recorded; the audio recordings will be transcribed by Kimberly Ramadan and destroyed following the completion of data collection. In addition, I will interview your child's teacher once in the beginning of the study.

There are no known risks to participation in this study.

A possible benefit of this study is that the results may help others in the field of education to better understand how students comprehend online. There will be no costs, reimbursements, or financial compensation for participants interviewed.

Any information about their participation, including your child's identity, will be kept confidential to the extent possible. While the researcher will make every effort to protect your

privacy, all your child's responses to the interview questions will be transcribed, submitted to Dr. Wood, and used in conjunction with the qualitative research study conducted through UNC Charlotte. The digital audio and video recording files will be kept on secure, password protected computers and iPhones, but the recordings will not be stored on a public network folder. The recordings will be coded by using pseudonyms rather than your child's name. After the audio recording is transcribed, it will be destroyed. The transcriptions will not contain identifying information. During the study, all transcription materials will be kept on a password-protected computer. When the results of this study are published, participants will be referred to by their assigned pseudonyms, not their names. The hard copies of this consent form will be kept in a locked filing cabinet in Mrs. Ramadan's office at _____ Elementary School. In addition, all other hard copy data will be stored at this location.

Your child is a volunteer. The decision to participate in this study is completely up to you and them. If you decide it is acceptable for them to be in the study, you or your child may stop or withdraw them/themselves from the study at any time. They will not be treated any differently if you or they decide they should not participate or if they stop once you have started. Additionally, your child will not receive a grade or reward for participating in this study.

UNC Charlotte wants to make sure that all research participants are treated in a fair and respectful manner. Contact the university's Office of Research Compliance at _____ if you have any questions about your rights as a study participant. If you have any questions about the purpose, procedures, and outcome of this project, please contact Kimberly Ramadan (_____, kimberlyh.ramadan@_____). You may also contact Karen Wood (_____, _____@_____).

I have read the information in this consent form. I have had the chance to ask questions about this study, and those questions have been answered to my satisfaction. I am at least 18 years of age, and I agree that my child is able to participate in this research project. I understand that I will receive a copy of this form after it has been signed by me and the principal investigator of this research study.

Please check yes or no for the following and then sign below:

I consent to my child's participation in the study: ___Yes ___ No
I consent to the use of videotape during the study: ___Yes ___ No
I consent to interviews conducted with my child: ___ Yes ___ No
I consent to observations of my child during the study: ___ Yes ___ No

_____ _____
Printed name of child participant Printed name of the parent

Date

_____
Signed name of the parent

_____ Investigator Signature

APPENDIX C: STUDENT INTERVIEW PROTOCOL

1. Introduce self. Explain the project and what their expectations are
2. Tell me your name
3. Tell me a little bit about school. Follow up: What is your favorite subject in school? What are subjects that you don't like as well?
4. What do you like most about your class with ___ (name of teacher)?
5. What do you want to be when you grow up?
6. Is there anything you want to ask or tell me before we get started?

Research Question #1

1. In blended learning classrooms, what online texts and activities are fifth grade students assigned and what types of traditional reading are they participating in the classroom? How do students engage or respond to the online activities they are assigned?

Interview Questions related to research question #1

Classroom

Say: These first few questions are going to be just about reading in the classroom. So NOT in blended learning.

1. Talk to me about reading in your classroom when you are NOT in blended learning. Follow up: Do you read on your own? Does your teacher read to you?
2. Talk to me about reading assignments in your classroom. What does your teacher assign for you?

3. Tell me about your reading materials in your reading classroom. What book(s) are you reading in the classroom (not in blended learning)? What other materials are important during the classroom reading time?
4. What types of activities does your teacher have you doing in the classroom (not in blended learning)? What does your teacher have you do besides reading?

Blended learning

Now I'm going to ask you questions about your time in blended learning.

5. Talk to me about blended learning time (time you are on the computer).
6. Where do you go on the computer? What sites?
7. What do you read in blended learning?
8. What types of things (activities) do you do in blended learning?

Research Question #2

1. What comprehension strategies do fifth grade students use when reading online versus traditional texts? How does comprehension online differ from traditional texts?

Interview questions related to research question #2

Classroom

Now I want you to think about your time in the classroom again. When you are NOT in blended learning.

1. Talk to me about what you are thinking about when you read a book in class NOT in blended learning. How do you understand what you are reading?
2. When you read something from ____ how do you make sense of it? How do you understand it? How do you do know you've understood it?

3. What are you thinking about when you read in the classroom? What is an example of a book you're reading in the classroom? What do you think about when you read that book?

Blended Learning

Now we are going back to thinking about when you are on the computer in blended learning.

4. Talk to me about what you are thinking when you are reading in blended learning. How do you understand what you are reading?
5. Let's look at this video I took yesterday. What are you doing here?
6. Think aloud and tell me what you are thinking while you are doing this assignment/activity.
7. How do you know how to do this? How do you make sense of this?
8. Can you show me some of the things you've done online? What do you think about when you do these activities?