A phenomenological inquiry into the technological curriculum making of secondary English Language Arts teachers in rural settings

By
© 2016
Mary Frances Rice
DPhil, University of Kansas, 2016
M.A., Brigham Young University, 2010
B.A., Brigham Young University, 2003

Submitted to the graduate degree program in Curriculum and Teaching and the Graduate Faculty of the University of Kansas in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

_____

Chair: Mary Lynn Hamilton

_____

Hyesun Cho

_____

Heidi Hallman

_____

Mary Jo Reiff

_____

M'Balia Thomas

Date Defended: June 20, 2016

The dissertation committee for Mary Frances Rice certifies that this is the approved version of the following dissertation:

A phenomenological inquiry into the technological curriculum making of secondary English Language Arts teachers in rural settings

_____

Chair: Mary Lynn Hamilton

Date Approved: July 25, 2016

ABSTRACT

While there have been growing concerns about technological access and its connection to the development of student literacies in classes such as English language arts (ELA), this attention has become more acute in the wake of the renewal process for the Elementary and Secondary Education Act (ESSA). Even though the ESSA declared rural access to technology as a top priority, the decontextualized nature of existing studies has not provided sufficient information about the ways in which rural access to technologies informs teachers' curriculum-making; an essential component of the educational process Increasing knowledge surrounding this issue has the potential to provide understandings to inform the implementation of the ESSA in rural schools and to support rural teachers generally in their work in integrating technologies.

The purpose of this dissertation was to conduct a formal phenomenological inquiry into the technological curriculum-making. I interviewed four rural teachers from four different rural settings with four different technological initiatives to develop greater understandings about the experience of teaching ELA in rural settings amid policy shifts that bear on teacher technology integration work.

The findings of this study suggest the importance of considering the needs of rural ELA teachers differently, although not necessarily in opposition to those of urban teachers. It also suggests a need to develop teacher preparation and in-service support programs that consider teacher thinking and identity formation in relationship to technology. Further, this preparation might occur alongside the curriculum-making process, rather than separately from it.

Keywords: Curriculum-making, English language arts, secondary teachers, teaching with technology,

To the many wonderful students that I taught at Springville Junior High. Thank you for allowing me to be a part of your lives. What an honor it was to be your teacher and to see you grow into kind, careful, thoughtful, creative, and wise adults.

ACKNOWLEDGEMENTS

It takes a village … to write a dissertation, perhaps particularly in my case. The following individuals provided a multiplicity of services from the intellectual by reading, guiding, and critiquing this document, to the social by providing outlets to escape the more structured part of the work that went into this project, to the emotional (several of you listened to me laugh, cry, and everything in between over this document), to the moral and ethical where I made decisions about how to get this project done and still adhere to my core values, and even to the physical where I was provided food to eat, opportunities for physical exercise, and places to rest. That said, the following list of individuals who are worthy of thanks is extensive, but not exhaustive.

First, to Mary Lynn Hamilton, who bravely and boldly chaired this project after helping me find my way to the University of Kansas, playing a strong role in my enculturation to life as a doctoral student, and then leading me through my doctoral program. I thank you for your patience and endurance.

To my other committee members who led this project, I also offer thanks.

Hyesun Cho, thank you for providing excellent guidance and much inspiration around issues of social identity. Heidi Hallman, thank you for a supporting my emerging attempts to build a life as a teacher educator centered on the English language arts content. Mary Jo Reiff, I am grateful for the opportunity to dive back into English as rhetoric and composition as I had done as an undergraduate, but this time with a greater sense of direction and interested in public composition and the use of media and technology to remix and recast messages for diverse audiences. And M'Balia Thomas, thank you for stepping into help me finish off this project and for leading me through the sudden and wonderful opportunity I had to work with the C&T 330: ESOL methods class.

I also had a number of other professors whose work demonstrated the kind of quality I wanted to achieve and whose course content relates directly to my study.

Amy Devitt—your class on genre theory gave me language for making explicit the needs I have a writer to understand and participate in the power of various documents. I also thought deeply about pedagogical concerns around using and producing genres in new forms in ways that sustain the social action.

Paul Markham—I thank you for the opportunity to work with you in teaching graduate level language courses and take them from you as well. I appreciated your interest in what I had to say about how language is used in classrooms and what the possibilities are for curriculum when teachers are allowed to talk from their perspectives.

Lizette Peter—I thank you for your class about methods for studying language processes. It provided much insight as I attempted to design my dissertation study and conversations with you always pushed my thinking in just the right way.

Robert Rowland—your class on myth and narrative came at a time when I needed to learn to think about narrative in new ways from a new disciplinary perspective. I shall never forget your kindness and encouragement to pursue my interest in technology and teaching and publish my work.

Argun Saatcioglu—your class on Education as a Field of Scholarship offered numerous insights into the values and possibilities of qualitative work in educational settings. I so enjoyed doing the reading and coming to class every week to discuss not just the field of education, but also the ethical concerns behind research and how to negotiate them as a public steward.

Michael Wehmeyer and Karrie Shogren—thanks to you both for letting me in your grant writing class. It was truly valuable for helping me learn how to make connections between ideas

over the course of a long document and for showing me that a project narrative is just that: a narrative.

My work at the University of Kansas also gave me the opportunity to work for the Center on Online Learning and Students with Disabilities. Such an experience expanded my repertoire of research strategies and helped me learn firsthand about the ways in which technology, pedagogy, and policy come together for teachers and students. While at the center, I appreciated my time with Daryl Mellard, whose demeanor modeled professionalism and was a constant source of inspiration to do my best. In addition, Don Deshler who hired me in the first place, met with me, encouraged me, and continued to support me after retiring and taking up emeritus status.

There were also a number of scholars outside of the University of Kansas that helped me with this dissertation.

Donna Alvermann whose work in literacy has been admirable and whose good wishes and support were felt through social media and in direct encounters.

D. Jean Clandinin for offering to meet with me as I finalized my representation of this work and considered what venues might be appropriate for sharing it and acquiring initial feedback.

Joe Maxwell who gave me wonderful counsel as I assembled by the conceptual framework and undertook the literature review for this project.

Raúl Mora who met with me to discuss my work and whose dissertation provided an early model for conceptualizing the enormous task of writing such a document.

M. Shaun Murphy who took the time to help me determine a research design for this work as we sat in Chicago during the annual meeting of the American Educational Research Association waiting for the business meeting of the narrative special interest group to begin.

In addition, Joseph Hanks, a colleague and friend from my master's program, provided insights and feedback for chapter two and Joseph Claunch, my friend and qualitative research classmate, helped shape chapter three.

Finally, Stefinee Pinnegar, who chaired my master's degree and guided me in publishing it as a book and who also provided help in editing a volume, titled *Exploring Pedagogies for Diverse Students Online*, has been important to this dissertation work. It was the *Exploring Pedagogies* book that truly helped me determine to take up technology in my research. I should also mention what a dear friend and life coach Stefinee has been since I met her when I was a young newly tenured teacher working so hard to do right by my junior high students.

Few dissertations in the social sciences can be conducted without participants. In my case, the teachers who participated in this study shared their lives and their classrooms with me to such a great extent that I can never repay them. I learned, unlearned, and relearned much about teaching English language arts from each of them.

I could not have completed this project or really any of my graduate work without the friends that I made in graduate school. Many of these important relationships were built in the English department, with the special education doctoral students, and in curriculum and teaching, with Behnaz Darban becoming a close friend and collaborator.

In addition, Eliza Pinnegar at the University of Alberta in Edmonton provided emotional support for my dissertation process, particularly at the beginning of it, and a model for how to honorably and gainfully complete doctoral work.

Table of Contents

List of Figures

List of Tables

CHAPTER 1

INTRODUCTION

Currently, within English Language Arts (ELA) teaching, there is a movement to restructure and redefine the nature of the field. Scholars in that field are asking questions like *Why English* and not *Englishes*? Why *Language* and not *Languages,* including non-linguistic languages? And Why *Arts* and not *Sciences, Histories, Technologies*, or other subjects or non-subject specific interdisciplinary work? (Cushman, Juzwick, McKenzie, & Smith, 2016). In a climate of such ideological overhaul, it is unclear where those formerly known as ELA teachers located themselves and how they used that location to develop a curriculum. To that end, I designed and enacted a dissertation project that is the subject of this report.

I begin by discussing my own teaching experiences as they pertain to technology use in my classroom. I was an ELA teacher for a decade during which I had numerous teaching responsibilities. I share these experiences in order to position my interest in the topic that I came to study—English teachers, technologies, and curriculum—as well as to reveal some of my personal theories about these topics autobiographically, which have been selected to be helpful later to readers as I explain my methodological choices and as I interpret my findings. My first teaching position in a public school was working with English Learners in an English as a Second Language (ESL) class in a closet at the back of a library. The instructional materials in my teaching space consisted of old *National Geographic* magazines, dried up Tempura paint, and a stack of UNO™ cards. Over the next 10 years, I continued to teach ESL students, and administrators assigned me to teach general education English language arts, reading support classes, and the advanced class called Honors English.

When I began working with those English learners in that closet, there was little expectation that I would use a computer or Internet technology to instruct them. The first time I tried to sign up for a laptop on a cart in the school library, the librarian resisted on the grounds that using it for my classes of five or six ESL students would take it away from a teacher that wanted to use it for larger classes. The students noticed the inequity of these circumstances saying things like, “Mrs. Rice, I think they just don’t like brown people” when we were turned away.

When the library was eventually outfitted with 35 student computers, I started to take my students to the new lab first thing in the morning and let those who needed to finish or print assignments for other classes do so. There were some students who were not used to using the computer at all; I helped them learn to move the mouse and log in. Helping the students remember their passwords was difficult since the passwords were nine or so letters long and were intentionally arranged in nonsensical strings for security purposes.

As I took up additional ELA teaching assignments, I was able to secure access to technology for my students more readily. I became very adept at using the overhead projector (sometimes two simultaneously), and I became expert at advanced planning so that I could sign up for computer labs and technology carts early enough to have access to them when I wanted. My eventual status as a reading support teacher earned me the prize of 10 computers in my classroom—a luxury to which few of my colleagues had access. As exciting as it was to have them, these computers were provided under the condition that the students use them for the computer-based district reading support program. I was all but forbidden to use the computers in my room for any other purpose.

Initially, I complied with this expectation, but as the years passed, I began to rotate students in all my classes through the computer stations during writer's workshop, for research projects, and to do extension and anticipation activities for units. I did whatever I could not to talk about how I was using the computers at official meetings and often found myself in uncomfortable conversations about my fidelity to the reading program and whether my students had worked long enough to produce enough data to demonstrate that the money that had been spent on the computers and the program was leading to overall measureable reading improvements. At the tail end of my career, district officials required me to produce data to demonstrate the value of the money invested in me.

The first small technological devices I remember were personal digital assistants (PDAs). On the day the principal told us to take them away from students at a morning faculty meeting, I saw a student in the library with such a device. I walked up to him and engaged him in conversation. He was reading about Oscar Wilde. When he asked me if he was in trouble, the stress of the situation came down on me. I thought about my directive to take the device and I considered that he was trying to do work with it; that it was *his* legally obtained property. I told him no. He told me about his class assignment to do a biography and asked me for help, which I provided. I remember thinking "What could happen if teachers and students could *use* these things for instruction instead of being asked to take them away?"

In addition to my prized bank of computers, I eventually wrote grants for additional technological devices like video cameras, student response systems, and digital voice recorders. The students also started bringing their iPods, then iPads, and even laptops. When I left teaching, I gave away most of the books I had in my classroom because I had purchased them with my own funds, but the devices I had collected with public monies remained as artifacts of my

commitment to ensure that students with every kind of academically charged administrative designation (ESL, struggling reader, general education, and honors) had chances to learn with technology.

Teaching with Technology in Times of Performativity

When I came into my doctoral program, I was aware of my own struggles to acquire supplies and comply with various directives, but I learned that teachers who worked with me were facing uncertain times. My own experiences resonated with the scholarly assertions that accountability for student learning have been increasing while teacher autonomy has been diminishing (Kumashiro, 2012). Tensions arise in cries from both the public and the academic spheres for teachers that help students achieve high test scores, and who can also deal effectively with the multitude of ethical dilemmas that arise during the course of a school day (Kumashiro, 2015; Sleeter, La Vonne, & Kumashiro, 2014). Yet building and maintaining relationships in schools can be a time-consuming, inefficient process (Chan, Flanagan, Hermann, & Barnes, 2015). Building meaningful relationships with colleagues can be overshadowed as educators compete over scarce technology resources (Schappe, 2015).

While these uncertain times were lamentable, I learned that they were also unsurprising. Over 30 years ago, Lyotard (1984) argued that modernist ideals of general education had been subsumed under what he referred to as the *performativity principle*. According to Lyotard, institutions like schools strive for, "optimal performance: maximizing output … and minimizing input" (p.44). He stated that the reason for the obsession with optimal performance was really a goal for the, "optimization of the cost/benefit ratio" (Lyotard, 1993, p.25). In other words, people are pushed to produce as much as they can with as few resources as possible because doing so saves money. At the core of Lyotard's concern was that public outcry for performativity would

put pressure on institutions like schools. When performativity is the goal, the only legitimate outcomes are those that can be measured (Bartos, 1990).

Alongside the shift towards performative schooling came an increase in technological capabilities, which has been documented by educational historians such as Tyack and Hansot (1982). However, as technology was increasingly used to monitor and evaluate teachers, teachers themselves were slow to adopt it for instructional purposes (Cuban, 1993). First, teachers were slow to adopt radio, then instructional television. They continued to move at glacial paces to adopt computers (Cuban, 1986). Out of the academic discussion about technology, especially internet-based computer technology and education, two major discourses emerged: the discourse of reform, which is based on maximizing the principles of performativity and the discourse of inequality, which is primarily concerned with interrogating performativity (Warschauer, 2000). Both of these discourses have substantial implications for teaching across disciplines, but particularly for ELA.

Reform/Inequality Tensions in State and Federal Policy

According to Schwab (1978), curriculum is made when a teacher and learners engage in activity in a particular milieu or context. The purpose of the activity in which teachers and learners engage is to learn specific subject matter, ways of thinking, knowledge, or even skills. While public policy and the media are highly concerned with what subject matter should be taught, curriculum in modern learning environments is set in motion with technology (Merkley, Schmidt, & Allen, 2001). There is no longer a need to present the learners with the same subject matter at the same time to engage in the same activity. With the possibilities afforded by technologies, there are more chances to make interesting curriculum than even Schwab could have imagined.

Researchers and teachers view the utilization of technology in classrooms differently. In a review of educational technology use and policy in the United States, Culp, Honey, and Mandinach (2005) found that the research community clearly preferred student-centered technology to meet goals such as supporting inquiry, fostering collaboration, and re-configuring relationships among students and teachers. However, a survey of teachers revealed that teachers tended to use technology to support and improve their existing practices as opposed to developing new ones (National Education Association - American Federation of Teachers, 2008).

Teachers are not only under pressure to demonstrate performativity, but are also charged with tackling authentic tasks and real-world problems. The National Governors Association and the Council of Chief State School Officers Common Core Curriculum Standards (2010) developed standards for curriculum that encouraged technology use. Later, federal legislation, specifically the Every Student Succeeds Act (ESSA), the most recent iteration of the Elementary and Secondary Education Act (Pub. L. No. 114-95, § 4104, 2015), addresses reform and inequality tensions. However, the reauthorization draft was explicit that learning ought to occur with and through technological means, especially web-based applications.

Debating the Common Core Curriculum

The current centerpiece of reform legislation in the United States has been establishing a standardization of learning. In the United States the federal government does not have the legal and political authority to mandate common national standards. Therefore, policy makers at the federal level have supported the National Governors Association and the Council of Chief State School Officers in developing the Common Core Curriculum Standards (CCSS) (Mathis, 2010). These standards have evolved to include reading and writing in various subjects as well as

mathematics. By attending to the standards in classroom instruction, teachers should be able to prepare students to compete academically, both nationally and internationally (Abrevaya, 2010).

Since the standards are positioned in educational reform and since reform measures have been largely unsuccessful in the past, the standards are in the midst of considerable scrutiny, particularly from scholars. For instance, Beach (2011) and Porter, McMaken, Huang, and Yang (2011) discussed whether the standards can be used to make reliable assessments. In the quest to measure whether students meet the standards, some scholars have looked at CCSS alignment with previous standards, such as Phillips and Wong's (2010) work on the CCSS writing standards. Other scholars have asked broader questions about whether CCSS represent genuinely desirable learning outcomes for children in kindergarten through twelfth grade. Hiebert and Mesmer's (2013) inquiry into the CCSS directives regarding the appropriateness of the text complexity parts of the standards is an example of such work.

For ELA teachers specifically, a major concern is whether it is possible to draft standards that provide guidance without prescribing or privileging certain forms of literacies over others (Rice, 2016). The complexity of English teaching in the context of literacy has been further complicated by an increasing responsibility to prepare students for literacy success. When the National Governor's Association rolled out the Common Core Curriculum Standards in 2010, the expressed goal of the standards was to prepare students for college and career. These expectations of readiness for university and work life were the bedrock of the standards for educating the nation's young people. However, the CCSS are not a curriculum; rather, they are benchmarks of knowledge that skills learners should have obtained through formal education. The onus is on the teachers to develop and implement a curriculum that attends to the standards.

Further, the standards do not address the topic of technology or the processes necessary to carry out the outcomes associated with the standards.

Although proponents of the CCSS argue for their desirability based on notions of equality, when all students have the same learning goal, a more equal education will result. A major criticism revolved around whether standards are a worthy goal for a society working towards increased inequality. Noddings (2013), for example, asked whether standards are really productive since new economies are going to favor a labor force with diverse skills, rather than a force where everyone has the same or highly similar ones. She also asks whether having standards shifts the blame to students when they attend schools where they supposedly received an equal education and are still unable to be gainfully employed. The core of her argument is that standards distract the American public from attending to weightier matters of social justice and political inequality. If that is true, then standards do more harm than good, especially for children who are already disadvantaged.

Reauthorizing the Elementary and Secondary Education Act

For the immediate future, the ESSA is likely to have a substantial impact on other school policies that guide curriculum and instruction. Section 5701 of this act articulates seven purposes. These purposes are known as Part G: Innovative technology expands children's horizons (I-Tech). The seven purposes are:

1. To improve educational achievement and readiness of all students;
2. To ensure that all students have access to rigorous learning experiences supported with technology;
3. To ensure that educators have knowledge and skills to use the technologies and the instructional configurations (e.g. fully online, blended) that support the technologies;

4. To ensure that school leaders have the knowledge and skills to support and implement these technologies and their instructional configurations in their schools and districts as well as support teacher collaboration around personalization;

5. To ensure that rural, remote, and underserved areas have the resources to take advantage of high quality digital learning experiences;

6. To ensure students have increased access to online coursework, especially dual enrollment, technical credentials, and other innovative coursework; and

7. To ensure that schools have the technological capacity, infrastructure, and technical support, to carry out digital learning.

It is for these purposes of the ESSA that technology and teaching have been entwined as matters of public policy. The first purpose echoes the stated purpose of the CCSS to prepare students for further education. The sixth purpose highlights access to technical credentials and dual enrollment in both traditional school and classes taken over the Internet. It has also been clear that teachers are responsible for learning how to implement technology in their teaching and educational leaders are charged with providing support

The ESSA standards embody reform discourse through language that emphasizes the utilization of technology to carry out educational goals (?), and are explicit about increasing access to technology in populations that have not traditionally had access in the educational settings e.g. rural schools). It is thought that technology may provide historically underserved educational settings additional opportunities through online learning platforms that were formally difficult to offer in schools in smaller communities. To include teaching with technology in this magnitude is a substantial reform effort that teachers who currently are teaching have never faced previously. As the reauthorization draws closer to implementation,

teachers are going to be under an unprecedented mandate to use digital learning technologies to meet the demands of the CCSS.

As a byproduct, many rural school districts have been preparing to meet the challenge to include Internet technologies in instruction with a variety of initiatives (Keengwe, Schnellert, & Mills, 2012). Several common types are:

1. Distributing the same device, such as a laptop to all students (1:1);
2. Increasing the number of mobile labs for students;
3. Providing teachers with more and better devices for their classroom use; and
4. Permitting students to bring their own devices that the school allows for free and open use (Bring Your Own Device—BYOD).

Each of these initiatives has brought opportunities and challenges for teachers developing curriculum around literacy (Bunch, Kibler, & Pimentel, 2013).

ELA Content as a Site of Literacy Supported by Technology

I have just attempted to depict the ways in which teachers are performing their work in an era of concern about reform and equality. I have further suggested that the ways in which using technology to meet imposed standardized student learning goals and attend to equity presents a dilemma for teachers. This section explores the way in which developing students' literacies has come to be recognized as the key to resolving these tensions. It briefly highlights some of the major pedagogies surrounding literacy. The shift from literacy to literacies has bearing on the individuals I invited into my study who have been living alongside this evolution before they became English teachers, now that they are in charge of students. This section also offers a glimpse into the expectations for literacy teaching that have developed as a response to new

thinking about what it means to read, write, shape, and create (Cope & Kalantzis, 2000; Kist, 2000; Luke, 2004).

Shifting from Literacy to Literacies

E-mail, instant messaging, search engines, and social networks expand the possibilities of the type of messages produced, and how those messages are shared with others (Kalantzis & Cope, 2008). Freire and Macedo (1987) definition of literacy as *reading the word and the world* has new implications as technologies have expanded. Since the world has become more accessible, the words and actions used to describe it have naturally undergone a significant shift as well (Lankshear & Knobel, 2003; Street, 1984).

Literacy has been linked to the evolution and growth of people and societies throughout history (Slaughter, 1985). However, Kaestle (1985) argued that empirical research on literacy development first emerged in the1960s. Throughout this decade, literacy emerged as a global concern amid rapidly growing populations and interests in economic prosperity in the aftermath of expensive wars and subsequent human rights struggles (Hurd, 1988). Programs for literacy improvement developed on five continents. The United Nations Educational Scientific and Cultural Organization defined literacy as a means to improve economic stability and led most of these efforts (Heath, 1980).

By the 1970s, literacy researchers criticized the narrow, print-based view of literacy. They argued that these views restricted human agency by focusing on access to limited resources. Scholars such as Freire (1970), Street (1984), and Giroux (2006) critiqued literacy and its outcomes. These scholars have focused on utilizing literacy to limit individual expression and agency and reduce it to the appearance of reading and writing within a classroom setting, while disregarding power dynamics vis-à-vis access to resources (Gee, 2007; Mora-Velez, 2010).

Changes in consumers' relationships to media is likely associated with the renewed interest in literacy, particularly as televisions became more common and personal computers became readily available (Kaestle, 1985). This was because these innovations allowed people more access to more information, but that information was carefully chosen for them. From these concerns about power and media consumption, literacy researchers have developed ideological models of literacy (Street, 1984), theories of multimodality (Kress, 2009), concepts of multiple literacies (Street, 1995; Gee, 2007) and new literacies (New London Group, 1996), and the orientation of Critical Literacy (Luke, 2012; Morrell, 2008).

Once it was established that literacies should be considered in classrooms, literacy researchers in education were quick to question how literacies were enacted in and out of classroom settings and how different those literacy practices were (Hull & Schultz, 2001). As it was discovered that literacies practiced outside school (also referred to as new literacies) were radically different than those practiced inside of a classroom, pressure began to mount for teachers to attend to new ways of thinking about their subject matter using these concepts of power and representation. This demand was the basis upon which the call for research to examine teachers' individual responses to historical, societal, and technological changes was made (Mora-Velez, 2010). The goal was that, by understanding more about teachers' orientations to literacies and technologies, they would be better positioned to create instruction that attended to this fusion of multi-literacies.

In the first part of the new millennium, the shifting definition of the context of literacy practices brought several issues into focus. First, young people began to demand to use literacies as a means to connect with technologies, their friends, and pop culture (Gee, 2007; Hinchman, Alvermann, Boyd, Brozo, & Vacca, 2004). Traditional forms of reading and writing were

derided in the process. Reading and writing became insufficient to describe literacies. Kress (2009) argued that this new multi-dimensional view was closer to the authentic way that children communicate through "the things they use, the objects they make, and in their engagement of their bodies" (p. 97).

Second, the multi-dimensionality of text contributed to the entanglement of public and private lives. This entanglement changed power dynamics and social interactions (Mora-Velez 2010). For many, the use of technologies to produce texts that address different audiences at different rates has become a new form of capital for all (Gee, 2007; Jenkins, Ford, & Green, 2013). The development of literacies carries with it the goal that people can develop stable and multi-faceted identities.

The new sociality brought about a third issue. This issue was an interest in using a multicultural frame of reference for the enactment of literate activities. Social justice and power in schools (Banks, 2003) became a focus. This attention came amid advocates' and policy makers' concerns about differences in digital equity between different demographic groups and between rural and urban places (Hudson, 2013). Campos-Castillo (2014) reviewed studies on differential Internet access among adults undertaken between 2007 and 2012 and found that women have more access than men, non-Hispanic Whites have more access than other groups, Blacks and Hispanics report similar access, and Black men have increased their access the most in the past few years, but still lag behind other groups.

In considering the rural/urban access divide, one survey by Hindman (2000) found that there was a growing metropolitan/non-metropolitan gap in access to and use of information technologies in the United States. Further, this gap was even wider when variables such as age, income, and education were considered. This work highlighted the need for policy makers to

consider rural access to technology *and* education together in the quest to protect the national economy and ensure equal access to the universal benefits of technology.

More recent research on the differential access to technology has focused on the way in social networks precipitate divides. Chen's (2013) analysis of a two-wave national panel data set demonstrated that social capital facilitates Internet access and use. In particular, resource-rich bonding social capital helps people who do not have Internet access to overcome the digital divides regarding online communication. Citizens in rural areas know fewer people in fewer places who can help them log on to and use the Internet for productive work and, as a result, they use the Internet less often.

Perhaps because of these patterns, there is an assumption that the racial divide in access is more adequately addressed in urban settings. But Lichter's (2012) analysis of growth patterns in rural areas found that diversity is rapidly increasing in these areas and with these increases, there are balkanizations and declines in community commitments that deserve attention. Adding to these problems is the fact that rural schools are chronically underfunded in every aspect, including technology (Wang, 2013). While one might be tempted to assume issues of rural access and funding resources are somehow separate from a discussion about literacies, they are actually highly associated. The first level of the digital divide is about access in terms of knowing how to log on, but there is a second-level (Chen, 2013). The second-level divide is about knowing what to do with the Internet and to use in ways that increases one's life chances. While the first level of digital access has been highlighted and studied, the second has not been.

As concerns about technologies and access have increases, literacies have been conceptualized as a way to engage social action for increased equality. These opportunities reflected empowerment for both educators and students with regard to aspects of culture like

language and gender (Guzzetti & Bamboa, 2006). In summary, teaching from a multi-literacies perspective is supposed to give learners access to technologies so that they can mount direct challenges to traditionally held notions of knowledge, power, and privilege. However, understanding how teachers work to give students access to technologies in contexts where access *for them* is scarce is important for taking steps to ameliorate the second level of the digital access disparities in rural settings.

Connecting Technology and Literacy to ELA Teacher Curriculum Work

Teachers embracing the ideals of multi-literacies, including taking advantage of advances in technology, embracing alternative means of text use and production, and advocating social justice have also faced policies that reward more traditional incarnations of literacy as mere data gathering (e.g., test-taking) (Mora-Velez, 2010). It makes sense that teachers in this context struggle to find a middle ground between their own ideas about literacy practices and the reform efforts that claim to be focused on equality but can only see performative reform as a means to achieving it. Lost in this milieu are understandings about why, how, and when teachers make decisions about what to teach and how to teach it.

It has been widely acknowledged that teachers are working within a long history of assumptions about literacy and its content (Giroux, 1987). What have been more elusive are understandings about how teachers position themselves within contexts of technologies and literacies.

If English teachers are to develop teaching selves while participating in environments that place considerable demands on their identities, they must learn to design and enact curriculum with students (McBee-Orzulak, Lillge, Engel, & Haviland, 2014). Successfully navigating the multiplicity of dilemmas calls for teachers who are willing to develop strong identities with

regard to the skills of new literacies and cosmopolitan orientations towards linguistic and cultural diversity (Appiah, 2010). However, much has been left to speculation about how ELA teachers compose identities as they engage with technology in these times of reform.

Another aspect of the discourse of equality focuses on rural areas, small towns, and other areas where technological access has been traditionally less developed. The ESEA has outlined a need to ensure that students in these areas have access to digital learning, although as previously stated, providing a truly egalitarian experience for all students has been more than just a matter of making sure that learners in these areas were able to take the same classes online that have been readily available in other more populated or more centralized locations. It has also been a matter of ensuring that teachers in these schools were able to provide equal access to technological devices and provide instruction about those devices in regular classroom settings.

Curriculum-Making and Identities of English Teachers in Times of Reform and Equity

English has been a required subject and its essential content—the use and production of language—is one of the oldest cultural tools (McBee-Orzulak, Lillge, Engel, & Haviland, 2014; Everett, 2012). Examples of subject matter specific dilemmas for English teaching have included selecting young adult novels to teach that which represents diverse experiences, attending to potentially shocking content in student writing (Rainey, 2015), taking on roles as de facto English language and literacy support for English learners and speakers of non-standard dialects (Lannin, Kohnen, Kline, Singer, Stokes, & Knowles, 2014), teaching students on the verge of classification/reclassification for disability (Kennedy & Ihle, 2012), and learning to guide students in using, reusing, and remixing material in various modalities (Coiro, Knobel, Lankshear, Leu, 2014) in ways that make them better writers, thinkers, and arguers for all of the other subjects (Newell, VanDerHeide, & Wynhoff-Olsen, 2014).

Designing instruction that attends to the complexity of technologized literacy expectations demands an inquiry into the technological self as well as the literate one as part of the whole *teaching self* (Danielewicz, 2001) rather than merely the execution of teaching roles (Britzman, 1991). Linking these two ideas suggests that one must *be* a teacher rather than just *acting* like one; this is why identity-based approaches to teacher preparation have been hesitant to offer specific practices or qualities. Turning to technology, it then follows that merely using devices and engaging students with doing so are insufficient to make a claim to an identity as a technologically grounded ELA teacher. Instead, identities are enacted as part of the larger set of *personal myths* that are created, shared, and reviewed around one's life (McAdams, 1993). These personal myths transcend teaching; teachers have personal myths into which teaching fits. McAdams's question of, "how do I fit into the world around me?" is relevant to adult life in general. Fitting into the world takes on broad meaning already, but fitting into a world with technology invariably opens new avenues for self-making.

Much inquiry has been made into the development of students' literacies and identities both in and out of school (e.g., Guzzetti & Gamboa, 2004; Hinchman, Alvermann, Boyd, Brozzo, & Vacca, 2003). However, the way in which teachers describe their bringing together, remixing, revisiting, translating, and transforming their literacies into classroom practices across space and time has been less studied for several reasons. One of these reasons is that current accountability culture focuses on student learning and teachers are regarded as more or less interchangeable (Craig, 2013). In fact, much of the work in digital learning environments has sought to minimize the presence of, or even eliminate teachers altogether, in the learning process in the push towards efficient instructional delivery (Van Gog & Paas, 2008). Another reason is that teachers have been such an ingrained part of a classroom landscape is that their presence is

simply taken for granted—the sociological processes at work in the classroom simply push teacher personhood off the landscape of concern in a community (Pajak, 2012).

Finally, teachers' perspectives on their own curriculum-making have been lost to competing interests in ensuring that teachers perform practices (Marcos & Tillema, 2006) and display identity only as practical enacted knowledge (Elbaz-Luwisch & Orland-Barak, 2013). Research conversations are then in danger of becoming merely a tool to gain information against which the researcher compares observational data (Entwistle, 2013). However, since this study was primarily concerned with the teacher's perspectives, research conversations were the primary source of data, and artifacts selected by them around their teaching formed a second source. In determining the importance of the artifacts, the teachers remained the major authorities regarding the ways in which their artifacts demonstrated their technological narratives and their curricular responses to those narratives.

In summary, even though teachers have rarely been regarded as individuals who come to classrooms while in the midst of shaping and being shaped by their contexts, they have been responsible for developing and accounting for multi-literacies in the context of technological and demographic flux (Mora-Velez, 2010). One way to learn about how teachers are living and learning with and through and their literacies was to conduct a study of several ELA teachers using a phenomenological methodology (van Manen, 1990).

Purpose and Research Questions

This study explored ELA teachers' curriculum-making as part of a personal practical technological narrative. *Curriculum-making* is a term popularized in educational research by Cremin (1971), who articulated the making of a coherent sequence of learning experiences as a primary responsibility of educators.

I use the term *technological narrative* to describe the way in which national, state, and local policies surrounding technology are perceived and implemented in a teaching context by a particular teacher. I referred to this as a narrative because it is conceptualized as a story that is part of teachers' entire identity, situated in fundamental understandings that have emerged as part of teachers' life experiences occurring both before and after teacher certification and taking a teaching position. It is for these reasons, focusing on experience both outside and inside a classroom, that the narrative is also considered personal *and* practical in accordance with Clandinin's (1985) notion of personal practical knowledge in teaching.

Investigating the wide range of contextual factors that affect instructional decisions and curriculum-making brought understandings into the complexities of literacies and technologies in times of concern about both equity and reform. My goal for this project was to collect and interpret English teachers' stories as personal myths (McAdams, 1993) as they used technologies to make curriculum and promote student literacies. Various research strategies and techniques were necessary to carry out this project.

Research conversations, similar to qualitative interviews formed a major source of data. These interviews were conducted during 2015. As the research conversations took place, teachers began selecting and sharing documents and artifacts around their curriculum-making, which were as a second source of data. A third data source came from reflective memoranda the teachers provided via email about their use of technologies during a semester of their school year. Together, these data were analyzed to understand stories of teachers' intersectional integration of their literate lives and their pedagogical responsibilities.

The primary research questions that governed this study were as follows:

1. What *technological narratives* of these ELA teachers emerge as part of *personal mythmaking*?

2. How do these ELA teachers describe their use of *technological narratives* in their curriculum-making?

3. How do these teachers express the ways in which they infuse their technologically grounded curriculum against a backdrop of concerns about performativity and reform?

Study Overview

To answer my research questions, I worked with four teachers in four different schools that I identified and invited using recommendations from teacher educators in different universities with whom I was acquainted (a convenience sample). Two of these schools were in the West region and two were in the Midwest region of the United States. Each of these teachers were invited because they shared the following characteristics:

- They were all teaching in public schools;
- They all fit within the teaching experience range of 4-7 years;
- They had all attended elementary school in the mid-1980s to early 1990s;
- They all held teaching appointments in rural areas or small towns;
- They were all working in districts with technology initiatives (great or small) for the upcoming 2015-2016 school year;
- They consented to participation in this research study.

Teachers that had 4-7 years of experience represent those with tenure and who are generally considered more experienced. These teachers also attended public schools in the mid-1980s and early 1990s when computers and other technology were just starting to emerge in homes and schools (Cuban, 2009; Selwyn, 1999). The teachers in this study were individuals

who were raised and educated in environments where they were used to seeing but rarely interacting with technological devices. They then became teachers in an era where they were expected to fully integrate expansive technologies into a comprehensive pedagogy. The lives of individual teachers as they compose professional lives in the midst of complex and shifting literacies and technologies provided an interesting dimension to the study that I wanted to explore.

Methods and strategies used for this study included:

- Participation in 2-5 semi-structured interviews of 30-60 minutes;
- Co-construction of a timeline of their personal history regarding technology and their practical experiences learning to teach and teaching with technology;
- Provision and explanations for 3-5 artifacts representing themselves as teachers of technologically supported literacies;
- Participation in 10 weeks of reflective email exchanges where they reported to me their curricular responses to their practical responsibilities around teaching with technologies to which responded; and
- Acceptance of opportunities to read transcripts and offer feedback on findings.

To analyze the collected data, I employed two types of data analysis. The first type was a broad view of the stories the teachers told, heard through Carol Gilligan's (Gilligan, Spencer, Weinberg, & Bertsch, 2003) listening guide as an analytic method. This analysis enabled me to develop four profiles—one for each teacher—outlining their general approach to curriculum-making in light of their personal practical technological narrative.

The second type of analysis was a multimodal social semiotic analysis (Kress, 2011) of the visual discourse embedded within the teachers' communication as they shared their

curriculum-making and expressed their personal practical technological narratives. This secondary level of analysis enabled me to capture the technological narratives and the curriculum that emerged as an entire set of multimodal objects.

The findings from this study may provide insights into varied constituencies, including schools of education concerned with the preparation and development of both preservice and in-service ELA teaching. Teacher educators and schools of education as a whole that are committed to identity-orientations to teacher preparation should be able to find insights in this work that will help them prepare English teacher candidates to take up identities as English teachers who understand the complexity of integrating technology as curriculum.

This study may also be beneficial for administrators, as they might be able to use this work to identify strategies for supporting, sustaining, and retaining ELA teachers as they work to meet policy demands while negotiating professional and personal identities.

In this first chapter, I inform the readers about what I learned about being an ELA teacher using technological resources to develop teaching curriculum. Chapter two of this dissertation has two purposes. The first is to outline the conceptual framework for this study and the second is to review related literature. Chapter three provides a more detailed account of the methodology, including more information about the specific strategies I used to answer my research questions. Chapter four focuses on the study findings. Finally, chapter five offers a discussion of the findings and proposes future areas of research. Ultimately, this dissertation investigated teachers' curriculum-making in relationship to multiple levels and types of policies in their teaching contexts. Therefore, this work contains policy implications for the local, state, and national contexts. The implications centered on how what considerations might need to be explored as a school or district embarks on a certain technology initiative.

CHAPTER 2:

REVIEW OF LITERATURE

The purpose of this chapter is to organize the major theories that came to govern this study of English language arts (ELA) teachers' curricular responses to technological narratives. Since this study was heavily grounded in curriculum, it begins with a discussion of curriculum as it has evolved as a term in educational research. I will then explore the conceptual framework obtained from Clandinin and Connelly's (1986; 1988; 1990) work regarding *curriculum planning* as emerging from *personal practical knowledge*, McAdams' (1993) conception of *personal myths of self*, Cuban's (1986; 1993; 2009) research on *technology for teaching and learning* in schools, and Spillane (2002)/Spillane, Reiser and Reimer's (2002) proposition regarding *policy integration* as the result of learning over time. I also review literature relevant to my topic of ELA teachers' technological curriculum-making. For the review of literature, I describe my search criteria including the search terms used, and how my findings were organized. At the end of this chapter, I preview the methods and strategies I used in for the study that I discuss further in chapter three.

Perspectives on Curriculum

In very general terms, curriculum is the "stuff" of schooling (Ladson-Billings, 2016). It consists of content taught as well as the other activities such as sports and clubs in which children engage during the day. In fact, there is so much curricular "stuff" that identifying discrete pieces and organizing them is difficult.

In fact, little research has been conducted on curriculum within the American Educational Research Association (AERA). Another AERA presidential address by Maxine Green (1982), proposed curriculum was primarily about creativity and artistry. These two past AERA

presidents articulate the ongoing debate among curricular theorists as to the proper curriculum development ideology which include (1) a list of concepts to be taught, learned, and tested *or* (2) the totality of experience in a supportive social settings augmented by creativity and reflection (Cremin, 1971). The following sections explore these two ideologies.

Curriculum as a List of Concepts

Curriculum can be conceptualized as a series of directed activities that occur in school (Cremin, 1971). The work of Tyler (1967) exemplifies this ideology. He stressed the role of the learners in making sure that they took up the learning available to them. Based on this framework, curriculum functions as a device of conditioning where learners are able to respond correctly to conditions that are presented to them outside of school. Since there is a notion of "correct" in the conception of curriculum as a directed set of activities, curriculum is delineated by a set of official documents outlining the concepts that must to be taught to students and the order in which they ought to be taught. Further, the concepts must be evaluated in order to determine whether learning has taken place. Therefore, drafting committees develop these curriculum documents and accompanying testing materials at a central office or geographically regional level.

Drafting committees strive to form a consensus as they take into account a variety of factors, such as what is known about cognitive development of children from various age ranges and "best practices" in a given subject area. The goal of official curriculum is to prepare students for life outside of school, including college or career readiness. Within this framework, research on teaching emerges as a quest to identify what teachers need to know in terms of content and what pedagogical skills they need to match to content in order to help young people learn (Schulman, 1986).

There are a number of criticisms of the official curriculum model. For example, Noddings (1996) questions the assumption that all students will benefit from learning the same or highly similar material. She notes that the United States and many other countries are built on stratified economies requiring workers to have a wide range of skills and dispositions. These jobs remunerate workers at a range of levels that are guided by political and social forces, rather than the inherent worth of the labor. If, as Noddings argues, everyone learns the same or highly similar content, why do all citizens not have access to higher education and reasonable pay for their work?

Ultimately, Noddings (1996) and other curriculum scholars like Apple (2004) believe that there will always be stratification leaving some people, however well-educated according to common standards, in poverty and/or unable to access higher education. When this happens, society makes judgments about the inherent worth of individuals or about the superior intellect of certain groups to hide the effects of class-based privilege. Efforts at articulating and testing curriculum may deny inequality of circumstances and allow the public to avoid weightier conversations about privilege and poverty.

Another concern about standardized curricula is that they are constructed by professional consensus and generated with assumptions about students' baseline knowledge and skills. Some of these assumptions are based on what is referred to as the *hidden curriculum* (Jackson, 1968) where certain cultural backgrounds have capital in the form of knowledge or ways of being (Bourdieu, 1986) regarded as superior. Children who lack hidden capital might appear to be performing below the standard. Doyle and Sandford (1985) performed such classic work in classrooms where they focused on how teachers helped students learn by maintaining patterns of work so that content could be learned efficiently.

Curriculum as Experience

The contrasting ideology around standardized curriculum development takes into account the entire range of individuals' experiences. Importantly, the broad range of experiences individuals have occurred in many settings both in an out of school. Dewey's (1938) philosophy exemplifies this perspective. In Dewey's view of curriculum, part of the school experience should be about having the opportunity to inquire into experiences that have been facilitated by teachers, but not dictated by them. Furthermore, Dewey contends that there should not be any real separation between life outside of school and the educational process. Schwab (1978) built a model of curriculum as the amalgamation of teachers, learners, subject matter, and milieu as they merge during activities. These activities are the experiences where curriculum-making occurs.

Other scholars who are more concerned with curriculum as a holistic experience include Greene (1982) and Eisner (1993), both of whom were concerned with aesthetic experiences for teachers and children in the classroom. However, the aesthetic is not the end goal for these scholars. Giving children the opportunity to discover identities and preferences and preparing them, not just for work but also for happiness in adult life, is paramount to this perspective. One primary criticism of this ideological orientation is that it is difficult to evaluate its efficacy. However, researchers such as Moll, Gonzales, Neff, and Amanti (2001) made efforts to bring children's experiences into the classroom for the purpose of contextualized curriculum-making, known as Funds of Knowledge. In addition, Huber, Murphy, and Clandinin (2011) have looked at the ways in which children can also engage in formal and informal curriculum-making as they travel back and forth between home and school.

In this study, I acknowledged a view of curriculum as concepts on a list that had to be taught. Indeed, I discuss some of the policies and other documents that I felt might impact

curriculum in chapter one. However, since I was concerned with the curriculum-making of teachers with students, I also had to position myself to see the ways in which the more experiential view unfolded in specific teachers' classrooms. With this acknowledgement of curriculum as two very different kinds of "stuff," I designed my conceptual framework.

Curriculum-Making with Personal Practical Knowledge

Clandinin (1986) proposed that the personal experiences teachers brought to teaching, coupled with experiences from teaching itself, were brought to bear in curriculum-making. What is also important to consider when using this conception is the way in which personal knowledge sustains teachers in their work but presents challenges (Clandinin, 2016; Schaefer, Long, & Clandinin, 2012). Placing curriculum-making within the framework of personal practical knowledge maintained the focus on the teachers' personhood and individuality and not just sources of assignments. In chapter one, I began by recounting some of my own experiences about technology in my teaching as I developed curriculum. This recounting was undertaken for the purpose of demonstrating my interest in the personal practical knowledge of teaching with technology and the storied nature of teacher identities. These ideas came to me from the work of Clandinin and Connelly (1986; 1990; 1999; 2000) and Connelly and Clandinin (1988) whose work I have been reading, studying, and considering for a number of years. In fact, major concepts from their work have governed much of my own as I have moved from teacher to teacher-researcher to scholar (Rice, 2011; 2012; 2014).

Thus, as soon as I defined the topic of teachers and technology, I was drawn to curriculum-making as relational activity naturally. The central tenets from their work include the idea that teachers' personal practical knowledge is embodied in story and image (Clandinin, 1989). The process of working with teachers in a personal practical knowledge frame involves

teachers remembering stories they came to live by long before they came to teaching. During such work, teachers are given space to confront their own tacit stories about the children and youth with whom they work. Looking at teaching and curriculum-making as expressions of personal practical knowledge also asks fundamental questions about how young people come to know and how we as teachers and, to some degree also researchers, come to know about them. I determined that I wanted to look carefully at how teachers' stories relate to their use of technology for curriculum development. Identifying connections between personal and practical knowledge would be an important part of the study. Finally, listening to the considerations that they made in order to learn about the young people they worked with would be recorded and considered.

Clandinin and Connelly's (2000) language is helpful for discussing space, place, and time using the metaphor of a professional knowledge landscape that centers on school. Experiences in schools and classrooms, by extension, can be conceived as plotlines that are influenced by many factors and are related to one another in complex and shifting ways from both moral and intellectual standpoints. Plotlines emerge around significant experiences that come to define beliefs about an event or phenomena.

Ultimately, this lens is important because it attempts to tie together critical beliefs about teachers' identities and experiences as expressed through curriculum. However, it was insufficient as a sole lens for looking at what teachers say about how they make curriculum with technology because it does not attend directly to the creativity behind the storytelling. For this, McAdams's (1993) work provides a basis for thinking about teachers' curriculum-making as craftwork sustained by myth that completely transcends teaching.

Personal Mythmaking in Adulthood

According to McAdams (1993), becoming a mythmaker is part of adult life. Doing so requires that individuals construct their pasts in ways that allow them some coherence in the present (McAdams, 2006). The notion of coherence in identity and the linkages of identity within generations in McAdams's work drew on ideas from Erik Erikson, a developmental theorist whose work I had come to study during my master's work (Rice, 2011). Erikson (1994) used stages to construct a model for psychosocial development that describes how healthy people ought to develop through their lives. Much of the work in one stage was re-confronting or re-resolving what happened in earlier stages both personally and through intergenerational contact—or the interactions people of different ages have. In this sense, one could always go back and perform identity work that had not been positively resolved before. This was important in my own work with students. Every day I went to work, there was an opportunity to start over with the students, identify new ways of working with them, and design new instruction. In doing so, the novelty of the tasks was not divorced from the past, but also did not depend on it. In McAdams's terms, teaching was an opportunity to enlarge the *redemptive self*, which was necessary for psychological well-being and in order to maintain a willingness to engage with and invest in community life (McAdams, 2006).

Other scholars have been influenced by McAdams's (1993) qualitative research, especially with adults in regards to their occupational autobiographies. Two recent examples of this are Hays and Maslen's (2015) work about safety stories that professionals tell in their work in order to increase compliance with corporate policies, and Harris, Simi, and Ligon's (2016) work about journal articles where the interview participants are political extremists. In both of these cases, deeply held narratives are the focus of analysis. Whatever the topic, the goal in conducting work with McAdams's ideas in mind is exploring social linkages across time.

To explore the idea of these redemptive, intergenerational linkages in his work, McAdams (1993) drew on Erikson's (1958) work, *Young Man Luther*:

> To be an adult means among other things to see one's own life in continuous perspective, both in retrospect and prospect. By accepting some definition as to who [they are], usually on the basis of a function in the economy, a place in a sequence of generations, and a status in the structure of society, the adult is able to selectively reconstruct [a] past in such a way that, step by step, it seems to have planned [them], or better, [they seem] to have planned it. In this sense, psychologically we do choose our parents, our family history, and history of kinds, heroes, and gods. By making them our own, we maneuver ourselves into the inner position of proprietors, of creators. (pp. 111-112)

If individual mythmaking is a matter of selectively constructing a past, then pasts can be constructed to make our lives make sense. McAdams shaped the arc of the adult myth around what he referred to as *nuclear episodes* in his research. These episodes are stories that have critical value—from the adult's perspective—for making a life. These episodes can be important to family life, education, career, or any number of other arenas. As part of his research, McAdams elicited these episodes from participants by asking questions about high points, low points, turning points, earliest memories, and memories of childhood, adolescence, and adulthood. The most important quality of a memory to make it a nuclear episode was whether or not the participants felt that the events they described changed them.

At the core of McAdams's (1993) work is the argument that we shape and are shaped by the stories that we tell. He also argues that myth is a core creative process grounded in autobiography that adults use as they move through their lives. People come to know who they are by creating a heroic myth of themselves. This myth begins unselfconsciously in childhood.

During adolescence, people create ideological settings where myths can emerge. As people move into adulthood, they refine their myths, incorporating elements as images and casting themselves and others into well-defined characters. In my own work, I wanted to elicit nuclear episodes about these teachers' lives generally, but also to ask them to position their lives in terms of the technologies they were surrounded by and with which they were engaging.

What is important about a personal myth in McAdams's (1993) view is that we never stop making them. This means that humans are in a constant stage of adaptation and that they can also integrate new ideas, new characters, and new objects into their personal myths. Such circumstances are ideal for thinking about technologies and the relationships we have with them. Along with the understandings I was developing about teachers, their identities, and their stories, I realized that I needed to make sense of technological integration from a historical perspective. Cuban's (1986, 1993) work is particularly helpful for this because of his description of technologies in schools as both an institutional and personal struggle for teachers.

Technology for Teaching and Learning

Cuban spent much of his academic career looking at technology integration (or the failure thereof) and trying to make sense of it. One of his primary conclusions was that teachers value relationships with students above instructional efficiency. This was a primary reason for teachers' hesitancy to use technology, beginning with instructional radio, moving through instructional television, and finally to the Internet. Further, he posited that the top-down directive for teachers to use technology often achieved the opposite of what lawmakers and administrators hoped teachers would do with technologies. As he conducted his research, he noted that many technological devices were in schools but went unused in the regular course of classroom life. In one study of schools in the Silicon Valley, Cuban, Kirkpatrick, and Peck (2001) observed:

> Teachers told us that they did not have enough time to incorporate computers into their daily teaching. They would need hours to preview web sites; hours to locate the photos they required for the multimedia project they assigned to students; hours to scan those photos into the computers; and hours to take district or corporate courses to upgrade their skills. (p. 829)

These descriptions were striking to me as I read, remembering the one computer in my fourth grade classroom as a student that sat in a box. I asked my teacher about it and she said she did not know how to set it up. I offered to try and she gave permission. I remember sitting with the monitor, the central processing unit, the keyboard, mouse, and several cords trying to make a map in my mind of what should connect to what in order to get the machine to turn on.

After several failed attempts, I flipped a switch on the surge protector. The monitor hissed a little and the central processing unit started to make clicking sounds. I had done it. All of the students in the class took turns using the computer the rest of the year. In the spring, it was re-packed and inventoried. My teacher lamented as I walked out of class that her class next year might not have the chance to use the computer. I remembered this and in the fall of the new school year as a newly minted fifth grader, I returned to my own fourth grade class and set up the machine during recess. Before the day was out, three other teachers had asked me to hook up their machines. I cannot recall everything we used the computers for, just that we had them and they would turn on, and we took turns and shared. I am certain that they were not an integrated part of instruction. I was reminded of Cuban, Kirkpatrick, and Peck's (2001) declaration at the end of the Silicon Valley study:

> Fundamental changes would need to be made in how schools are organized, how time is allocated, and how teachers are prepared. Hardware manufacturers, software firms, and

> telecommunication companies would need to improve product reliability to limit the defects in their wares, expand technical support to teachers, increase speed of Internet connection at little cost to schools, and test software on consumers prior to marketing them to district and state administrators. Without such major changes, only modest, peripheral modifications will occur in schooling, teaching, and learning. Teachers will adapt innovations to the contours of the self-contained classroom. New technologies will, paradoxically, sustain old practices (p. 830).

Cuban's (1986; 1990; 2009) work offered much insight into the ways in which technologies were conceptualized around issues of policy at multiple levels and the ways in which teachers attended to policies at a day-to-day level. Coupled with what I had learned about teachers' stories, their identities, and their myths, I realized that there was some connection between all of these ideas, and I hoped that a scholar had spoken to this issue. When I located Spillane's (2002) work, I realized that I had found the theory I needed to think about how teachers integrate multiple elements into their practice over a period of time.

Policy Integration in Educational Settings

Cuban's (1986; 1993; 2009) observations dovetail with the final lens from Spillane (2002), who questioned the popular framework for critiquing change in schools, stating it was a matter of agency alone. In other words, policy implementation is not merely a matter of whether teachers *want* to implement the policy, but rather it is a matter of whether teachers can comprehend and implement the policy in their local contexts. Thinking about policy as learning considers the ways in which various kinds of policy stimuli operate in implementing agents' sense-making. Critical to this process is the development ideas and representations that empower implementing agents in their sense-making. What do words like *compliance* mean when it comes

to policy implementation? Further, how do shifting notions of *compliance* that vary from individual to individual and from context to context become recognizable as such to others?

Spillane and Thompson (1997) wrote about how researchers had initially conceptualized knowledge construction in the school reform implementation process:

> While they did illuminate the motives or preferences that affected implementers' behavior, they generally did not examine the processes of reconstructing knowledge, beliefs, and dispositions entailed by complex behavioral change. In other words, they did not portray policy implementation as a process in which teachers and others must change their minds in order to change their practice. As we suggested earlier, implementation of recent mathematics and science reforms will require teachers to learn a great deal about subject matter, learning, and teaching. Such learning consists not merely of acquiring more information and skills, but of transforming or reconstructing a great deal of what most teachers now know, believe, and habitually do. Most teachers will have to unlearn much of what they already know as well as learn new things. (p. 186)

While I was primarily interested in gathering information about teachers' personal practical knowledge of teaching with technology and using that knowledge, presented in a largely narrative frame to examine experience, I realized that I needed some way to also talk about what happened when teachers might take up new understandings and use them in their practice as I was working with them. Rather than discuss shifts in practice as a reliving or retelling of a narrative, I wanted to find language that addressed what a teacher might do as learning, realizing that the learning, the relearning, the reliving, and the retelling, would all be part of what teachers were doing as they made curriculum in their classrooms with their students. Further, I was interested in using Spillane's ideas because of the attention he focused on educational leaders as

people who could support that learning, and I wanted to be able to discuss those interactions between the teachers who would come into my study and others on the school landscape who they saw as sources (or expected sources) of support.

Policy implementation is a process of learning what policies are and making decisions that enable agents to determine what is in their control, what is not, and what their professional responses should be to these conditions. This focus on understanding policy and its implementation is critical due to emerging policies around technology use in education and environment where local implementation of new policy is already difficult (Spillane, Reiser, & Reimer, 2002). From a cognitive perspective, a key dimension of the implementation process is whether, and in what ways, implementing agents come to understand their practice as shaping and being shaped by policy. These policies include things such as curriculum documents, but also articulated policies at the state, district, and school level around what material can be taught and how it ought to be taught (Ajayi, 2016). Finally, there are unspecified issues of culture within schools that operate to unofficially drive what teachers do. Teachers have formal in-service opportunities where they are able to learn about official policies and strategies to satisfy these policies. Teachers are expected to learn the unofficial policies through experiences, often reactive experiences when policy is broken, and receive corrective action (Corbett, Vibert, & Green, 2016).

Although teachers do interact with other educators and in their communities, they are also individual sense-makers. It is important to consider what individuals notice and how they interpret stimuli, as well as how prior knowledge, beliefs, and experiences influence the construction of new understandings. Thus, there is space in this framework for agency. In other words, understanding what teachers want to do and what their goals are become important in

how they make curricular decisions in their classrooms. These desires and goals can be based on their understanding about their past experiences. Yet in this framework, teachers' learning both enables and constrains their agency.

Finally, it is important in policy implementation to consider that when teachers fail to implement policy or attend to what has been identified as an optimal practice, that they do not do so out of resistance. There is a complex network of circumstances that fail to support policy implementation. Finally, using cognition and learning as a part of a framework helps explain how teachers can fail to implement or fail to appear that they are implementing some aspect of policy and not necessarily be burned out and ready to leave teaching. Instead, teachers can just be professionals who do what they can to the best of their ability in a particular moment under particular conditions.

Returning to the Whole Conceptual Framework

As I have just described, curriculum-making as I considered it for this study is both relational and complex. Figure 1 depicts the relationships within the framework I have just described and which I used in this study. Curriculum in this figure is surrounded by three interlocking pieces: personal mythmaking, technology integration as a struggle, and policy integration as learning. Personal mythmaking as a lens extended the notion of personal practical knowledge by allowing me to frame the teachers' understandings about technology in their autobiographies that would include episodes and events that have reverberations that move beyond teaching. The creation of a personal myth connotes a struggle that, in terms of technology use and understanding, has been articulated as such within a historical context. Attending to that historical context of how technology has been traditionally used in schools ties

teachers not just to their own autobiography but situates them within the larger picture of what has been happening in schools since before they were even born.

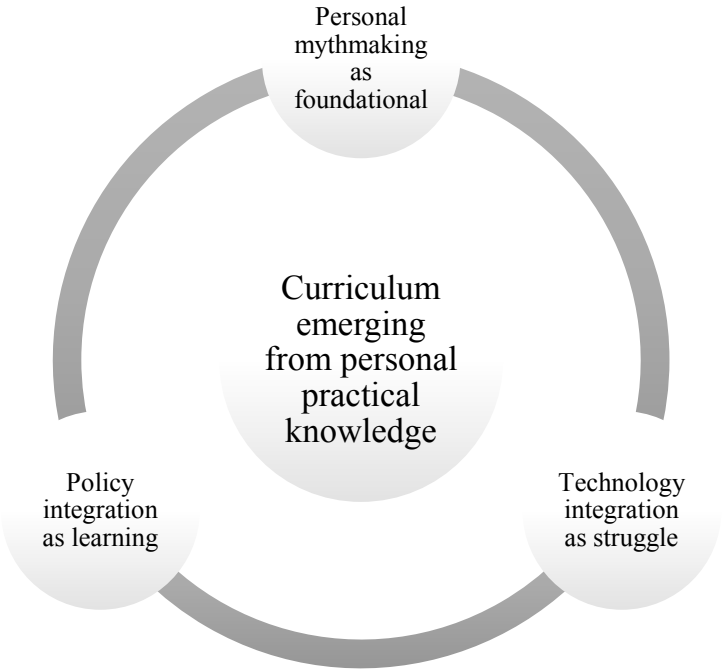

Figure 1. Conceptual Framework Governing this Study.

As teachers work within the context of their personal mythmaking while situated in a historical context around technology, they are also expected to disavow this history; to some degree, avail themselves of devices and data provided to help students learn more efficiently. If teachers are creating curriculum within both a personally constructed myth and a scholarly constructed history, their personal agency alone is insufficient to explain how a teacher might enact curriculum with technology in their routine practice. Instead, my theoretical framework highlights teachers as learners, rather than as merely agentive figures. Doing so opened up space for the potential that teachers *wanted* to follow policies that prescribed the use of various technologies in their classrooms as well as the other policies with which they were expected to

comply. However, part of their work, as Cuban (1986; 1993) put it, was their struggle was to understand the policy well enough to determine how to use it. Considering curriculum-making with technology in the context of policy learning coalesced into the idea of a *technological narrative*. This narrative was a coherent account of individual participants' understanding of technology in their lives and their struggles as they learned how to use it to teach.

Identifying and Reviewing Relevant Literature

As part of this project, I also conducted a literature review. Rudesdam and Newton (2001) argued:

> A good literature review needs to be selective, and it is taken for granted that the majority of source material you have read will not make it directly into the literature review…. One of our colleagues likens the process to a courtroom trial, where all admissible testimony by the witnesses must be relevant to the case and question at hand. Consistently ask yourself 'Why am I including this study or reference?' (p. 59)

In reading this, I realized that keyword searches might be a place to begin; my objective should not be merely to classify this information, but rather locate research reports that informed the study at hand. Additional support for this orientation to a literature review in a qualitative research dissertation comes from Maxwell (2006) who wrote:

> I am not denigrating or dismissing the value, for research generally or for a doctoral dissertation in particular, of an accurate and sophisticated understanding of the relevant theoretical and research literature. However, I emphasize two points about this understanding. First, the key word is "relevant"; relevant works are those that have important implications for the design, conduct, or interpretation of the study, not simply those that deal with the topic, or in the defined field or substantive area, of the research.

> Locke, Spirduso, and Silverman (1999) argue that "the writer's task is to employ the research literature artfully to support and explain the choices made *for this study*, not to educate the reader concerning the state of science in the problem area" (p. 69, emphasis in original). I claim that relevance in this sense, and not comprehensiveness or thoroughness, is the most essential characteristic of a good dissertation literature review. (p. 28)

In pursuit of such relevance, I sought to understand how English teacher identities intersected with literacies in technology-mediated learning experiences. My purpose was to learn what other researchers had already done to address the challenges and opportunities inherent in studying English teachers' identities as they built curriculum in various types of technologically supported classroom contexts.

In order to achieve my goal, I searched for literature on the subject from major education and technology research databases. Then, I carefully read resultant articles for research strategies. Additionally, the findings from studies of teacher identities in digital learning contexts were studied in order to identify the ways in which concepts such as identities, literacies, and technologies were defined and described.

Although their intent (to be exhaustive) was different from mine (to set up a research study), I drew on search procedures from Henrie, Graham, and Halverson's (2012) literature review about student engagement in technologically mediated learning. I determined that this was an appropriate model because of the recentness of the review and because of its overlay of a population (students), construct (engagement), and technology. I used the three databases offered through EBSCO host to gather literature: Education Resources Information Center (ERIC), Education Full Text, and the Computers and Applied Sciences Complete (CASC) database. I

chose both ERIC and Education Full Text because of their breadth in educational research. The CASC database was selected for its good coverage in general technology research. In addition, I wanted to find technology-related research in education that might be classified outside of ERIC and Education Full Text.

Relevant Search Terms

Two important search terms were *teacher identities* and *literacies*. The term *teacher identities* has been pluralized to represent the multiple, intersecting identities promoted in postmodern thinking about selfhood and its connection to narrative. *Literacy* has become a term that also has become pluralized in recognition of the fact that there are multiple forms of literacies that a person possesses in various communities for various purposes that intersect with multiple identities (Gee, 2003). Sometimes the term *literate identities* was used to merge the two concepts but it has not yet become a popular enough term to warrant its use as a primary search term. Therefore, I determined that it would not overlay with teachers because most work on literate identities has been conducted with reference to students.

Initially, I took my focus away from terms like *beliefs* because I did not want to review studies of teacher beliefs about technology or their literacies alone. I wanted to focus on articles that clearly had an identity orientation as a complex individual and socially constructed process and used the words *identities* and *literacies*. However, as beliefs and the cognition that entangles with them in work like Spillane, Reiser and Reimer's (2002) came to be part of my theoretical framework, and as I realized the dominance that work in teacher beliefs had on the issue of technology, I eventually opted to include studies of beliefs, as long as the work had a research focus that included secondary ELA teachers and discussed findings for them as part of the report.

I also wanted to study what teachers designed as curriculum as an entire set of activities in the classroom. In fact, curriculum was really at the core of this study. This meant that another major set of keywords emerged around *curriculum* and *curriculum-making*, *instruction/ instructional design*, and *lesson/lesson planning.* These words also helped to direct my search away from articles reporting research on technological effectiveness in classrooms.

However, I was interested in technology. Therefore, I needed terms that directed me towards the Internet or networked based technologies rather than articles that discussed non-Internet technologies like textbooks and chalkboards. For these reasons, I limited my search results to articles about English teachers with the words *literacies* and *identities* in the abstract, reasoning that a study focused on these research topics would be represented by an abstract including that term. In reading through the articles I was able to determine whether the study was concerned with curriculum-making. However, looking for *curriculum* and its derivatives in the abstract would have been too limiting because the holistic notion of curriculum is an uncommon focus in today's educational climate (Ladson-Billings, 2016).

In addition to the search terms *literacies* and *identities*, I identified four other categories of search terms using keywords from the initial articles I found to generate a manageable set of articles: type of technology, definition of identities, and definition of literacy, specific subject matter, and school context. *Technology* and words commonly associated with it such as *computers*, *tablets*, *cell phones*, *Internet*, *online learning*, and *digital learning* were used to locate articles that included that concept of technology-mediated learning. Literacies were searched using words that specifically addressed the complex nature (as opposed to traditional notions of reading and writing) such as *new literacies,* and *multi-literacies, digital literacies,* and *digital composing*. Identity terms like *self*, *selfhood*, *individuality,* and *personality* were used to

narrow results to articles reporting on studies that included identities as a component. School context terms were also used to capture studies that took place in secondary ELA classrooms, including *English, language arts, secondary English*, *literature*, and *middle school*. Finally, because I was interested in the curricular responses that grew out of this identity work, I looked for terms like *lessons, content, subject matter, curriculum, instruction,* and *implementation*.

I began with a large list of possible terms for each of these categories exploring the thesaurus feature provided by EBSCO host, which indexes subject terms assigned to articles within the database. The thesaurus feature was specifically used for developing search terms for the technology and school context categories. Possible terms were paired individually in a search with *literacies* and *identities* in all three databases. Any terms that did not yield results were dropped from the list. Final terms and search fields used in each of these categories are displayed in Table 1.

I began my search in July of 2015 and concluded it in March of 2016. In addition, I limited results by publication type, choosing to review only peer-reviewed, scholarly publications of empirical studies. This meant that dissertations and conference reports were not included. Limiting the scope in this way achieved a representation of quality research publications within a reasonable breadth of the literature. My final search resulted in a total of 24 unique articles. I then narrowed my initial collection of literature down to a body of work that I judged to be specifically relevant to the purposes of this study. The work of narrowing for relevance required me to search all abstracts for any indication that English teachers' *literacies* and *identities* with respect to technology and curriculum-making included phrases such as relevant phrases. Finally, before I selected a study for inclusion in my literature review I also verified that the study was conducted in a classroom environment.

Table 1

Search Terms for Literature Review

Term Topic	Additional Keywords
Technology	blended learning, computer-assisted instruction, computer-managed instruction, electronic learning, integrated learning systems, intelligent tutoring systems, mobile learning, virtual classrooms, web-based instruction
Identities	self, selfhood, individuality, personality, beliefs,
Curriculum	curriculum-making , instruction, instructional design, lessons, lesson planning
Context	high school students, high schools, higher education, intermediate grades, junior high school students, junior high schools, middle school students, secondary education, secondary school students, English language arts, literacy

Coding the search results. I analyzed the resultant publications to determine how research focused on teachers' understandings about technology as they made curriculum that also engaged the literacies of their students. Articles were sorted for relevancy and context. I restricted relevancy to those articles that attended most directly to my major search categories. Although my project was aimed at teachers' curricular responses to technologies, I wanted to look specifically at work where teachers were planning for student technology use as an eventual outcome, even if students did not use the same technologies or they did not use them immediately. This process of reading and sorting the articles, led to the exclusion of more than 30 articles from my list due to the reasons outlined above.

In considering the research context of the studies, articles were coded for grade level, number of participants involved in the study, type of course involved, location of the learning experience, and technology used. Since I planned to study ELA teachers, it was necessary to

ensure that the studies either involved secondary ELA classes directly, or least resonate heavily with work conducted in typical ELA classes, such as reading, writing, researching, or presenting in either narrative or expositional modalities.

The next step of my review was to determine the impact of research, which I based on Google Scholar citation metrics (as of March 2015). Google Scholar is a useful resource for gathering citation counts because of its indexing breadth and capacity to give current results (Halverson, Graham, Spring, & Drysdale, 2012). I searched the title of each relevant publication in Google Scholar and recorded the number of times the publication had been cited. I sorted my results by citation count and identified a list of the ten most cited publications overall. I then reviewed these publications to highlight the contributions made.

Findings from the Review of Literature

After engaging in this extensive literature review process, several patterns emerged, which I integrated into a set of interrelated concerns about curriculum and technology in ELA classrooms. Figure 2 depicts these concerns as preparation for ELA teachers to teach with technologies, access to technologies for teachers and students in ELA classes, the use of technology by teachers and students as part of ELA curriculum, and the outcomes of technology use in ELA coursework.

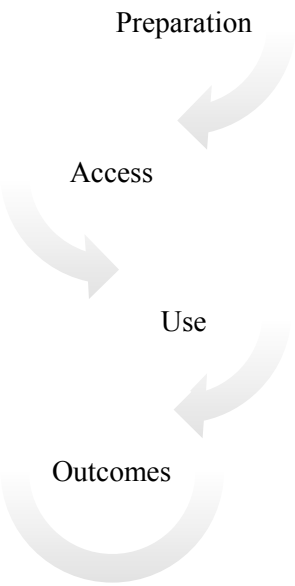

Figure 2. Integration of Findings from Literature Review.

Each of these elements (preparation, access, use, and outcomes) will be detailed in the sections that follow. The studies that will be shared include those that were relevant to the study I was planning in terms of content, conceptual overlap, and/or methodological strategies.

ELA Teachers' Technology Preparation

The preparation to teach with technology has focused more on developing theoretical perspectives and standards using descriptions of preparation programs. One of the earliest and most-frequently cited scholarly work focusing on preparing ELA teachers for technology came from Selfe (1989). In her edited volume, *Computers in English and the Language Arts: The Challenge of Teacher Education,* she describes the dilemma facing ELA teachers as one dealing with a "dizzying, complex world of educational technology *and* instructional change" (p. 14, my emphasis). The chapters in her book also described the ways in ELA teachers had to compete with math and science teachers for computer access and decried the use of technology for simple

work like essay typing. The main purpose of the book was to profile ELA teacher preparation programs that integrated technology and suggest a blueprint for other programs. Notable about her work is the way in which the various chapters focus on preparing teachers to use computers to promote language and literacy skills and as part of a comprehensive program of instruction.

Another important development in the field was Barton's (1993), articulation of two primary areas of technological focus: computers in writing instruction and integrating technology into concepts and definitions of literacy. The literacy aspect of this argument was timely since scholars like Luke (1998) were calling attention to an educational clime dubbed *New Times*. These New Times were not just about technology: they were about acknowledging issues of social justice in literacy instruction, yet technology was certainly part of the New Times. Eventually, the second focus became more important in ELA teacher preparation and teaching. For a fuller discussion of New Literacies, see chapter one of this dissertation.

1. In terms of policy for preparing ELA teachers, Pope and Golub (2000) referenced Selfe's (1989) work to develop curriculum standards or guidelines for the preparation of English teachers with regards to technology. These standards were published in *Contemporary Issues in Technology and Teacher Education* and include the following*: Introduce* and infuse technology in context;
2. Focus on the importance of technology as a literacy tool;
3. Model English language arts learning and teaching while infusing technology;
4. Evaluate critically when and how to use technology in the English language arts classroom;
5. Provide a wide range of opportunities to use technology;

6. Examine and determine ways of analyzing, evaluating, and grading English language arts technology projects; and
7. Emphasize issues of equity and diversity. (p. 90)

In the same journal several years later, Bush (2003) challenged Pope and Golub (2000), stating that while the guidelines were clear, there was no advice offered as to how to implement these standards in teacher education and further, that there was no clear rationale for *why* they should be done. As an alternative, Bush proposed that activities in teacher education that focused on technology should cause teacher education programs to evaluate whether their tasks will (a) help teachers learn to understand appropriate and inappropriate uses of technologies in ELA classrooms, (b) create an understanding of context in the integration of technologies and ultimately, (c) help teachers become reflective and critical in their uses of technologies.

At the heart of Bush's (2003) critique is the notion that teachers should not teach with technology just to do so. Rather, teachers should teach students to use technology to meet social and cognitive goals. Bush said schools should be suspicious when they are offered expensive and flashy gifts of technology that were apparently popular in the early 2000s. Educators should consider the potential motives behind such gifts attempt to discern whether technology use was going to take over the work of learning or whether it could genuinely enhance it.

A year after Bush's (2003) critique, Young and Bush (insert date) wrote what they referred to as a critically based pedagogical framework for ELA teachers and published for a second time in the journal *Contemporary Issues in Technology and Teacher Education*. In this article, they stated Pope and Golub's (2000) work was "a good starting point" (p. 2) but did not address or discuss the article further. Young and Bush (2004) argued that the purpose of the article was to provide more specific directives for ELA teacher education programs. The crux of

their work was to profile, as Selfe (1989) did, programs in ELA that were attempting to meaningfully integrate technology into teacher preparation. Before sharing these cases they offered a list of things technology should do in an ELA classroom and things that it should not. Technology should:

- Work to validate individual students and empower their ability to achieve academic and "real world" success;
- Supplement and enhance instruction and, in effect, work almost transparently and seamlessly with content instruction;
- Supplement and enhance traditional print/literature/media materials;
- Provide additional resources and create wider access to them;
- Expand students' means of expression and broaden their opportunities to reach meaningful and authentic audiences;
- Deepen students' understanding of complex issues and enhance their ability to make more global connections;
- Expand and enhance the definitions and dimensions of literacy (critical, digital, media, and otherwise); and
- Facilitate an open forum for discussion that allows for more opportunities for free and democratic participation and dialogue.

Technology should not:

- Replace complex language and developmental goals with more simplistic "learn technology" goals;
- Replace teachers or pedagogy;
- Complicate or supersede content instruction or become the content focus of

instruction itself;

- Replace or overshadow traditional print/ literature/media materials;
- Limit appropriate resources or access to them;
- Disrupt or complicate normal classroom community efforts and objectives for addressing audience;
- Diminish students' ability to participate or contribute by favoring students with advantaged access to technology;
- Deepen social, racial, gender, and economic inequalities;
- Stifle creativity or opportunities for using the imagination or multiple Intelligences; or
- Completely replace teacher-student and/or student-student "face-to-face" communication and interaction. (p. 12)

These lists are important for several reasons. First, they lay out the argument around teacher preparation as to whether technology had a rightful place in a curriculum of its own accord or whether it should only be used as a means of achieving other curricular ends. These attempts at preparation standards also raise the issue of social concerns as they pertain to equity and access. But most importantly, the lists make an explicit connection between technology and literacy, namely that technology is a form of literacy and that technology can be used to teach literacy. In so doing, they drew together literacy teaching and technology with what were previously considered exclusively ELA content and processes from rhetoric and composition disciplines, such as audience awareness, and creativity in writing. The argument over whether to use technology to teach shifted to an imperative to do so in order to meet literacy goals.

In essence, the lists made ample space not just for literacy, but also for disciplinary literacy as inextricably intertwined with technology. A final critical element of this movement (?) appeared in 2006 when Swenson, Young, McGrail, Rozema, and Whitin advanced an argument about ELA teaching, technology, and literacies in the journal *English Education.* Here these authors move away from teacher education and focus on English educators saying:

> Newer technologies are reshaping our lives and our communities in complex ways. Thus, an examination of literacy practices involving technologies deserves special attention, not because they are separate, but because they are central to effective English education in a rapidly changing world (p. 351).

Now the argument that technology integration was an issue of literacy that would impact the teaching of ELA content had been solidified within the English discipline in one of its most important journals.

Historically, ELA pedagogy was about reading linguistic texts and responding to them with more spoken and written text. ELA pedagogy should focus on navigating various types of texts, including responding to them in various ways. Mastering many methods requires facility with new texts and new ways they can be produced. For example, ELA teachers previously taught about persuasion as oral exercise where deliberators stood up and used Greek rhetorical techniques to build immediacy with an audience in front of them, who ostensibly came to see them and listen to them. In the new framework of disciplinary literacy through technology, persuasion became a matter of embedding sound, colors, and animations into documents that had the potential to reach audiences at different points in time. As well, it allowed individuals to determine instantly whether they wanted to engage with the argument or click out, turn off, or move away from the message. Under these circumstances, scholars began to propound the

importance of access to technologies since the debate over whether to use technology in teacher education was effectively due to the fact that now technology was literacy and preparation to teach with technology should reflect that paradigm.

Citing these considerations, scholars like Shoffner (2009a) conducted research studies that integrated technological elements into preservice preparation and documented the preservice teachers' use of technologies for their own learning. In Shoffner's study, she found that when prospective teachers in a teacher education program were given a choice regarding whether and which technologies to use for their reflection assignments, they engaged with the one that they perceived as being easier or simpler to use. In another article published the same year, Shoffner (2009b) depicted preservice teachers' difficulties in finding time and places for asynchronous weblog assignments and she framed her findings in terms of a disposition or attitude towards the technology itself. Based on the study findings, it was difficult to engage preservice in technologically supported preparation, which lead to concerns that they would fail to prioritize it for their future classroom practices.

As I read this work about preparation, I was struck by the focus on program development and the proliferation of policy recommendations that were made, which were competing and even conflicting. I wondered what teachers came away with from efforts to prepare themselves in terms of the pressure they may or may not feel to implement curriculum with students in certain ways. Particularly, the potential interaction between how teachers had been using technology as people *before* they came to teaching and *apart* from their teaching was interesting because certainty that must have some bearing on the disposition to use technologies to make curriculum. I wanted to hear stories that provided insight into preparation as more than the formal programs in which ELA teachers might have participated.

Ensuring Access to Technology in ELA Classrooms

The issue of how to provide access to technology in ELA courses had two major points. The first was about ensuring that teachers had access to technologies with which they could teach, with one-to-one computing leading the charge of named devices in the 2000s (Spires, Oliver, & Corn, 2011). The second was about making sure students had access to these technologies and the recognition of the fact that in many cases, students may only have access to many kinds of technologies like computers and the Internet in school.

Empirical studies ensued to identify associated levels of access and the impact of access to technology on student success. One such study was by Kajder, Bull, and Van Noy (2004). This study looked at the accessibility of weblogs in an ELA classroom. They found numerous affordances of incorporating this technology into writing practice, but did note that students who did not have Internet access at home were at a disadvantage and indeed not all computers in the school at the time of the study were Internet-ready.

O'Dwyer, Russell, Bebell, and Tucker-Seeley (2005) conducted another study involving access to technology for ELA learning. These researchers examined the relationship between home and school computer use and students' ELA test scores in fourth graders. The study found that while controlling for prior achievement and socioeconomic status, students who reported using technology more frequently for learning tasks at school (e.g., editing papers) were more likely to have higher total ELA test and writing scores. However, the use of technology at school to prepare presentations was associated with lower ELA outcome measures. These findings suggest that not all technological uses have equal potential for promoting student success.

Finally, students' recreational use of technology at home caused decreases in achievement on the learning outcomes that were measured.

From an assessment perspective, the O'Dwyer, Russell, Bebell, and Tucker-Seeley (2005) study's findings make sense. Students who engage in classroom tasks that are closely tied to assessment tasks will do better on the assessment. Further the disconnect between home use of technology and lower achievement outcomes says much about the discrepancy between the way in which technologies were used in and outside of the classroom. The findings of these studies suggest that access alone is not as meaningful as how students interact with the technology that they can access

The research on access to technologies for teachers and students culminated in the National Educational Technology Plan (U.S. Department of Education, 2010), which asserted "all students and educators will have access to a comprehensive infrastructure for learning when and where they need it" (p. 21). In this document, infrastructure was defined as people, processes, and technologies for learning. In terms of teacher access, one study with important findings comes from McGrail (2007), aimed to identify what happens when secondary teachers are given laptops for use in ELA classrooms. The outcomes of this study were generally negative. Teachers reported frustration with classroom spaces that were not designed for technology, poor technological infrastructure, and what they considered imposition of technology. This study uncovered the concern of access in classrooms as one that teachers and students in a classroom setting share. Although the device was present in the classroom, access to the affordances of the device was far from assured.

When there are devices and clear initiatives in a school around technology access, there are new questions about whether the teacher or the student receive the device and/or are in

charge of the program. For example, Wexler's (2000) study of a virtual community suggested that teachers and students share and change roles frequently as technology experts. Yet, teachers are regarded to have more access to technology in a classroom since they control when students can use the devices. Even so, teachers cannot necessarily control what students with the devices once they are in the students' hands.

One area where access was deemed as especially inadequate to devices for teachers was in rural settings (Sundeen & Sundeen, 2013). In a survey of over 4,000 teachers in more than 2,000 school districts of all types (rural, urban, and suburban) across the United States, rural teachers reported unique access problems. Among these problems were bandwidth for running Internet activities and budgetary problems that prevented the acquisition devices and their implementation. The conclusion of this report was that rural teachers needed additional funding in order to compete with larger, better-funded schools.

The consensus in research on access is that neither teachers nor students have the access to technology and associated resources to satisfy the demands of teaching and learning multimodal literacies. This access was deemed to be especially inadequate in certain settings. Such a conclusion made me wonder how teachers experienced access to technologies and in particular, I wondered about those experiences with different types of initiatives that were designed to improve access such as policies around devices, such as those mentioned in chapter one of this dissertation (one-to-one iPads, one-to-one laptops, increased teacher access to updated technologies, and Bring Your Own Devices).

Determining Technology Uses in ELA Curriculum

Becker (2000) outlined the exemplary uses of technology in instruction using data from nine science teachers, 13 ELA teachers, and 13 elementary school teachers. Among the study's

findings were the importance of using technology for curriculum-based uses; in particular, a focus on writing, problem solving, inquiry, and discovery-based learning. Further inquiry was needed to understand whether it was possible for teachers to universally enact this kind of teaching due to unequal distribution of resources between schools as a context or learning. Thus, Becker outlined the ways in which preparation, access, and outcomes determine the variability in the use of technology in classrooms (cite and add to reference list).

Russell, Bebell, O'Dwyer, and O'Connor (2003) conducted one of the largest studies regarding the use of technology among teachers. They surveyed almost 3,000 teachers in 22 school districts in Massachusetts and saw several interesting themes emerge. The first was that preservice teachers reported more comfort with technology, but they used less of it than more experienced teachers in their daily classroom practices. However, both groups were more likely to use technology for communication and lesson preparation rather than for designing technologically based educational activities for students. The authors concluded that teachers might need to use technology more often in their actual teaching practice. They highlighted teachers' beliefs about technology:

> Specifically, this analysis suggests that teachers' attitudes and beliefs toward technology are of great importance in their decisions to adopt and frequently use technology in the classroom. Quite simply, changing teachers' use of technology requires changing their beliefs about technology. It is not surprising then that the analyses suggest one way to strengthen beliefs is to provide opportunities for teachers to acquire familiarity with technology. (p. 307)

The attention given to changing beliefs was derived from questions about teachers' *confidence* with technology coupled with information gathered about what devices they had *used* and their

ratings of whether student-centered /teacher-centered technology use *would improve* student performance.

Since the early 2000s, much research has been directed towards introducing teachers to particular types of technologies. One such study came from Bauer and Kenton (2005). The study documented teachers' (N=30) use of technology. The findings were that students missed opportunities to engage in rich learning because the teachers were underprepared to use technology to teach and because the equipment to which they had access was simply inadequate. Once again, these scholars called for more researchers to enter classroom spaces, document teachers' use of devices, and show them how to do student-centered teaching.

Finally, Hughes (2005) studied ELA teachers as they took up technologies as part of professional development. He found that teachers only wanted to take up technologies in which they could see the immediate value. In this study, evidence from ELA teachers' perspectives that any particular technology is a good instructional tool was built on whether they perceived students as able to make succinct connections between the previous way of doing the task and the new, technologically enhanced task. These connections provided support that a device, program, or strategy would be helpful to students. Based on the study's findings, Hughes recommended that more content-specific professional development is needed to help teachers understand the ways in which various technologies could support student learning across subject matter.

McGrail (2005) studied ELA teachers' experiences integrating technology into the classroom. Participants included middle and high school English teachers with varied teaching and technology experiences. In this interview study, teachers described perceived achievement patterns, dilemmas, and concerns with regard to their and/or students' experiences with computer

applications. In their descriptions, the teachers revealed a greater interest in doing what was practical when it came to using technology. Teachers in this study indicated a willingness to increase technology use only if they could be presented with evidence that made sense to them that their effort was contributing to their students' learning and improving their instructional practices.

In another study of teacher use of technology, Judson (2006) identified 32 experienced secondary teachers (some of them ELA teachers) and asked them about their beliefs regarding technology in addition to observing them. Although he did not discuss his findings in terms of subject matter taught, he found that teachers' practices were often at odds with their beliefs. Specifically, teachers believed that teaching with technology was important but that little evidence of technology use, especially the kind that called for substantial student participation, was occurring. Judson considered the solution to this challenge to be more professional development for teachers so that they could carry out their beliefs that teaching in student-centered ways was important.

Finally, Flanagan and Schoffner (2013) compared a novice and an experienced English teacher's use of technology in their respective classrooms. The study identified that teachers had similar beliefs in the importance of technology in teaching. The novice teacher made the use of technology the focal point of the lesson, whereas the experienced teacher was more concerned with subject matter and technology use took on a secondary role. In fact, the experienced teacher was disinclined to use technology at all when she did not feel it was the best way to have the students work with subject matter. This was one of the only studies that attempted to combine beliefs about technology and teaching practice. The conclusion of this study shed light on the findings from other studies suggesting that teachers are not using technology, particularly

technology in student-centered ways, because of a lack of access or even a fear. Rather, the study demonstrated that experienced teachers made choices about how to implement their beliefs about technology in complex ways. Reading this work about use made me wonder what would be revealed by looking at several experienced ELA teachers in different locations as they engaged with their personal practical knowledge of teaching over a period of time.

Evaluating Outcomes of Technology Use in ELA

Although there are a number of studies about the effectiveness of technology in teaching in both elementary and secondary education, studies that are specific to ELA teaching are elusive. McNabb (2005) reported that less than 5% of studies about technology integration in ELA have reported endpoints related to the technology's effectiveness. In a recent literature review, Mills' (2010) looked at literature on what she called "the digital turn" in literacy research. This review profiled research studies emphasizing a transformation in the traditional power relationship between teachers and students. Within this transformation, students are given more control over what they learn. This goal of relational transformation was regarded as the ultimate outcome of using digital technologies, which presented a tension for evaluating outcomes as they have traditionally been conceptualized.

When English language issues emerge on the research landscape around technology's effectiveness, the participants are often English learners in the United States or abroad testing a particular device or program. For example, a comprehensive literature review of 350 English as a foreign language studies revealed little evidence of the effectiveness of technology in learning (Golonka, Bowles, Frank, Richardson, & Freynik, 2014). Other outcomes, such as the conceptualization of curriculum as an outcome, are absent in the research, which is troubling because it would seem from the literature that technology use, especially as conceptualized as

literacy, is a comprehensive social process that requires an orchestration of learning activities over time. The importance of curriculum as an outcome is also highlighted by the fact that issues of preparation, access, use, and outcomes are tightly woven pieces that replay across teachers' lives in and out of school.

Conclusion

This chapter offered a theoretical framework for my study of teacher's curriculum-making in the context of their technological narratives. I began by sharing my conceptual framework as consisting of four parts: personal practical knowledge, personal myths of self, technology integration as an agentive struggle, and policy implementation as learning. Then I turned to providing a literature review about the use of technology in ELA classes. I demonstrated the historical development of technologized educational practices through the lenses of preparation, access, use, and outcomes and illustrated how technology and literacy became synonymous.

The findings of this review, in concert with the conceptual framework I used, suggest several things about the need for research on the overlapping topics of ELA teachers, technologies, and literacies. In particular, it suggests that as teaching with technologies became entwined with literacies the content knowledge of ELA did not evaporate, but became complex to the point where it almost became hidden. In addition, the research suggests unexplored links between policy, identity, and implementation where teachers are experiencing pressure to use technologies as the primary way to teach literacy. This is especially critical since with the reauthorization of the Elementary and Secondary Education Act (Pub. L. No. 114-95, § 4104, 2015), technology use, especially in rural schools, went from being a matter of local pressure to

keep up with the New *Times* (of technology as a means to explore and develop literacies (Luke, 1998) to a mandate that will likely increase in intensity.

Finally, the research suggests that teachers' stories of technologies have been far less prevalent than technology researchers' stories of teachers. The only study seeking teachers' perspectives was McGrail's (2005) work, and in it she found that teachers were skeptical of technology's ability to meet their students' needs. But surely those ELA teachers and teachers in generally use technologies in their own lives. Are they skeptical of it then? What broader understandings might be revealed if ELA teachers were given the opportunity to demonstrate their use of technology as a curriculum with multiple interlocking instructional pieces and classroom habits over a period of time?

The next chapter will summarize and demonstrate the strategies I used during my own study in regards to data collection, data analysis, and the ways in which I interpreted the accounts I generated from each of my participants. These accounts will be used to uncover and explore their social significance in regards to my research questions in the fifth and final chapter of this dissertation.

CHAPTER 3:

METHODOLOGY

I sought understandings of these teachers' technological narratives in relationship to their curriculum-making practices (Schwab, 1978). This chapter provides a description of the phenomenological methodology (van Manen, 1990) that I employed as well as the specific strategies that I found useful in my work. In this chapter, I first provide information about the phenomenology as it relates to this study. Then, I describe the teachers I worked with, elaborate on my data collection processes, articulate the steps I took in analyzing the data, and provide examples of this analysis. I end with a discussion of reflexivity as I engaged in it and learned from it during this project.

Using Phenomenology as a Way to Study Ontology

There are many kinds of phenomenology. Finlay (2009) argued that the differences between types of phenomenology center on the definitions, goals, and positionalities embraced by the researcher. In describing this study, I tried to think carefully about my own position within these issues, and I offer some explanation below of where I thought that I fit philosophically as I designed this study. The process of aligning myself with certain ways of thinking about phenomenology is revealed.

While I demonstrate that phenomenology is a complex set of theories and attitudes that is not universally agreed upon, I came to believe it was suitable for answering my research questions because it has a primary focus on experiences and lifeworlds, which are at the heart of my inquiry. In addition, phenomenology allowed me to look at various situations and contexts in an expansive way where describing and interpreting could both take place. In addition, I could leverage my interest in curriculum as an aesthetic, non-linear process within a phenomenological

frame. Finally, phenomenology had space for using a theoretical framework to guide data collection and interpretation, although not all phenomenologists require such a framework.

Defining Phenomenology within the Postmodern

Ontological knowing acknowledges that understandings of information can be built by sharing ideas and stories with others (Jakubik, 2007). The sharing in an ontological framework are the methods used to help solve conflicts and contribute to learning in action; an essential part of knowledge creation (Orr, 1990). When seeking ontological knowing, phenomenology is often helpful because of its hermeneutic (meaning-making) goals as human rather than a natural science. Willis (2001) communicated this as well in his explanation about the relationship between cognition and other ways of interpreting ontological experiences:

> Before human activities and events can be subjected to analytical abstracting knowledge, they are received as experiences. Not only do humans name reality in the light of categories already established in their mind by a Piagetian process of assimilation and accommodation but the reality that is named is not perceived in a detached purely 'objective' way almost as if the human mind was imagined as a camera. It is presented as an 'experienced' thing in which what is placed before the mind for naming, is, as it were, a result of a mixture of sensory experiences, emotional responses, memories, prejudices and the like. (p. 2)

Not all phenomenologists agree as to whether phenomenological studies are part of the modernist or post-modernist tradition. However, since I desired to link phenomenology with ontology, the research frame that I develop aligns more strongly with postmodern sensibilities. For example, a more postmodern effort is present in certain aspects of my interpretation, such as

where I ultimately refuse to say that one teacher is stronger or better than another at using technological resources for curriculum-making.

Description as a Phenomenological Goal

Certain types of phenomenology articulate the search for essence as the most important aspect of the study. Giorgi (2008) argued for a more essentialist approach where at least three participants are studied and the goal is to look for commonalities across the three individuals. By contrast, researchers like Finlay (2008) are more focused on ideographic description of specific individuals rather than looking for essence as a theme.

As a balance between the two potential goals for a phenomenological study, Halling (2008) suggested that researchers could look ideographically at individuals to identify; not essences, but general structures, within a phenomenon among the individual participants. These general structures might be proposed for consideration in other circumstances, but there they are not regarded as essences in the same way that conclusions based on direct thematic treatment are. Achieving this balance calls for researchers to move back and forth between individual experience and abstraction. In so doing, a researcher carefully balances description with interpretation in research accounts.

In this study, I reviewed literature and developed my conceptual framework, but when I collected data, I focused on asking general questions and left it open to the teachers as to whatever else they might share with me. After gathering these data, I engaged in an analytic process that had openness built into it (Gilligan, Spencer, Weinberg, & Bertsch, 2003) and was designed for listening to individuals, rather than looking for essences across cases. When I went to craft accounts of what I learned, I presented these around my research questions, rather than as successive individual accounts so that general structures would be made visible without formal

thematic essence. Thus, I was attempting to achieve the balance between the experience of the participants with a certain rawness, while also demonstrating that I believed these experiences have interpretive meaning and abstract value with the potential to inform thinking about teaching and teacher education.

Subjectivity in the Phenomenological Attitude

Many phenomenologists agree that conducting this kind of work requires an attitude of openness to the experience of the phenomenon under research (Finlay, 2008). Discord arises when considering *how* open and at *which* points in the research. Van Manen (1990), who discussed the need for phenomenological researchers to *bracket,* or set aside pre-existing ideas about a phenomenon, represents one perspective. This was difficult for me since coming to understand my topic well enough to know that I wanted to study it from a phenomenological perspective required me to read extensive formal literature about English language arts (ELA) teaching and technology. In addition, I had built a theoretical framework for looking at my phenomenon and in some types of phenomenology, doing so would not have been acceptable because it would have impeded my ability to look purely at the data I was gathering.

Later, I found van Manen's invocation of Husserl (1970) where he explained what he thought was the proper role of those assumptions. Specifically, van Manen wrote, "we try to come to terms with our assumptions, not in order to forget them again, but to hold them deliberately at bay and even to turn this knowledge against itself" (p. 47). As I read, I became skeptical as to whether assumptions can be effectively held at bay during a study, especially one that required substantial amounts of time to design and complete across several months. In continuing to read on the matter, I found that Halling, Leifer, and Rowe (2006) also questioned a phenomenologist's ability to achieve total bracketing. Instead, they proposed that it was

important for researchers to provide enough information so that they and others can deliberate about what aspects of the research are based on the researcher's prior reading, prior experiences, and personal biases, and what the researcher had learned through gathering data to be open to about the phenomenon under study.

As a result of this reading, I did come to agree that there was a certain kind of openness required of phenomenologists. However, I also came to understand that it was not my goal to forget or suspend what I knew from experience and/or from reading, but to listen and watch carefully enough as I collected data to acknowledge new ways to think about and understand both what I brought to the study as assumptions and what I was currently witnessing. I came to agree with the notion from Finlay (2009) that researchers need to bring critical self-awareness of their own subjectivities and be conscious of how these might impact the research process and findings. In this frame, researchers' subjectivities are placed in the foreground. To this end, I included information about myself as a teacher in this dissertation, and I offered extended examples in this chapter of how my subjectivities developed so that I could be more open about why I would embrace a particular set of theories going into this project and why I would engage with particular thinking about curriculum.

Positioning Phenomenology as more Art Than Science

As I have already suggested, since I was collecting data around the experience of curriculum-making and I was taking a more aesthetic view of curriculum, I leaned towards the artistic view of phenomenology. The human world is characterized by feelings, emotions, actions, and purposes (Dilthey 1962). The study of experience I attempted assumed that these feelings, emotions, and purposes would be expressed through languages, beliefs, works of art, and within instructional structures. It is through these expressions that humans can be properly

studied, rather than in the natural science where an object can be measured and studied in and of itself.

In order to enact a study of experience then, van Manen (1990) proposed an orientation that researchers assume in order to conduct phenomenological research:

> From the phenomenological point of view, to do research is to question the way that we experience the world, to want to know the world which we live in as human beings. And since to *know* the world is profoundly to *be* in the world in a certain way, the act of researching—questioning—theorizing is the intentional act of attaching ourselves to the world, to become more fully part of it, or better, to *become* the world. (p. 5)

The inseparable connection that researchers have to the world in which they are researching is termed *intentionality* (p. 5) by van Manen—a term which is borrowed from translations of work from the Czech-born philosopher Husserl (1970). Intentionality as a concept highlights the tie or bond in researching human expressions of experience; research becomes an act of caring to learn another's view and treating the expressions of their experiences as living and important. Because of this caring, phenomenological research begins in a lifeworld that is original, even pre-reflective. I embraced all of these aspects of the Husserlian approach, but stopped short of the ultimate goal of complete essentialization, leaning more toward the ideographic general structures that I described above.

Describing the Participants

Engaging with individuals whose experiences are being studied requires a researcher's willingness to remake oneself in relationship to the phenomenon, but also in one's total character. This total individual reframing is necessary because phenomenology is the study of essences. It asks "What is it like?" in relationship to human experience, which then becomes

"What is it like to *be* ...?" (van Manen, 1990). Although there are three research questions associated with this study, they are smaller parts of the larger question: *What is it like to be an English Language Arts teacher working to make curriculum with technology alongside students in a rural setting?*

This was an endeavor in the human sciences. Therefore, it was expected that each teacher would be different. Therefore, to study the essence of a phenomenon would not be not merely a matter of finding out what is the same across a certain human role or position. Rather, finding or locating the essence of some phenomenon is really about depicting the richness of individual experiences that lead to meaning or understanding. Once some meaning has been reached, it is then the responsibility of the researcher to go back and question that meaning again to uncover, not just what is common to particular phenomenon, but what is *fundamental* (van Manen, 1990). The emergence of fundamental ideas is what triggers new sympathies, new ways to think about what is ethical and moral, and new actions in relationship to other people.

With the idea that phenomenological research seeks fundamental insights into circumstances that will raise awareness of human concerns, it was important for me to consider how data might be *given, granted,* or *gathered.* In addition, I wanted to find participants with whom I felt comfortable asking the questions that would start a dialogue capable of challenging my assumptions about the phenomena I was trying to study. Polkinghorne (2005) offered the following additional insight into participant selection in qualitative research that resonated with me as I sought participants for this study:

> Participants and documents for a qualitative study are not selected because they fulfill the representative requirements of statistical inference but because they can provide substantial contributions to filling out the structure and character of the experience under

investigation. (p. 139)

As I considered potential participants for this inquiry, I generated criteria around the kind of experiences I wanted these teachers to help me understand. I knew that I wanted to study teachers in rural/small town schools because of the ESSA reauthorization and the emphasis laid on ensuring that small communities had greater opportunity to learn with technologies. This interest also comes from the reading I had done about differential digital access in rural/town settings and my own experiences as a student and later classroom teacher in rural schools. I began asking teacher educators at several universities that sent teachers to rural/small towns for recommendations of experienced ELA teachers who were also young enough to have been in schools at the time when Larry Cuban was conducting most of his research in technology (for example, see Cuban, Kirkpatrick & Peck, 2001).

To find and invite teachers into this study, I first looked at the *Why Rural Matters: The Condition of Rural Education in the 50 States* (Johnson, Showalter, Klien, & Lester, 2014) document. This technical report outlines the economic and social issues facing rural communities bear on education in the 50 states. This document relies on information from the National Center of Educational Statistics for a definition or rural/small town areas (Office of Management and Budget (2000). Generally, rural areas and small towns have fewer than 50,000 inhabitants and are 10 or more miles from urban centers and are 5 miles away from urban clusters, which are other groups of towns.

As I perused *Why Rural Matters* (Johnson, Showalter, Klien, & Lester, 2014), I looked for states that tended to fall in the middle of the various educational indicators such as graduation rates, expenditures, and technological access. I wanted states that were in the middle to avoid representing extreme cases; instead I hoped for more typical cases. I made a list of these states

and then I added names of teacher educators that I knew who worked at institutions in these states to my list. I contacted these teacher educators and asked them for names of former teacher candidates who were working as ELA teachers in rural secondary schools. I expected that some teacher educators would not know any teachers, but I actually ended up with a list of 20 names. I looked up these teachers by their school, gave them some brief information about me and what I wanted to learn about, and then asked if they would like to meet with me. Seven teachers responded. From these teachers, I met with six of the teachers and explained more about my interests and let them ask me questions. During this meeting, I told them I was trying to learn about teachers' technology use and we discussed what technology might mean in a classroom. From these six teachers, four eventually agreed to the study: two men and two women from three states in the West and Midwest. Each of these participants taught ELA classes in secondary public schools located in a rural/small town as defined by United States demographic guidelines (cite and reference). In addition, each of these teachers accepted my interest in technology as being largely Internet-based and grounded in the initiatives occurring within their schools. Therefore, we considered that the context would make the definition of technology slightly slippery. The teachers who agreed to participate in this study were Karen, Daniel, Evan, and Molly.

Karen

Karen teaches in a 700-student rural high school in the Intermountain West. The high school is the most prominent building in the area where the next largest building is a church, followed by a fast-food restaurant. The town she lives in has less than 5,000 people. It was originally settled by religious settlers who found the location within easy distance of an important creek for washing, drinking, and agriculture. The town is directly off the freeway and

boasts two fairly famous former residents. One was a famous singer from the last decade and the other was an engineer associated with a famous space travel mission.

There are larger towns and cities within 30 to 45 minutes of Karen, but she lives as a single woman in this small town among her students and her families. She has a large family that lives several hours away and although she describes herself as being close to them, she enjoys having her own life in her community. However, she did note that leaving the state entirely would be difficult because she would miss her family so much.

The year that Karen participated in the study was her fifth year of teaching. Originally she taught in a junior high that was closer to the urban center in her state, but which was still considered rural. She was teaching in the state in which she was born. Her teaching assignments the year that she participated were for ninth and twelfth grade English and Social studies since Karen was also certified to teach history. She was prepared to teach at a large university about an hour from where she teaches and about two hours from where she grew up.

Karen taught in a school that had adopted one-to-one iPads the year that she participated in the study. These iPads were distributed to all students for the first time during that year. Karen was given an iPad the year before and she was working and thinking about how to use this device when I first interviewed her. Her district had a superintendent with a doctoral degree from a university several states away that emphasized innovation and technology development for learning. He was an active participant in this technology—frequently acquiring new things, trying them out, and then being really proactive in offering his support to teachers. Karen's principal was also very supportive of teachers taking up the iPads, and there were district level support staff in her school frequently to help teachers use devices and conceptualize how to make curriculum with them.

Daniel

Daniel teaches in a very large rural high school in the Intermountain West with a population of approximately 2,000 students. The year he participated in this study was his fifth year of teaching. He was originally from a rural state in the northwestern United States, but his family moved to the East coast when he was a teenager because of his father's employment. He liked living in this smaller town, he said, because it was the only thing he knew at the time. But moving to the East Coast brought considerable new opportunities to him.

While I was expecting that he might make talk about adjusting to a new school in a new part of the country, he actually indicated that he made friends fairly easily. He also talked about the stability of his home life, although much of the family schedule revolved around his father's job at a local university. When he was an adolescent, he described having a close-knit friendship group that seemed to all be equally strong academically, although they had different interests and strengths. For example, he had one friend who would spend hours and hours video editing, and Daniel felt confident that he could do the editing; however, he had other pursuits. In fact, Daniel liked to learn and use computers to do so, and he liked to share what he knew both with friends and with strangers.

Daniel was very interested in pursuing graduate work and potentially becoming a teacher educator. He had already built a large social network with other academics in the field and was considering ways that he could learn from his network and also the ways that he might contribute to it—both with new research and with expertise that he had developed while teaching.

The year that Daniel participated in the study, he was assigned to teach ELA classes for sophomores. Some years, he was also assigned to teach juniors. He did not indicate a particular preference for a grade level, but I sensed that he did really enjoy the sophomore readings and

projects that were typical of his school. He was having his students read a variety of novels including, *To Kill a Mockingbird* as well as do other projects. That year, he was particularly interested in how to develop writing models that he thought his students would understand and enjoy. We discussed a number of authors together, and several books about writing instruction were prominently on his desk, along with stacks of student work. In fact, Daniel was surrounded by texts that had been generated by both himself and his students, and his discussion of his assessment practices led me to believe that he would look at his student work, read his books, look back at the work, and then read and think more about what his students were doing when they wrote and what else might help them.

Evan

Evan taught in a small town high school in the Midwest with 1,300 students. This community is considered one the best places to live in the state and will probably not qualify as a rural or small town for much longer. An expressway takes traffic right into a large shopping district with newly built stores. The school where Evan taught was not far from the shopping district and the homes surrounding it were large and generally newly built. In contrast to the other high schools where teachers in this study work, Evan's high school had a stoplight directing traffic in and out of the parking lot and wide streets with turn lanes and street lights. Figure 3 is a photo of this interchange.

Figure 3. Leaving the parking lot of Evan's school.

As a result of amenities like this, Evan's school looked and felt less rural. Evan had taught at this school for seven years. His preparation for teaching was conducted at the large research university close to where he grew up. He was raised in a small rural town of about 6,000 people.

Evan is married and had two small children. The youngest of his children was born only a few weeks before he entered the study. His wife is an elementary teacher and her school is only a few miles from his. During the time of the study, Evan was highly conscious of his family responsibilities. He did not want his wife to have to be alone tending two small children after a full day of teaching. As we talked during interviews, Evan made frequent comparisons between his and his wife's teaching circumstances. In almost all cases, he concluded that he was in a more favorable teaching situation than she was. For example, he remarked that although all the teachers received new laptops during the year of the study, he did not consider them to be very much more advanced than the old laptops that they were using. However, his wife had been

using the same laptop that was an inferior brand for many more years, with no chance of receiving a new one on the horizon.

As I just mentioned, the year that Evan participated in the study, Evan's school provided new laptops to all of the teachers and their old equipment was used to re-stock the student mobile computer labs. Evan's teaching assignments included ELA classes for students in ninth and eleventh grades. Although his school was fairly new, his classroom was small in terms of square feet, and his desks were arranged in clusters of four. I remarked how when I taught school, I always had a few large boys who did not fit in the desks well. Evan agreed. When his classroom had students in it, there was not much room to move about.

Molly

Molly grew up outside of a large metropolitan area in the Midwest and she was teaching in a small town outside of another metropolitan area within several hundred miles of where she grew up. Her school is considered to be a rural one and has 1,500 students. About a quarter of these students are African American students whose families have a long history of living in the area. When I first drove to this town for a visit, I was struck by the fact that I had to exit the freeway and then drive for several miles along a wooded ridge and gentle hills. The road I was on features houses built in the mid-Century that were often surrounded by trees. When I arrived at *the* main street, I was struck by the way in which it jogged in an odd way and how many businesses and the cemetery seemed to be named after one person. Later I read that the road was part of a famous westward trail that had been redrawn several times over the years. The school was not on the main street, but was not too far away.

The year that Molly participated was her fifth year of teaching. Her teaching assignments included high school seniors in the regular high school, and she also worked in a credit recovery program at an alternative high school. Her preparation to teach occurred at a large research institution in the state where she grew up. While all of the participants discussed their personal lives with me to varying degrees, Molly was the least forthcoming. She never revealed anything about her marital status, whether she had children, and she did not share information about her other interests and likes away from teaching although she had a welcoming and gentle personality. During one interview, my four-year-old came in to the room in my house where I was teleconferencing with Molly. Usually when my daughter sees or hears that I am on the phone or teleconferencing with someone, she stays out of view or leaves, unless it is someone she knows. Instead, she came right over to the screen and said hello to Molly. When she saw my daughter, Molly smiled and spent time interacting with her and seemed quite comfortable, even delighted. Then my daughter went away and Molly and I resumed our conversation.

Molly was teaching a school with a new Bring Your Own Device (BYOD) initiative that was supposed to have many of the policy kinks worked out for that year. The students were essentially told that they could bring whatever kind of technological learning device and the teachers would incorporate those into the curriculum. For students who did not have devices of their own to bring, the school had a limited number of devices to loan to students. Most of the students' device of choice was a cellular phone. Although other teachers in this study talked about being less agile with helping students use their cellular phones to learn, Molly seemed entirely comfortable with them and in fact, when she said *device* as we talked, it became apparent that her primary conception of a technological device for learning in her classroom

space, particularly for her regular students, was a cellular phone; even her credit recovery students used them often for learning.

Outlining the Data Sources

In accordance with phenomenological inquiry, this qualitative study relied on multiple data sources (van Manen, 1990). The major sources of data were (1) interviews with the participants, (2) curriculum-making documents, (3) narrative interchanges, and (4) reflective memoranda that I generated while interacting with the participants during the interviews and school visits. Each of these major data sources is discussed in more detail in the sections that follow.

Interviews. Data sources included interviews with the teachers. These interviews were a major source of information for both gathering experiences from the teachers (van Manen, 1990). The interviews were also a major way in which I was able to follow (Seidman, 2012) recommendation to understand participants' past, present, and future. The interviews helped me learn how these teachers came to teaching, how they currently experienced their teaching around technology and what they thought was important for teaching with technology in the future.

In determining that interviews would help me learn about these teachers' experiences with building curriculum with technology from an autobiographical standpoint, I also took up Kvale's (1996) notion that essentially "[t]he interview is the stage upon which knowledge is constructed through interaction of the interview and interviewee roles" (p. 127). The teachers shared substantial portions of their technological narratives and described the ways in which they developed curriculum with the technological resources available in their schools and classrooms.

In giving advice about interviewing, van Manen (1990) suggested that interviewers need not ask an abundance of questions, but rather they should tailor their inquiries to the research

question at hand. In order to anchor my interviews to my research questions, I developed a schedule or protocol of major ideas. However, I also wanted to design an open interview experience for them. These interviews needed to be open so that the participants could share their knowledge and embed stories into their responses. Kvale (1996) described the open interview in the following manner:

> In open interviews people tell stories, narratives, about their lives. In current thought, there is a shift from modern, formalized knowledge systems to narrative knowledge embedded in storytelling (Lyotard, 1984). With a skepticism about global systems of thought, a renarrativization of culture takes place, with truth to be worked out locally in small narrative units and with the collective stories contributing to uphold the narratives of the community (p. 43).

In coming to strike a balance between the organization of a schedule and the elasticity of an open interview, I had to consider the questions very carefully. Building and maintaining this orientation of careful listening during interviews, and even during the entire study, meant that I did not enter the project expecting to find "good" teachers and "bad" teachers. I just wanted to listen to them talk as they integrated their lives with the curriculum they were making with students.

In addition, Stern (2004) has written about the present moment as subjective experience as it occurs, not as it is later reshaped by words. Thus, the process of data collection was not just about capturing what happened in the past, but as learning from the experience of spending time with another person in the present.

As I conceptualized this study and determined what questions I would ask, I developed a schedule with some openness where, "[t]hematically, the questions related to the topic of the

interview, to theoretical conceptions at the root of the investigation, and [that related] to the subsequent analysis" (Kvale, p. 129). Table 2 highlights the questions that I designed for the study.

Table 2

General Overview of Interview Topics and Questions

Place in the interview cycle	Initial question topics	Sample questions
Beginning	Early educational experiences	What types of programs/devices did you use in school?
	Early experiences with technology	What types of programs/devices did you use outside of school?
	Preparing/learning to teach	How did your teacher educators approach preparation to use technology?
	Using technology in learning to teach	
Middle	Using technology as a new teacher	What types of technology did you use during practica/student teaching?
	Using technology in your life outside of teaching	As you were learning to teach, what other technologies were you using/taking up outside of school?

Table 2, cont'd.

End	Timelines of key experiences	What are some important experiences you have had with technology and teaching this year?
	Department configurations	What are some important experiences you have had with technology outside of teaching recently?
	Use of technology as a department/school/district	How do you think technology can help students learn?
	Definitions of technology	What supports you in learning to use technologies to teach?
	Major theories about literacy/learning	How have you been able to support colleagues in their use of technology?
	Supports for the development of professional knowledge, including technology	Tell me about your school's current policies around technology.
	Current policies, including the devices at the forefront of the school's current initiative	

Interviews took place in several formats. One interview format was in-person. I met with all of the participants in person ahead of time with the exception of Molly. Molly and I exchanged in a series of emails regarding questions she had about the study. During these initial meetings, I asked them questions about their teaching and their upbringing, and I tried to determine if these were participants who would be willing to share their curriculum-making with me. It was important to have this time since, according to Polkinghorne (2005):

> [T]he goal of qualitative research is enriching the understanding of an experience; it needs to select fertile exemplars of the experience for study. Such selections are purposeful and sought out; the selection should not be random or left to chance. The concern is not how much data were gathered or from how many sources but whether the

> data that were collected are sufficiently rich to bring refinement and clarity to understanding an experience. (p. 140).

The initial meeting was for the purpose of consenting the teachers that met the study inclusion criteria. Interviews were scheduled and conducted via Skype and/or Google Hangout, depending on the teacher's preference. I conducted two or three interviews in this manner with all of the teachers. These interviews were recorded and transcribed and shared with the participants in order to allow them space for reflection about what they had reported (Schappe, 2015).

When the data collection phase had drawn to a close and I was working on forming the data into accounts of the participants' experiences that shed light on my research questions, I scheduled in-person interviews with the participants where I visited them at their schools. During this meeting, I showed the teachers their transcribed interviews (?) and asked them for additional comments and clarifications. These meetings were also recorded and transcribed.

I took photographs of each teacher's surroundings and took notes to help me contextualize the settings in which these teachers worked. Figure 4 is an image of a farm right behind David's school. While I was visiting these places I ate in restaurants, visited local stores, bought fuel, and held informal conversations. As I looked around and spoke with people, I sought a sense of place for these areas. All fit within the technical parameters of rural/small town settings, but I wanted to be able to visualize what it might be like to live and teach there. The teachers told me stories about students and I wanted to feel like I had been to some of the places they had.

Figure 4. Behind David's school.

Curriculum-making documents. Other written documents included assignment descriptions, assignment models generated for students, and life writing in various forms. In addition, participating teachers provided access to Internet links, applications, blogs, Twitter feeds, and other sources where they and their students engaged in curriculum-making. For example, Karen informed me about her district's Twitter feed, and I signed up to follow them. Daniel also gave me access to his students' responses to To Kill a Mockingbird by Harper Lee. I was able to look at most assignments through Google Tools like their shared drive and screen sharing through Hangout.

These curriculum documents were necessary because they attended directly to the question about curriculum-making as an artifact of these teachers' experiences. Further, they furnished living expressions of teachers' thinking as revealed through what they were willing and able to ask students to make and do. These formed part of the *Geist* (mind, thoughts, feelings, consciousness, emotions, actions, and purposes) (van Manen, 1990) that would enable me to describe the teacher's narrative. I did not consider these artifacts as merely a corroboration

of what the teachers told me in the interviews. Instead, the artifacts offered additional pieces of information where I could construct a fuller, richer account of the teachers' experiences by entering into their life world.

Narrative interchanges. Finally, reflective narrative interchanges were collected where the participants and me told stories about immediate and recent experiences making curriculum that both sustained and challenged their technological narratives. The immediate daily experiences of the teachers also formed part of the *Geist* (van Manen, 1990) which is necessary to describe the experience of another person, because it offered insight into the *What's it like …?* question in the stream of experience, rather than the more retrospective views offered in the interviews. As an example, I have included a portion of a narrative interchange between Karen and me.

> Karen: All of the English department is using Google Drive as a portfolio space. All of the student emails are through Google new this year, you remember, how Nebo's email was through Google. So all the students have access to Google Drive and they create just one document and every time I have them do a new piece of writing, they add it to that portfolio space, oldest to newest so the newest piece of work is at the very top of the page. It also makes it convenient for me to give feedback to them while they are writing and to monitor their progress over time (Google tracks changes) and I can drop a new assignment or discussion question at the top of their portfolio and they can respond to that new direction, all without creating new files for each new piece of work and they just send it to me once. I like it so far. I just have to remember to use it, so that it becomes effective instead of just another hoop to jump through for them (October 7, 2015, 8:20 pm).

> Mary: The need of some of your students to personalize is interesting. It almost feels like a right to some people in this new era whether you can get almost anything personalized. Eventually our devices will be able to sense when we are holding them (versus someone else) and it will fix the settings as soon as you pick it up. That blows my mind, but the technology is already there to do it. It just has to filter to the masses (October 13, 2015, 7:09 am).

During these interchanges I usually told a story about my current teaching or some experience that I had while working with students at a research site. They shared both stories and chronicles of information. When I responded, I was either encouraging or just making commentary. I occasionally asked more questions, but generally since the teachers were sharing their curriculum-making in the moment and I was concerned about them feeling more vulnerable than they were when they shared before the school year began. In the interest of not appearing evaluative, I was careful to make positive comments and tell stories of my own that I thought would be perceived as supportive.

Thus, the narrative interchanges enabled the teachers and I to maintain a strong orientation to each other during the study. Interviewing them and then losing contact with them would have made my attempts to describe their experiences much more difficult. By having this regular contact, I was able to continue to develop my new orientation to my phenomenon, and I was also able to engage in rhythms of engaging with the formal theories as I compiled my literature review, followed by periods of suspension or bracketing (Husserl, 1970) so that I could depict what I was learning.

Researchers' reflective memoranda. Dupré (1993) argues that a "one-directional move toward the future requires a constant reinterpretation of the past" (p. 127). For me, part of that

past was my experience teaching and learning with technology. However, I was also attending to these roles in the present as I engaged with students as a teacher/educator and could anticipate a future where I would continue to research and work with teachers. Grappling with these circumstances required me to dedicate time, spaces and contexts to engage in reflexivity throughout the research. Personal reflexivity requires researchers to recognize their social location as a researcher and well as attend to the ways in which emotional responses to the participants are grounded in personal history. Together, these circumstances shape researchers' interpretations (Doucet & Mauthner, 2008).

In pursuit of reflexivity, I took notes on my computer after any major data collection activity and periodically as I remembered and realized experiences that might have a bearing on the data analysis and interpretation processes. Throughout this research project, I also collected many artifacts and also documented many experiences related to my involvement in technology and teaching as a classroom teacher and a teacher educator. For example, I brought a box of student work with me when I left Utah for Kansas to come to a doctoral program. Part of my work in conducting this study was to go through that box and remember what curriculum I had been making with students and re-experience the emotions of being with them and leaving them to come and do this work. I also re-read some of my previous scholarly work, which entailed looking more closely at the issues of technology, narrative, and curriculum-making in classrooms. Below is an excerpt from my master's thesis (Rice, 2010) that I later discussed in a book based on the thesis (Rice, 2011). The excerpt is a field note where a boy named Alan and I make curriculum with technology.

> I played some music for the class today to show [the students] how to read old poetry with prosody. Alan left class after the bell rang, but then returned with his iPod, wanting

> to use my speakers to play a song by one of his favorite bands. He asked me to listen to the song and then say what I thought it was about. I listened to the entire song and then told him that I had heard the singer in this band talk on television and the radio. Combining the lyrics of this new song with my past experiences seeing or hearing the singer, I told Alan that I sensed that the singer was trying to negotiate being both a rock star and a good man. Alan explained his friendship with some of the relatives of this singer, which made it possible for them to converse on occasion. In those conversations, the singer had talked to Alan about trying to re-introduce religion into his life. Alan and I agreed that it is very challenging to be incredibly famous and incredibly benevolent. Then, he went off to work. (Reconstructed field note, November, 2008 in Rice, 2010, p. 38; Rice, 2011 p. 56)

In the initial activity, I played some rap music and we looked at the lyrics. I wanted to show the students how kenning—a compressed form of metaphor—worked and I wanted to show them that while words in many songs rhyme, when a performer says the words the rhyme is often not the emphasis. I put the lyrics up on a projector screen, I let the students listen to the music, and then they swayed in their seats and came up to the front of the room and "performed" for us. I then showed them the pieces I wanted to draw their attention to and then we practiced finding and unpacking kenning and doing recitations that de-emphasized the rhyme.

In the second activity, *Alan* wanted to play a song for *me*. I was supposed to identify the meaning. Drawing on my background knowledge about this singer and his band, I came to a conclusion that I believed would also support Alan's development since I had also seen and heard him express interest in developing an identity around his masculinity that he could maintain and that could sustain him. The technology supported us by giving us the chance to

share information that was important to us and in so doing, was supportive of our own identities. Notice also that Alan had his own iPod and although I worked in a school where I could have taken it away, I did not. I created a space where Alan could use his device to play a song for me (with my speakers and classroom sound system) and we could negotiate the meaning together. In this way, we also indemnified our relationship. Because we could use the devices for our own purposes, we learned about each other and expressed interest in one another's concerns.

While I was looking at my students' classroom work and re-puzzling over my prior work, I realized that I had this really strong interest in having the students and myself use technology relationally—that we would make curriculum that helped us understand and appreciate each other more. When I realized this, it became obvious why I had been drawn to both a conceptual and an analytic framework that helped me look at how the teachers described the ways in which they came together with students around technologies to build and maintain relationships.

> Miguel: Mrs. Rice and class, we proudly present our retelling of the scene where Tybalt and Mercutio die.
>
> Wei: What you have to realize is that this scene has many postmodern elements. Remember when we learned about this in class? In postmodernity, you question authority and you use the text to disprove its own argument.
>
> Tim: Yes, and you will see all these places in Springville where we filmed this. We were careful not to film any of the business owners in town because they said we could shoot in their café or whatever, but they didn't want to be in the shot. You will also see my mom potentially in the background. She did our make-up.

> Josh: And there is this cool part where the police come and really interrogate us. We thought we were going to be arrested for filming Shakespeare.
>
> Aidan: Okay, okay. Just watch. (Rice, 2012, p. 104).

It should be obvious from this example that I was not thinking about technology as big data; I was thinking about as a way to help students engage with subject matter and as a way to more efficiently develop and display my own. I wrote:

> By now, I know this particular play very well and can quote it extensively for students as introductions to lessons and during discussions. I did not learn the play well so that I could hold my knowledge over the students or even so that I could teach the standards better. I learned the play well so that when the students had ideas about how to interpret the play or plan products, I could support them in carrying through. (Rice, 2012, p. 105)

Returning and re-reading my own writings as a teacher-researcher helped me think through the data analysis process before I began it on a new set of data. It also helped me remember what I thought about technology and teaching as a teacher working under a set of constraints (standards, infrastructure, and other resources). Doing this helped me understand that generating data is a major function of technology use in classrooms. With these ideas in mind, I came to my data ready to analyze.

Chronicling the Data Analysis Process

Phenomenological data analysis is typically done through the use of *hermeneutic circles* (Lavery, 2003). In these circles, individual texts are understood in relationship to other texts as well as an emerging entire text that represents the experience of the participants (Porter & Cohen, 2013). Explained another way, Geertz (1998) wrote that phenomenologists alternatively focus attention on the most local of local details as well as the global—or theoretical structure—

of a phenomenon in ways that both the local and the global can be considered together. Because of the need to look local and global simultaneously, verification strategies were employed throughout the data analysis process (Morse, Barrett, Meyers, Olsen, & Spires, 2002). According to these scholars:

> *Verification* is the process of checking, confirming, making sure, and being certain. In qualitative research, verification refers to the mechanisms used during the process of research to incrementally contribute to ensuring reliability and validity and, thus, the rigor of a study. These mechanisms are woven into every step of the inquiry to construct a solid product by identifying and correcting errors before they are built in to the developing model and before they subvert the analysis. (p. 17)

If the principles of qualitative inquiry are followed, the analysis is self-correcting. In other words, qualitative research is iterative rather than linear, so that a qualitative researcher moves back and forth between design and implementation to ensure congruence among question formulation, literature, recruitment, data collection strategies, and analysis.

Specific strategies employed during this process included methodological coherence, where I continued to check my research against my question and verify that the question I was investigating could be answered using the research strategies that I was employing. In so doing, this also required a check of the participants to make sure that they remained individuals who could answer my question. This was especially important because I received varying amounts and types of data from participants from which I was constructing accounts. As I gathered this data, it was important to return to the data that had been provided, review my reflections on the data thus far, and determine a course of action such as initiating contact with the teachers to offer support and give them opportunities to ask questions.

As this process of moving through iterations around my research question, my strategies, and my questions occurred, thinking with theory was important as my data was held up against my theoretical framework to determine whether and in what ways the theories I had chosen were informing my study. It was actually through this process that I added Spillane's (2002) work to my conceptual framework as I realized that my research questions about policy were not being illuminated by the theories I had currently brought together. As I continued to read and think, I found his work in an article from my supervisor at a research site. Although the original purpose was to consider this work in the context of a different study, I found myself thinking about the ways in which this research informed my own. I found additional articles by these scholars as well as work that they cited. After investigating this work, I wove it into my extant conceptual framework and began reviewing data in light of this additional insight.

In addition to these on-going strategies, there were four phases of data analysis that resulted in accounts for each participant. During phase one, I employed Carol Gilligan's Listening Guide (Gilligan, Spencer, Weinberg, & Bertsch, 2003). Within this guide, there are four different readings of the text. During phase two, I employed Kress' semiotic analysis (Kress, 2011) in order to properly integrate the visual text from the artifacts that I was collecting. In phase three, I engaged in a process of searching for conflicting evidence and examining negative evidence or counter examples of the understandings I thought that I was uncovering. For example, it was easy for me to notice patterns in Karen's data where she felt pressure or uneasiness about using technology with her students. But when I looked for conflicting evidence, I caught the elements of excitement and wonder that she also felt. I realized that when there was tentativeness, it was usually because what she was producing would be more public in the community, such as when she was asked to select the Twitter hashtag for the assembly. The

source of her anxiety was not that she thought people would praise or blame her directly for the hashtag. Rather, it was her amazement with the whole prospect that details of the assembly could be flung into cyberspace and preserved indefinitely and her understanding that a simple, pithy tag would be more effective made it hard to choose. When I understood this, I was careful to represent her experience as one of wonder with moments of trepidation rather than the reverse.

Finally, in phase four, I finalized the accounts and looked across them to develop insights that would have social significance for my phenomenon in the practical, research, and potentially policy realms. I also evaluated potential ways in which I might represent those accounts; I questioned whether I should talk about the teachers separately or altogether. During this time, I wrote pieces using several organization patterns, reconsidered my positioning within the phenomenological worldview, looked back at my theoretical framework, and made decisions, one of which was to discuss my findings in relationship to my research questions, even though that meant carrying the experiences of all the teachers together across the chapter.

Phase one: Carol Gilligan's Listening Guide. To analyze the collected data, I employed two types of data analysis. The first type was a broad view of the stories the teachers told, heard through Carol Gilligan's Listening Guide (Gilligan, Spencer, Weinberg, & Bertsch, 2003) as an analytic method. This analysis enabled me to develop four accounts or profiles—one for each teacher—outlining their general approach to curriculum-making in light of their personal practical technological narrative. Doucet and Mauthner (2008) are two researchers who have used the guide in their work and have offered their own explanations about how to use it in research projects. They wrote that the premise of the Listening Guide is to attend to the question of *what can be known?* They offer this additional commentary:

> Given the deep commitment to understanding, explicating, and improving the lives of women as subjects, it is not surprising that debates about subjectivity have been particularly heated within feminist theory and its many intersections with postmodern and poststructuralist theories. As Diane Elam (1994: 69–70) describes it: "some of the fiercest battles between deconstruction and feminism have been fought over just what role subjectivity should play." (p. 400)

As a response to the pressing arguments around whether a subject can be known and constructed through the eyes of the researcher, the Listening Guide was developed as an emergent method where discourses are viewed as simultaneously enabling and constraining. In order to balance what seems to be an impossible tension, the four readings of a Listening Guide analysis required me to make a return to an "ontological subject" where acknowledging being moves to the forefront of efforts to learn from research participants. This return to the ontological subject involves a turn to narrative where subjects are understood both as narrators and as products of narration. Plummer (1995) provides greater insight into this idea:

> Whatever else a story is, it is not simply the lived life. It speaks all around the life: it provides routes into a life, lays down maps for lives to follow, suggests links between a life and a culture. It may indeed be one of the most important tools we have for understanding lives and the wider cultures they are part of. But it is not the life, which is in principle unknown and unknowable. (p. 168)

It is precisely because of the listening guide's orientation to narrative and lives as they are lived that it made an appropriate analytical framework. My conceptual framework centered on personal practical knowledge of teaching embedded in story (Clandinin & Connelly, 1990; 1999; 2000), the personal myth of self (McAdams, 1993), the struggle to use technology (Cuban,

Kirkpatrick, & Peck, 2001), and understand policies in school contexts (Spillane, Reisner, & Reimer, 2002). The Listening Guide, therefore, allowed me to attend to analyzing the data and developing the accounts while also enabling me to remain appropriately tethered to the pieces of my conceptual framework. For as much strength as this analytical framework holds, its major proponents, Doucet and Mauthner (2008), acknowledge the Guide's limitations, which are grounded in the inescapable reality of subjectivity and subject-positioning within qualitative research:

> As for the issue of whether there is a subject outside of narrative, we suggest that there are "knowing because experiencing subject(s)" and that subjects act with intentionality and agency. Nevertheless, even if we do hold that there are subjects beneath, behind or beyond narrated subjects, we also contend that, as researchers, we cannot come to fully know them. (p. 407)

With this understanding in mind, I undertook the Listening Guide as a way to understand the participants and learn ways to answer the questions that I had about curriculum, professional identities, technologies, and policies. The next sections describe the readings inherent in the Guide and provide insight into how I used them specifically.

The Listening Guide's first reading was a reflective reading of the data as narrative. The words of the narrative are laid out in one frame and my responses as a researcher were captured on the other. The second reading is a tracing of narrated subjects. In this exercise, I traced the use of "I" and "we" in the narrative data and looked for patterns that revealed the teachers' understandings of themselves within their own stories.

The third reading is about relationality. The narratives are read to map social networks and understand their orientations to these networks. The purpose of such a reading is to ground

myself as a researcher in a stance towards the participant as a "self-in-relation." This was critical since I had little evidence about the lives of these teachers in relation with others *except* for what they had told me.

The final reading seeks to understand the structured power relations within the lives of the teachers who participated in this study. During this reading, a conceptual plot focused on the social actors in the narratives and their impact on how the teachers' experienced their curriculum-making. It was important during this reading to remember that the teachers have active life narratives that they constantly retell and reconfigure. Thus, the point of this type of reading is not to achieve a coherent finalized story about the teachers, even though constructing this account has thus far required considerable attention and effort, but to include the living nature of the emerging account as representation of a teachers' life in motion. Kvale (1996) had this insight into data analysis, particularly when interviews are part of the data collection:

> During the analysis the researcher may alternate between being a "narrative finder" – looking for narratives contained in the interviews, and being a "narrative creator"—molding the many different happenings into coherent stories. In both cases the researcher can employ the concepts and tools worked out in the humanities for the analysis of narratives… (p. 201)

A model of the Listening Guide as it was used appears below. I have provided a selection of an interview transcript from Molly in the form of a chart in Table 3 that gives an overview of my key findings as I listened to the data.

Table **3**

Sample of Listening to Molly's Data

Reading #1

The plot in this story is about Molly as a character in a teacher education program. Her goal was to learn more about teaching with technology. The focus is clearly on learning to use devices. Molly thought she was unsuccessful at learning this. Further, she was prevented by her teacher educators who did not take time to do this, even in her "technology" class. She had to learn what she wanted to know as a new teacher. Even without preparation, she was able to overcome this adversity.

Reading #2

"I" and "we" appear in interesting ways. The "we" appears to express the collective will of Molly and her fellow teacher candidates. She also uses it to refer to what happens with her students. The "we" is especially important with reference to devices. The way it is used suggests the devices are shared by her and her students as well as by her and her colleagues. However, she also uses "I" as a way to talk about her use of the device in in specific, as opposed to general, terms. However, it is also interesting that when the device was no longer present, it no longer qualified with "we" but "I."

Mary: What kinds of preparation to you use technology did [your teacher education program] provide at that point?

Molly: I think there was... We did one technology class and it was geared towards finding more kind of online resources and things that you would be able to use within your class, so I know what [inaudible] like skype and we've learned a little bit of Photoshop and some other... Just online...things or available at that time. That's pretty much about it as far as like direct instruction in using technology, other than that. I mean of course we were required in classes to use certain technology whether it was Blackboard or they required a PowerPoint of us, that kind of stuff. But I would say instruction is pretty limited.

Mary: did they use like document cameras?

Molly: No. And that's actually we talked about that … like the students did. Like we expected when we went into the class, I think it was called technology in the classroom. We'd expected to have a little bit of time that was talking about how to use smart boards and document cameras, and those kinds of resources, but we never taught that. That was something that I had to learn in the classroom.

Mary: So do you have a document camera?

Molly: I do. Yeah. We used it quite a bit just because we do a lot of kind

Table 3, cont'd.

Reading #3
The relationship with the teacher educators is one where they were derelict in teaching something that she thought they should have taught. This relational orientation extended to her former teacher candidate colleagues who were also not given what they needed in order to enter schools successfully. Finally, there are relationships with students in the use of "we" in reference to a device such as a document camera. The device allows the teacher and students to all highlight and annotate simultaneously which reifies their relationship. This extends to the other teachers in her building as well.

Reading #4
Molly finds power in knowing how to use devices and in having them. This is evident from her description of her lack of preparation to use devices in her teacher preparation. She never uses a "we" with regard to her teacher educators—only with her peers, her current colleagues, and her students. There is also power in having a lot of devices, potentially because it helps initiates the relationship with the students and maybe even brings status among the other teachers in her building.

annotating and stuff like that. So it's really easy to just put the document under there and be able to get kids to come up then like their own annotations there.
Mary: Yeah. And what other kinds of stuff do you have in your classroom then? Do you have a projector? Do you have...
Molly: We have a built in projector that came from the ceilings, so we kind of attached to our computer which I would use. I use it on pretty much to daily basis. I use it to project our daily agenda and things like that. We... Each classroom has a Smart Board which sometimes I'm guilty of just using it as projector screen. [laughter] but I used of some the highlighting and things like that that are available on their devices. What else do we have? There's speakers, that's about it. When I taught reading for a couple of years, I'm reading support class and we had two class of laptops that we could use of the students. But I don't have those anymore, so...

Reading the data in this way helped me to attend to the parts of my theoretical framework. In listening for plot, I was able to revisit my interest in personal practical knowledge of teaching as a story. Listening for "we" and "I," I was able to hear personal myths of self in the classroom. While listening for relationships, I was able to understand technology integration as not just a personal struggle, but as a relational one. When listening for the distribution of social power, I was able to understand technology integration as learning. Molly wanted to learn how to use technology. When she had access to tools she understood and knew how to use, she was able to

make curriculum with students that fit within her technological narrative around devices as having power, and a person myth when she can overcome obstacles such as lack of opportunity and lack of access in order to provide curriculum-making experiences in her classroom.

Phase two: Kress' Social Semiotic approach to discourse analysis. While interviews were an important part of the data collection, ultimately, "the medium of the interview is language and the knowledge produced is linguistic" (Kvale, 1996, p. 43). The data that I was constructing into accounts was both linguistic and visual. It was therefore necessary to build in an analysis where I could consider and learn from the visual data that I was collecting. In order to integrate the visual material, I used Kress' (2013) Social Semiotic Analysis, supplemented by some ideas about critical discourse analysis in qualitative work from Rogers (2013).

The second type of analysis focused on integrating the visual material with the linguistic material. For this part of the analysis, it was critical to identify particular units for critical analysis (Rogers, 2013). In this type of integration, a *text* was able to fully emerge. Kress (2011) offered a definition of text as being "socially made with culturally available resources that realize the interests of their makers" (p. 207). The texts that the teachers created constituted one layer or level of text. The texts as they shared them formed another layer. Then, when I analyzed the texts I created another layer still, with each layer utilizing new social interactions, cultural resources, and interests.

A multimodal social semiotic approach provided a place to engage in meaning making with the data because of its attention to shapes of knowledge, social relationships, pedagogy, and identities. Making signs changes the resources of an individual and therefore changes who they think they are and how others perceive them. Kress (2011) explained that there are two aspects to this analysis: "*multimodality* focuses on material *means* for representation, the *resources* for

making text; that is on *modes*" (p. 208). In addition, the "*social semiotic* frame provides a theoretical frame for focusing on *meaning-making*—the agents who make signs" (p. 208).

Rogers (2013) suggests that discourse analysis in reports of qualitative research should not merely address *what* was analyzed, but also how. To this end, I have constructed a model of the integration of the visual with the linguistic text appears, which below as Figure 5. I will use a portion of what I have already shared from Molly and then build on it with this figure. Her students made it using Padlet, a software application that enables users to post in a common space. Molly indicated that her students were writing "six-word autobiographies," which is a popular language arts activity. The students whose work is seen in this example are seniors in high school in her credit recovery class. This class has a mix of White and Black students. The students read several models and then put their own responses on Padlet. Molly also indicated that she selected the background. It is green and looks like streams of computer code.

Figure 5. Padlet screen of Molly's students' six word autobiographies.

Looking at a product like this, it is easy to see how difficult it would be to employ the Listening Guide (Doucet & Mauthner, 2008). There are multiple plots, characters, and narrators that did

not intend for their work to be read in concert. There are few pronouns to "read" and interpret. There are few clues about relationships among the creators, particularly in regards to power, although it can be inferred that none of these students would have posted on this Padlet without urging—or assignment—from their teacher. It appears that one student had a job as a telephone answerer and a "silly waitress," who suggested that an orientation to food service employees was uninformed, cut their career short.

Turning to semiotics, however, allows for more interpretation. The juxtaposition of the vignettes is interesting, with the story of the deceased grandmother placed at the bottom, under another students' textbox, suggesting burial. In fact, all three stories with melancholy themes around loss and separation are at the bottom. The story of "the hill" and "vacation" is placed at the top of the screen; this makes sense since it is so much more hopeful. The most separated biography is "of clay and sugar." Its placement at the bottom with a gradual trend of descending one-word lines suggests this was a low point. This is also the story directly below "my vacation." The contrast between visiting place for leisure and moving there is striking.

There is also visual interest created in the contrast between the red and green. These colors are opposite on the color wheel and they create visual interest. Of all the backgrounds that are possible with Padlet, Molly and her students chose this background with these colors. This calls into question why they did not choose a background that suggests a journey or a softer color palette. Instead there is a matrix of code. Such is the case with these students' lives. After all, these autobiographies are far from comprehensive. They are episodes in what are relatively short teenaged lives, forms of micro-expression that draw their power from being provocative. One cannot help but wonder "who are these students?" "How are they with one another?" "Why are they in credit recovery for English?"

Bringing the Padlet assignment together with what Molly said during her interview is where interesting analysis took place. The students in her school bring their own device but through Padlet, they share projected space and create the "we" that Molly liked to reference. It also easier to see how important projection is to her—why she would want to learn how to use a document camera. The assignment of a six-word biography is a low-tech product. Further, the poems could have been displayed on a white board or on colored construction paper as a collaborative work, but the experience was rendered differently because of the Internet technologies used. The teacher used the device in tandem with students' devices and the same program to share what they have created in real time. This was not just words projected, it was a technologically-mediated aesthetic experience. No wonder it is disconcerting to lose devices. When teachers lose them, they also lose the ability to create a space for the "we"—the space for curriculum-making alongside the students.

It was analysis patterns like I have just demonstrated that governed my interpretation of my data. It was important to lay the linguistic as well as the visual data alongside one another in order to form understandings about the teachers' curriculum. The next step after the analysis was to locate and consider negative cases and examples.

Phase three: Searching for counter evidence and examining negative cases. In phase three of my analysis, I used negative case analysis to search for contradictory evidence to the understandings I thought I was developing and to review my learning (Williams, 2011; 2013). This was an especially helpful exercise in developing Evan's account. He was particularly insistent about the lack of resources he had in his school and the ways in which he experienced pressure to use technology, whether it was helpful or not. The other teachers were more sanguine in how they talked with me about their lives and work.

One might have been tempted to develop Evan's perspective as resistant, but because I was using Spillane's (2000) work about learning, and because I was working to listen through four readings, I concentrated my efforts on interpreting what Evan was doing as learning policies. However, at the end of the initial stages of interpretation, I had to go back and see if maybe for him, my conceptual and analytic frameworks were going to lead me astray. I re-read the data looking for evidence of resistance, I talked to Evan again, and I looked at the accounts I was making for the other teachers. In the end, I saw in my data the accounts that I developed in more nuanced ways. Initial impressions were refined, research conclusions were modified, and multiple attempts were made to account for all the data.

Phase four: Finalizing the accounts and looking across them. The use of the word *data* is controversial in some circles of qualitative research (Polkinghorne, 2005). In my report of this dissertation project, I referred to the items I collected and analyzed as data. But after the analysis process, I refer to the resultant texts outlining the experiences as *accounts* (van Manen, 1990). I did this in order to help readers understand what I am drawing from when I speak about the findings and to help me make a distinction along the way of what my goal was for analysis. To reiterate, I use both terms *data* and *accounts* in this work, but *accounts* is what I am referring to when I talk about the organized set of understandings I developed after analyzing the data.

The process of looking across the accounts required me to develop understandings across accounts. These are showcased as *emblematic narratives* (Mishler, 1990) that captured the major ideas emerged in the accounts with reference to my research questions. The narratives shared across accounts therefore do represent major themes because stories with highly similar plots were repeated across the data, and because these stories offered the kind of detail that enhances the trustworthiness of the findings.

Summarizing the Methods for this Study

During the course of this study, three types of threads emerged from the data. These threads were parallel, intersecting, and conflicting. The organization and depiction of these threads are reported in this document to honor the mythmaking of each individual participating teacher as well as consider what might be emblematic when all the threads from all the teachers are viewed as part of a larger tapestry.

In this chapter, I discussed the methodology I employed during this study, which included reiterations and references to my theoretical framework. In addition, I offered information about my participants, outlined my method of data collection strategies, explained my analytical framework as well as how it related to my larger theoretical framework, and demonstrated methods for analyzing the interview data. Specifically, I demonstrated how I analyzed the data using key excerpts and nuclear episodes. I also described the way in which I integrated multimodal texts as forms of data into my analysis. Finally, I returned to issues of subjectivity as I described and modeled the way in which reflective memoranda and other personal responses shaped my analysis.

In the next chapter, I present the accounts I developed during the analysis and then I bring them together. In the last chapter of this dissertation, I provide a discussion about the social implications for what I learned during this project about teachers' technological narratives, and curriculum-making in schools with various technological initiatives.

CHAPTER 4

FINDINGS

> "[W]hen you enter a school in the morning, you carry with you pieces of your life…you never come in an isolated way; you always come with pieces of the world attached to you (Malaguzzi, 1994, p. 53).

In this chapter, I present what I learned from the participants' accounts of curriculum-making through the lens of their technological narratives—pieces of their lives that they bring to the classroom world. I begin with my first research question: what are the technological narratives of these ELA teachers? Then, I use excerpts from my data in order to build on the biographical information I provided in chapter three. I present these data for each participant as key excerpts, explanations of nuclear episodes and when applicable, words or visual images. As mentioned in chapter three, I present their accounts participant-by-participant, rather than in themes. What I share in each of these accounts is based on my interpretation of the main idea embodied in the section of transcript data, comprising the key excerpt for the individual participant. When helpful, I provide commentary that emphasizes the main ideas of the passages as well as information related to the school, state, or federal policy context.

The second section of this chapter answers my second research question: how do these teachers frame curricular responses to their technological narratives? I use similar methods to share data and explain them. The third section offers information about my third and final research question: how do these teachers demonstrate policy learning through curriculum-making with technology? Finally, I preview chapter five, which is a discussion of the findings I present in chapter four.

What are the technological narratives?

In chapter one, I explained a technological narrative. I explained that I developed the term *technological narrative*. This narrative describes the way in which national, state, and local policies around technology are perceived and enacted in a teaching context by a particular teacher. I decided that I would refer to this as a narrative because it is conceptualized as a story that is part of a teachers' entire identity. This identity is situated in fundamental understandings that emerged as part of a teachers' life experiences occurring both before and after certifying to teach and taking a teaching position. The focus on experience both outside and inside a classroom makes the narrative personal *and* practical in accordance with Clandinin's (1985) notion of personal practical knowledge in teaching.

These technological narratives were collected as nuclear episodes (McAdams, 1993) through interviews and supplemented with visual texts and other documents. I present the technological narratives of the teachers who participated in my study in the following order: Karen, Daniel, Evan, and Molly. I chose this order because it is the order in which they came into the study. As far as I am concerned, none of these narratives is any more legitimate than any other.

Karen

Remember that Karen works in a 400-student high school in rural Intermountain West. She teaches English and history. When I invited her into the study, she seemed excited, and I always experienced her as helpful and lively. In our early interviews, we talked extensively about her technology use as a young person. She had some recollection of using simple computing machines in elementary school and some experience with actual computers. Her first nuclear episodes revolved around signing up for her first email account and obtaining a cellular phone.

She narrated a trail from email to cell phone to social media on her own that ended (for that moment) in learning to use Twitter, a popular microblogging platform, as a teacher:

> Karen: So we have email in junior high and then I remember getting my first cellphone in high school. I liked texting, but it wasn't unlimited like paper. So I remember that. And like Facebook in 2007 and then that being a big part of like college. When I got to [my present school] one of the first things that my principal talked to us about was using Twitter for professional development.
>
> Mary: Aha.
>
> Karen: And so I had heard of Twitter but I never actually used it at all. And so he had all the teachers sign up for an account. And so I've had this and I learned how to use it. And I love it now. But it's been really interesting since that faculty meeting to see which teachers use it and how they use it. (Interview with Karen, June 23, 2016)

Her descriptions of her technology use indicate some trepidation initially, but usually followed by excitement. In talking about email for instance, she indicated that she was enthusiastic about it, but she was unsure of what she could do with it other than receive messages from friends. Nevertheless, Karen persisted in learning to use all of these "exciting tools" as she would describe them, including eventually Twitter.

In continuing to talk about Twitter, Karen mentioned that she became so interested in the site that she asked for permission to Tweet a school assembly and was given permission. However, thinking of the hashtag for the assembly turned out to be a daunting task. She described naming the tag as "pressure," and eventually she just used the school's regular hashtag in order to Tweet the event.

In addition to Twitter, Karen carried her narrative of exploration into other areas of her teaching. In this next section, she discusses ThingLink, a tool that allows teachers to upload images and then embed links and additional images onto the original image, a process that resembles a corkboard with a large image and then additional items pegged or pinned to it:

> ThingLink used to be blocked on the student filter and when I asked to have it allowed, they said it couldn't because of its use of images. However, I just checked and students can totally access it on their iPads and there is an app and I am going to use it for an assignment. Cross your fingers! I really wanted to use this was a couple of years ago and now I finally can try it. Basically what it does is allows students to create interactive images. They can imbed other images, links, text, video and sound into the image and I wanted to use it for a research project. (Email narrative exchange with Karen, November 4, 2015)

Karen's enthusiasm for what she is doing comes across really clearly in her description. Notice her process of gathering information about whether she could access it, finding out whether the students could use it on their devices, and then thinking about how it would work for an assignment she wanted to do. While it is true that she had the assignment in her head already, she only recently became able to use ThingLink, which necessitated some re-imagining. In later data, I was able to see that her students did indeed use ThingLink to embed links, text, video, and sound together, and Karen was trying to think of more things for which she could use it. While her data was not universally positive, sometimes there were setbacks and frustrations during her youth and as she entered teaching. The account that emerged for Karen was rife with examples of exploration, creativity, and imagination.

Karen said that she wanted to become a teacher because she enjoyed her history teachers' lectures. Learning to teach included a process of identifying that most students do not learn well from lectures, especially as the primary teaching strategy. She shared artifacts, such as this article about making power points more interesting (Figure 6).

In the 1970s, my mother, a fifth-grade teacher, would lament, "The TV remote has ruined my classroom! I can almost *feel* the kids trying to point a clicker at me to change the channel!" Little did she know that college students today don't need to wish for a remote control to switch from their professor to entertainment—an endless assortment of distractions are all on their smart phones.

Figure 6. Introduction to Karen's PowerPoint article.

When Karen sent this article to me, she included an explanation about how she had been training herself not to use them and trying to help her students learn to use them sparingly as well. In the image, there are two students looking at what is probably a teacher with an outstretched hand. The teacher is in focus, but the learners are not. This image matched Karen's description of herself as she tried initially to learn to lecture—that it did not allow her to have the types of close experiences with students she came to value. While she could have used technologies to learn to be a better lecturer, instead she chose to use technologies to avoid lecturing—to give power over devices and programs back to students.

Daniel

In contrast to Karen's small student body, Daniel works in a school with about 2,000 students, which does not fit the typical conception of a rural school. The large number of

students in this school comes from the fact that students are drawn from a large catchment area and the average family size in the community is larger. When I visited Daniel's school, I noticed that the student body was very orderly as they moved through the halls, and it was curious to me that few of his students were using cellular phones. When they were, they were using headphones, which suggested that music listening was more likely an activity than communication. Although Daniel teaches at a high school where students are allowed to have and use their phones and other devices, Daniel discussed his students' wide range of engagement with technology. He attributed the low use of technology in his school as a reflection of the fact that the high school drew from a large geographic area and several levels of socioeconomic strata. Daniel also reminded me that a government entity was the major employer in the community. The nature of this type of government work meant that many students moved often, and that they grew up in home environments that were highly structured in order to make family life viable.

In contrast to Karen's narratives of technology as tools for exploration, especially disciplined exploration, Daniel's account emerged as one where technology was entertainment:

> Daniel: I guess my first grade here would have been either '91 or '92, and then my last year in elementary school would have been '97, I guess. Honestly, other than just going to the computer lab and playing the games on the computer, I don't recall much technology as part of a more beneficial thing, like the typing game, where you can learn how to type and where you spell the word correctly, whatever game you're playing, like there was a rock climbing game [where you spelled words] to get the climber to go up. *Oregon Trail* was really fun; I don't know if that's educational, but it was fun to shoot the bison.

Mary: Yeah, I played *Oregon Trail*, too. So, that was a really fun game. And I was in Oregon, so bonus.

Daniel: I was in Idaho at that time. Man, other than that, *Where in the World is Carmen San Diego?* but that was more just, I guess that was a thinking logical game but it's more of an entertainment thing for me. Other than that, I mean, I don't even know if I used the projector we had to watch movies on it.

Mary: So, when you were playing *Carmen San Diego* and *Oregon Trail* and whatnot, then that was mostly what you did because you got done with your other work?

Daniel: No, we had designated time to go to the computer lab. And so, we would just have, I don't know if it was once a week or twice a week. We had to go to computer lab and then just, "Okay, we're here. Do something on the computer." And so, that's when we would open the *Oregon Trail* and open *Carmen San Diego*. There were other things. I think in first grade we had like this tutor typing or touch typing, and that was kind of an assignment, so to speak. But after that, I think in third, fourth and fifth, I don't recall having assignments in the computer lab. We just walked in, you had like an hour and you would just play whatever game you wanted to.

Daniel was reinforced in his interest in technology for entertainment by his ability to go into a computer lab and use the computer for whatever he wanted to in school when he was young. He described this time factually, with some ambivalence. What was clear was the time on the computers was not intentionally spent engaging in educative activities. However, the time to do what one wanted did afford Daniel a sense of comfort with technology. He felt like he could do what he wanted to do with it, when he needed to do it, and he conveyed a sense that his students should be able to do the same.

Daniel shared other experiences from his youth where collaboration with friends and peers gave him access to emerging technological skills, particularly editing. He actually was able to turn this opportunity to gain knowledge of video editing techniques into a financial windfall:

> I had friends who were really interested and curious about the video editing process; I knew very little about it but I was willing to help and try and participate. And so we actually made some pretty fun videos that I liked a lot, just for various classes and in fact a few of my friends even put together a DVD reel of all the videos we made in high school and we sold them to people in the high school who actually bought them; we sold them for like ten bucks; I don't think many people bought them but there were a few who purchased them. They were fun to make, they were goofy, they were silly, they were entertaining to watch; my friend did a really good job with the editing. So we put them all on DVD and people actually watched them. (Interview with Daniel, June 15, 2015)

The admission that "people actually watched them" is interesting because of the surprise it conveyed that he was able to make something that his peers were interested in enough to purchase. When I asked him about opportunities for his own students to make videos, he indicated that some students do, in fact, make videos, but that doing so is not a major part of his classroom activity. Although this experience was a nuclear one for Daniel, he did not feel a need to replicate it in his teaching directly. Instead, he was very interested in designing activities that promoted the more general notion of freedom that he experienced when he was young, coupled with more strategic integration of content knowledge instruction.

During his teacher preparation, Daniel noted an increase in technology use, but mostly as a series of disconnected activities designed to give him experiences with using certain programs:

> Daniel: We did a lot of typing. We had to pass some other, I'm trying to think what they were, so in the tech lab in [School of Education], we had to pass off an Internet test which was like if you knew how to use Google, and we had to pass off an Excel test, which actually took a little bit of studying, and inquiry from people who knew more about it than I did. There was a PowerPoint one, oh, PowerPoint wasn't used in high school. I'd have a PowerPoint test, which I was already familiar with, but there were intricacies that I didn't know, so I kind of had to review that a little bit. I think there was one more. … No one really emphasized it in my course, they just said, "Oh and by the way, this is something you need to do it shouldn't be that big a deal and it wasn't." I needed a little bit of time to study the Excel test, because I wasn't that competent in Excel, but I knew I would pass it. PowerPoint, lots of typing. I tried to learn how to use a Prezi while I was student teaching, just on my own and after a few hours of messing with that, I thought I could have made like sixteen PowerPoints. So, I did one Prezi just on my own for student teaching, wasn't thrilled with how long it took me and how, I still wasn't very sure what I was doing, so I stopped using that. (Interview with Daniel, June 15, 2015)

Once again, it was evident that choice was an important element of Daniel's technological narrative. He had confidence that if he tried to use software applications, that he would be able to do so and be successful. But when he did not enjoy working with a certain program, such as Prezi, he did not feel compelled to continue to try to use them.

The element of choice was balanced with a sense that writing is an exploratory practice. Daniel invited his students to participate with him and encouraged them to write in collaboration with each other and with him. Figure 7 is a tweeted image with an accompanying invitation to students to talk to him about their work.

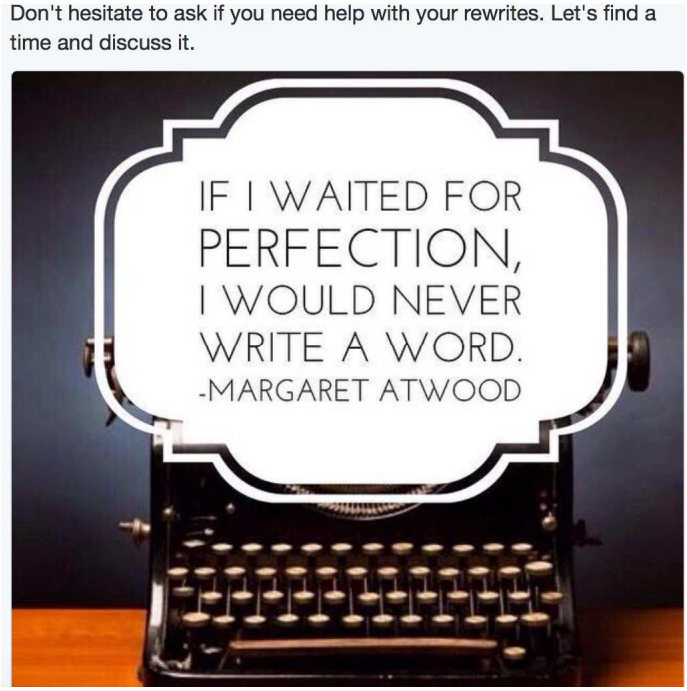

Figure 7. Daniel's tweet to his students.

Interestingly, this is not just any image, but one of a typewriter; a much older technology that that would be unusual for students to utilize. The age of the device, coupled with the text, suggests that in waiting to compose perfection, time will pass. Daniel makes the simultaneous invitation to come to visit him about writing, but also to use technologies to write—as there is danger that both writing skills and writing technologies are always on the verge of becoming outmoded.

Evan

Evan taught in the largest community of any of the other participants. His school actually had several hundred fewer students than Daniel's, but the building itself was massive. According to Evan, the large building and the arrangement of space, such as the placement of the lockers in long rows protruding into the middle of the hallway instead of the traditional place along the

walls, made it difficult to navigate. Efficiency was a key element of Evan's technological narrative, who did not have a computer in his home until he was well into junior high. What they did have in his home was a video game system, brought into the home by his father, who liked to play after work. During one interview, Evan mentioned that even after there was a computer at home, the gaming system was preferred because it was easier to use—there was not as many options and therefore there was less to learn to do.

As a teacher, Evan had many frustrations with trying to use technology. It was troubling to him that technology was supposed to save him time and work, but often it created more work both for him and others. He described one particularly frustrating experience with giving a computer-based reading assessment that required him to also manage an add-on program that was supposed to ensure that students were not able to leave the reading assessment site. According to Evan, ensuring that students had to remain on the assessment site was important to the testing administrators. When students are able to navigate to other sites, they may engage in cheating behavior. Moreover, it is important for the students to sustain attention to the assessment task, rather than leaving and returning in order to protect the validity of the test:

> Recently, we were asked to administer the MAP Reading Assessment to our freshman English students. This is something we do every semester with the freshmen. However, this was the first time we were supposed to use the NWEA Lockdown Browser. Thus, our system for administering the assessment was completely new to us. I happened to be one of the lucky ones to use the program with my Blue 1 class before anyone else. I was somewhat nervous because of that. My fears were confirmed when we were not able to use the new browser during Blue 1. Two administrators, a colleague, and I were unable to get the students logged in to take the assessment with our original laptops, so we had to

> switch to new laptops after about forty minutes of trying. Throughout the next two weeks, many other math and English teachers had difficulties with the browsers. This made me wonder why sometimes we as a society "update" technology only to have it work less efficiently (Narrative Exchange with Evan, September 30, 2015).

Evan was suspicious of technology as something that might be pushed into schools just to have it, rather than something that might help teachers and students engage in curriculum-making together. Since he had this concern, Evan conveyed a focus on the curricular utility of what came into his classroom, and he was careful to use whatever he had. For example, when I visited him, he had a DVD player. This was not so surprising because so did Karen and Daniel. What was different was that his player was in a place on his desk where he could access it easily. I found out this was because he used it often. In fact, there were few extra items in his classroom at all, except for a CD player that he said he brought in when he started teaching to listen to the radio after school. However, he had since discovered Internet radio applications like Pandora and more recently, Spotify, for listening to music.

Evan's preference for the basic and uncomplicated was evident in a description he gave of professional development in which he participated:

> Lately, a few other English teachers have been experimenting with evaluating students' writing in real time. While students are typing essays in class on Google Docs, the teacher (on his or her own computer) looks at what the student is doing live and writes comments. Before doing this, the teacher has to walk students through the steps of allowing the teacher access to that Doc. This was a process we learned about during a PD last year with guest speaker who is a Google certified teacher.

> This process [of becoming Google certified] sounded overwhelming to me because it seemed like it would be a great deal of work for no extra instructional benefit and that it would take longer than just walking around and looking at students' computer screens and making comments verbally. Sure enough, that's what most of the teachers said who ended up experimenting with this technique. Technology should make life easier; it shouldn't just be a gimmick or hook in order for us to get our students' attention or impress them (Narrative Exchange with Evan, December 1, 2015).

In this description, Evan makes clear that performing teaching or instructional duties with technology that could be done as easy or easier without it made more sense to him. As evidence of the validity of his concern, he told stories of colleagues that agreed with him. They corroborated his perception that giving students feedback verbally while supervising them properly was preferable to trying to manage student work by making comments through a technology-based program.

Molly

Molly's school had the most diverse racial, ethnic, and linguistic composition of any of the teachers who participated in this study. The town was sectioned off to be incorporated and the land sold, which was common during the mid-1800s, but there was some confusion in the local government, and by the time it was sorted out, a number of families who were left out of official land auction opportunities had settled. Molly had two teaching responsibilities in that she taught at a regular high school during the day and in a credit recovery program in the evening. She said that it was actually easier to use technology with these evening students than with the students in her school, which had a Bring Your Own Device (BYOD) policy. It was easier, she said, because the class met in a lab where she could be assured that all students had a device. She

grew up several hundred miles away from the school where she taught, in a suburb of a large Midwestern town, and was used to having access to the devices that she needed to do the work she wanted both in and outside of school. She also had a social network that allowed her to access devices within her circle of friends:

> Mary: If you had to print something and you couldn't print it at home, how did you get to where you can print it? Did you save it on a disk? Did you print it at a neighbor's house?
>
> Molly: For a while I printed. I would like email it to a friend; he would print it out for me because I couldn't access my email at school. But then eventually, I could just print it off right away [at school] and I didn't have to worry about it.
>
> Mary: Did you ever print stuff for other people?
>
> Molly: Once I had a printer for sure. [laughter]
>
> Mary: [laughter] So people would email you and be like "print this for me?"
>
> Molly: Yeah.
>
> Mary: That's interesting. Were they your neighbors or just friends?
>
> Molly: Just friends like friends that I would meet up with before school, so I could do it and they wouldn't have to freak out about getting it. (Interview with Molly, August 6, 2015)

Molly mentioned she felt it was difficult to relate to her students that do not have access to technology or the skill set to use such technology given she had never experienced those limitations growing-up. A major part of her process of learning to teach revolved around learning to think about and respond to these issues.

All of the teachers in this study mentioned that they had typing training during early adolescence. This training was considered unpleasant, but valuable for their future work as

teachers and as adults. Molly provided a particularly illustrative description of learning to type. She was particularly introspective about the way in which she used typing as a part of her professional life as a teacher and as an adult in a technology-enabled society. Nevertheless, learning to type was not a particularly engaging process, according to Molly:

> Molly: In the sixth grade we had a computer applications class, which was just straight typing. And we learned how to type for six months. So after we had that class, we would be expecting a lot more typing in the class.
>
> Mary: Did people learn to type in six months generally?
>
> Molly: I assume so. I'm always amazed like everyone in my generation really knows how to type really well and can type pretty fast and they were, at least my teacher was really strict about how we followed the program then we were not allowed to look at our hands and sit up straight and all of that.
>
> Mary: Yeah, 30-35 words a minute at least.
>
> Molly: Yeah, enough that you can function and be able to type your academic papers and perform most jobs that will require you to use a computer.
>
> Mary: So you have high school students, do you have lots of them that don't know how to type?
>
> Molly: Yes, lots of them. (Interview with Molly, August 6, 2015)

Molly went on to describe keyboarding as being the most important technological skill that she had—that when she leaned on her typing ability in order to achieve most of her personal and professional goals. For instance, as she set goals for her professional development, she took courses at the local university that required her to type papers. She also types to communicate with students and their families. To Molly, knowing how to type fairly quickly has been an

indispensable skill inherent in adult life. She expressed that she was concerned about the fact that many of her students were unable to type efficiently and that might inhibit their career opportunities as adults. To her, it was not always even about whether they had a computer, cellular phone, or other device; it was about whether they could use it to solve complex problems, use common software applications, and generally meet their personal needs:

> Molly: I would say the majority [of] my students have computers at home. Almost all of them have cellphones obviously and some kind of game system. It's just the ability especially with like my freshmen students. The ability to use that technology for academic uses is pretty limited. Like we will have to the first paper we write, go over how to use Microsoft Word, like "here's how you put header in, here's how you put double space," those kinds of things that I assume that they would know at that level, that was actually taught.
>
> Mary: When did you learn that stuff?
>
> Molly: I learned that stuff in sixth grade in our computer class. I know our students have the computer applications class in the middle school and they learned that stuff and for some reason… I don't think we ask them to apply it enough, and so it kind of, you know if you don't use something you're taught it goes away. So they have forgotten by the time they get up to us.
>
> Mary: Yeah. Did your parents type a lot of things at home and used Microsoft Word and stuff?
>
> Molly: My mother definitely did. She was going taking college classes while I was in high school, so that's why we got the computer in the first place so that she can do that kind of stuff.

(Interview with Molly August 6, 2015)

These courses where using technology was the primary focus were very important to Molly. In fact, she was expecting this orientation when she went to become a teacher. I mentioned in chapter three that Molly was disappointed that she did not receive more explicit instruction regarding how and when to use specific devices during her preparation to teach. Instead, she felt that technology/technological skills were developed through pastoral experience. In other words, technological learning takes place by wandering around and encountering various obstacles and somehow figuring it out. Even learning to type had trappings of this narrative. She described sitting in a class developing assignments that required typing rather than receiving any actual typing instruction. In later sections of this chapter, I will share more about this learning about technology in this way, particularly in regards to how her students participate in this learning with her and manifest other strengths in using technological resources to make curriculum, when they have access to the technology.

How do these teachers use their technological narratives to frame curricular responses?

This research question emerged out of an interest in how teachers describe bringing together, remixing, revisiting, translating, and transforming the literacies present in their technological narratives into curriculum within their classroom spaces. These descriptions were needed since so much of the work in digital learning environments highlighted in chapter two involves perceptions of minimizations/elimination of teacher presence in the learning process in the push towards instructional delivery efficiency. The teachers' description of their curriculum-making, in light of their narratives, is again presented in the order in which the participants joined the study, beginning with Karen.

Karen

Karen has a technological narrative built around curiosity, intrigue, and even excitement about the things that technology can do for her personally and professionally. She enacted this narrative against a personality that I experienced as being generally reserved. In working with Karen, I witnessed moments of giddiness about both technology and curriculum intermixed with moments of apprehension. In these moments of self-doubt or apprehensiveness, she was almost always trying to narrate ways in which she worked to overcome what she perceived as her shortcomings in understanding technologies. Her curriculum-making was firmly centered on passing on the spirit of possibilities that technology afforded to students:

> Karen: We use [iPads] for research. [The students] can look up things but also use apps that are geared towards whatever we're doing in class. I know one teacher uses them for a poetry unit. There's a poetry memorizing app that they used it for, and Google Docs so they can collaborate on written assignments. We use video for them too, especially in my speech classes, they video themselves giving speeches. That's one way they turn in stuff. (Interview with Karen, June 23, 2015)

Notice how careful one has to read Karen's transcript in order to distinguish what she means by "we." Sometimes she is referring to herself and her students, but other times she is referring to colleagues in her department or school. When she said, "I know one teacher uses them for a poetry unit" she was taking the opportunity to share not just her own curriculum-making but also curriculum that are made elsewhere in her school by other teachers and students. Later in the passage, the "we" refers to her own classes. The goal of this description is not to talk about the iPad (the device) even though she begins by saying the iPads are used. The goal is to share what people in her school do with the device. According to Karen, dives are used to engage with

software applications to enhance instruction by assisting students in educational activities such as memorizing poems or filming themselves as a mode of assessment.

I asked Karen in particular about the assessments using iPads in her school. Specifically, I was interested in how she was making curriculum in response to the fact that her school had become a one-to-one iPad school and she was used to having the students type. She said that she did have to make adjustments that were mostly shifts in her thinking about what constituted a response. When she began teaching responses, especially those that were thoughtful and thorough, she indicated that they needed to be typed. However, as she began to consider more carefully issues of new literacies and she was challenged by the fact that it seemed her school and district were going to adopt iPads, she said she had to make curriculum differently. She had to infuse her activities with options for producing responses that could be shared with her that did not require the students to type.

Videos, like the ones she mentioned in the excerpt above, was one of her options. She said that she liked this option because it enabled students to have more control over what they did. I saw evidence of this interest in co-making curriculum with students in the assignments she gave, such as letting them access their own data and make decisions about learning progress and allowing a tremendous breadth in what they did for projects. In fact, it seemed that Karen had solved the curriculum-making issue of response by allowing her students to contribute to the curriculum. Seniors that year had determined that they did not want to use the iPads for their work and that they preferred that she reserve a computer lab where they could complete their school work. Although she was puzzled as to why her students would not want to use their own devices in school, she reserved the computer lab. Karen reported that her students happily went to the lab to do their work. That experience demonstrated to me the extent to which Karen was

willing to share the curriculum-making with students. The mantra of *any time, any place* is usually made in reference to doing mobile learning in non-traditional places like at home or on a subway. In this case, *any time, any place* meant in a computer lab during the school day.

Using the technology for assessment purposes was a primary goal of Karen's curriculum-making. Curriculum-making was regarded as a shared responsibility with her students. She described her conceptualization of assessment as being an accountable, yet shared, collaborative, endeavor:

> So instead of just one way to do it, you know, you choose which way you preferred and say, "judge me that way." So it's that only something that I want to do because it's utilizing technology in a way that it's authentic to the kids. (Interview with Karen, June 23, 2015)

In this description, "you" and "me" both refer to students. When Karen spoke about her students in interviews, narrative interchanges, and other documents, she usually referred to them with the pronoun "them." In the section where she talked about assessments and giving the students control over assessments, she referred to the students as "you." It was also interesting that she framed assessment systems as way to judge students and that involving the students in the process lent authenticity to the event.

While Karen's work with her students seemed genuinely open to collaboration with them, she also described with real intensity her preference for using the devices for formal learning. This formal learning meant that students should minimize the time they spent personalizing the device and instead focusing on personalizing their learning experience:

> You give the iPads to the kids and they would immediately start personalizing the iPad even when it was like a shared iPad [before the school was one-to-one]. So they can

> navigate it and do all these different things, but then when we are trying to use it for a purpose, they don't understand the greater purpose to it. They just saw it as a plaything, almost. I wish there's a way that I can just sit just and talk with them about literacies and how this is a different type of literacy, but that's just something I think that all kids especially in this generation miss is the idea of why we're using the technology and not just how to use it. (Interview with Karen, June 23, 2015)

Karen also described the way in which her technological narrative interacted with her current desire that the students keep the time they spent changing wallpaper and fonts on the iPads to a minimum. When she signed up for her first email account, for instance, she had no intention that it could be used for educational purposes. It was just something that she was supposed to have that she would use for personal tasks, especially communicating with friends. When she entered the world of social media, she had the same perception; that its use would be for personal purposes. In fact, she was discovering and using these devices outside of school for an extended period of time before she used them inside of school. However, her students were provided devices and programs *by the school.* Therefore, she reasoned, a priority should be placed on using the devices in a professional manner that did not include intense personalization of the display features. Coming to terms with these expectations and implementing a narrative of excitement about what she and her students could do with the technology provided opportunities with which she was working to engage.

Daniel

Daniel's curriculum-making with his students focused heavily on collaboration with them—the same way that he used to enjoy working with his friends to produce videos and other digital products. His interest in technology's power to make ideas publicly visible was part of

what drew him to Twitter as a means to engage students in discussions about text. He discussed the process of obtaining permission to use Twitter, while being denied the ability to use other platforms like Instagram:

> Daniel: I have tweeted a question for them or I will just say, "Hey do you have any observation you have?" where I ask a question and they have to respond to that question or I say, "Who do you most admire and why in this chapter?" And they say why and it lets us have pretty interesting discussions in class and let people who don't normally speak—who I wasn't quite sure were getting it have a fantastic response and explanation. Because the great thing is when we get to class I can say, "Explain more about that, now you can use more than 140 characters to explain" and they will go into detail and I would think that as a phenomenal response and the previously... I don't know, like December or so, September to November I didn't hear anything from that person relatively close to that kind of response. I think it worked out really well and they liked it and it's entertaining. No teacher in my school has ever used Twitter in the classroom, so that is really interesting and fun to take, I guess you [inaudible] you know how to use and use it for educational purpose, they love that and see how it is interesting. I try to get on board with the Instagram thing and other things, my principal wouldn't allow that … he didn't say why and I don't know why because we can upload pictures in Twitter, so I don't know what the deal was with that one. I said, okay, I follow his orders, directions and on occasion I have an upload pictures on Twitter well, not at times, it is more of an optional thing. Some people operating Twitter on a computer they didn't have the option to screenshot, so pictures were always optional.
>
> Mary: Where did you get the idea to use Twitter like that?

> Daniel: The previous year I wanted to use Twitter just kind of a reminder of the high school, just "Hey, your paper is due next class period," "Don't forget x thing," or "We are learning about this, think about whatever…" I also want to use Twitter because they use Twitter, they know how to use Twitter. I thought back about the latest school year where policy and everything was already established and so when I ... It's actually with NTCE conference last year in D.C. and I had the thought kind of populate my mind a little bit, I just went to a few sessions, they talked about technology and how it's used and how they are using it and I just thought, "I've got to get on board with this technology thing." So I was just kind of hearing other people talk, I thing I just took my original idea with few of ideas that I has other people kind of sparked to me. No one actually said, "Hey, this is how I'm using Twitter and you should too." I just kind of had the idea of what I wanted to…a personal desire I suppose. (Interview with Daniel, June 15, 2015)

As I stated in chapter three, I minimized the editing of the transcripts because I wanted to consider things like tense and pronoun use in my analysis. I also knew I wanted to capture their enthusiasm, which was embedded in their speech as rapid tense changes, abrupt switching of topics, and pronoun shifting. To some degree, the shifting may be a mechanism to protect students through securing their anonymity but it is also about the community among the students that was built through the activity. Daniel described the way in which he used online conversations to extend in-class conversations, and particularly to elicit the involvement of students who did not normally participate in class discussions. Figure 8 depicts Daniel's explicit interest in creating these opportunities.

(1/2) "B" day classes: I enjoyed our rich conversations so much this year, and your courage to voice your opinion speaks volumes of you.

Figure 8. Daniel's end of the year tweet to students.

While increasing student participation is an important goal in and of itself, I was also struck by how obvious it was that Daniel really cared about what his students were thinking and reading. In another assignment, Daniel asked his students to respond to literature by using existing or creating new memes, which are visual images that embed timely cultural messages for the purpose of humor and/or satire. Daniel's animation in talking about this assignment matched that of the Twitter discussion. He was highly interested in ways to link what students produced with new literacies via technological resources so that he could promote and support thinking in the more traditional, time-bound space of his classroom.

Also important to Daniel's curriculum-making was building a support network where he could collaborate and think with colleagues from other parts of the country. He was able to build this network by attending the annual meeting of the National Council of Teachers of English. Once again, access to the ideas and perspectives of others was critical to Daniel's interests as a teacher and the support gave him courage to work through access issues with his principal who approved Twitter, but not Instagram, for students. Even though his administrator did not grant permission for everything Daniel wanted, he still felt that his administrator was generally supportive of his interest in learning more about how to develop curriculum by using technology.

This was especially evident as Daniel described the support he received for attending the annual meeting of the National Council of Teachers of English:

> Mary: That's interesting, yes, so how do you get to NCTE? So, why did you decide to go? So, I think most districts won't pay you for that as professional development because it's out of State.
>
> Daniel: Yes, so, I actually, it's kind of interesting story. I'm on the board for the *[State] English Journal* and so I talked with my "superior" as we call her, she is the person I turn to everything that I oversee and say, hey this is what's done, I looked through and I've come through it. I'm good with it, here's what you think kind of. I guess she was the president of the journal last year and as we go started talking and she was, I don't know how it came up and she said, well, I'm taking a group to NCTE to present, you want to go? And I said, yes, of course I like to go and so, she invited me to present. It was a small, a round table, but I told her some of the studies I was doing in my classroom, some kind of experiments and she was like, oh would you consider presenting at a round table and I said, absolutely. So she invited me, I talked to my administration and I said, "hey this is a great opportunity for me to go, can I get a professional leave for this?" and one of the administrators was an English teacher that taught at the high school; she went to NCTE every year and so she had a very special place for NCTE in her heart, so I knew that and so I approached her and said, "Can I do this?" And I told her how excited I was and I was going to be part of the presentation and she was a big time supporter—told me how to apply, so I kind of approached them and just kind of used her guidelines. [My principal] is great with helping teachers out, and he kind of looked at [what I had written] and said, "Yes, let's send you out there." (Interview with Daniel, June 15, 2015)

In Daniel's curriculum-making, his administrator has so much influence on his technology use in the classroom. It is doubtful that this principal would be positioned to be so involved in what novels the students read, or what kind of pen or pencil the students used to write in notebooks, or even whether they wrote on notebooks or had a class discussion to respond to text. Yet, when the curriculum activity was mediated through technology, immediately Daniel needed his administrator to approve what he used. He relied on financial and professional support in order to attend the conferences to learn about things for which he might advocate, which then might be rejected. Karen also engaged often with her administrator around using technology. Karen depicts the principal as proactively trying to coax her and her colleagues to increase their use of technology. In this story from Daniel, his administrator is supportive, but Daniel has to be proactive. Learning those rhythms and routines around what might be supported and to what degree was important to curriculum-making with technology.

Evan

Evan's technological narrative around practicality and efficiency threaded through his curriculum-making in activity design. In fact, he was often designing activities that had some immediate real-world application. Nevertheless, he was sometimes frustrated about the inefficiencies of learning to use technology for himself and his students:

> A week or two ago, junior students were finishing up a project in which they were supposed to choose a law or policy they would like to change and then email their ideas to an elected official. I was surprised that more than a few students didn't seem to understand the concept of carbon copying someone on an email, as they were supposed to CC me on the email they were sending to their officials. In one junior class, we actually

> walked through the steps of carbon copying someone on an email. I also explained where the term carbon copy comes from because many of them had never heard of such a thing. (Narrative exchange with Evan, October 20, 2015)

The academic skill of copying an email seemed second nature to Evan. Indeed, it was a skill that he could not remember learning how to do himself and therefore, it was surprising that some of his students needed additional instruction. The fact that students were supposed to write an elected official and send them an official communication via Internet deserves some attention. Even though the students needed instruction in how to carbon copy, that was mainly for the convenience and efficiency of grading so that Evan could ensure that he could give them a score and make sure that they really sent the message. The email technology enabled him to show his students a relatively easy formal way to connect with someone in the government and voice their concerns. As the students learned to use the carbon copy feature, they demonstrated to Evan that they had completed the assignment and there was a greater potential that they would be able to use the skill in the future.

In this curriculum-making with sending the email to a government official, Evan promoted the notion the literacy, technology, and citizenship go together, although he still had to attend to school routines, and he still had to assess the students somehow. In this assignment, they chose the law and they chose the official, even though Evan had structured the assignment to the point where he took time to do direct instruction on carbon copying. In his vocabulary teaching, similar efficiency—though in the context of choice—was also present:

> Recently, I added a new assessment to the way we do vocab. I've been doing vocab uniquely for the last few years. Students choose their own five words from something that we've read in class and look up various things about those specific words. Then, they

> write down that information on a form. For a few years, I've shared that document online. So, some students do type the assignment, and the others print it off and handwrite it. (Email exchange with Evan, October 1, 2015)

In this case, the students are able to select the text to focus on from what was read in class, choose the words to focus on, and choose the medium they will use to represent their learning. Although Evan has had the ability and interest in having the students use online forms in order to report their vocabulary work, he continues to offer them the option of whether or not to use the device. Karen also shared a similar experience when she talked about how her seniors did not always want to use the iPads. Instead, they were content to use the computer lab, requiring her to leave her classroom. Daniel also attended to this notion of co-curriculum-making and technology as he worked to use Twitter as a way to give students another option for class participation.

Although Evan and the other teachers strove to provide opportunities to use technology as a choice for displaying learning, Evan was the most deliberative about how he had to learn to overcome assumptions about what he could and could not ask students to do with certain devices and programs. For him, this led to a high degree of practical knowledge developed around trouble-shooting by re-envisioning what products could look like. One such example of re-envisioning took place around vocabulary assignments. Evan was working to try to understand the technologies that he had access to and what his students might be able to learn from as he was learning to translate vocabulary assignments into formats that made use of online affordances:

> This year, I decided [to] assess [student assignments] by having them write a paragraph using their words in context. Rather than have them write these paragraphs down on a piece of paper, I had them post them as blogs on Blackboard. This was pretty successful.

But one of the issues was that I had asked them to underline their designated words, and some of the students were not able to do that using the Blackboard apps on their phone. The underline function didn't exist for them. We solved this problem by having students put the words in bracket or parentheses or putting the words in all caps.

Figure 9 shows part of Evan's blog where he made this assignment. The image has been cut off to hide his name and other information about his school and class.

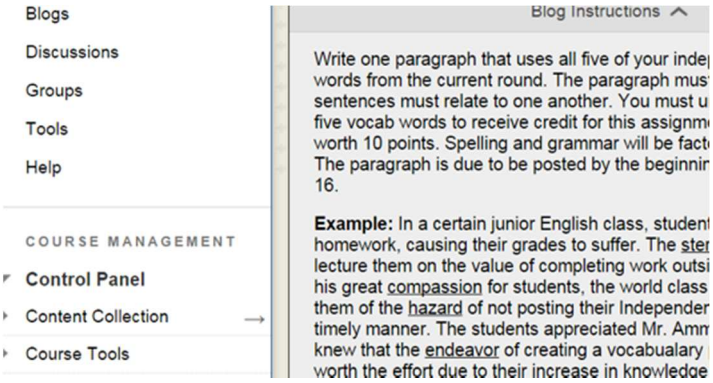

Figure 9. Evan's blog with the assignment and an example.

Notice how the example that Evan uses is an exaggerated example of his students not completing homework and a compassionate teacher who created an assignment with vocabulary to save the day. In this way, Evan invites playfulness into the assignment and reinforces his interest in having a relationship with his students where he has the ability to use the power imbalance in their relationship to make their lives better. The technology should make both their and his experiences easier.

Karen also had mentioned this teacher thinking work in curriculum-making when she talked about having to re-think responses. Instead of having students type responses all the time, she had to plan for them to respond using the technological means, such as video, that were more readily available on her device. In Evan's case, the transition was around what to have the

students do if they could not underline. This seems pretty mundane initially, but actually it reveals the way in which Evan had to engage in teacher learning constantly to reconsider and re-imagine what students might be able to do with the devices and programs to which he had access.

Finally, Evan's interest in efficiency and the practical knowledge that he built around it had relational interests as well. In particular, he spoke often of the size of his school building and the large number of lockers outside his classroom, most of which were assigned to students that were not in any of his classes. Technology actually made interacting with the students more efficient for Evan since he could look up student information in the school's learning management system and develop meaningful interactions with students:

> Previously, I was able to view student information (e.g. course schedule, grades, family information, etc.) for any student who had ever gone to [this school] and for any student currently enrolled that I did not have in my classes. However, this function was removed from all teachers' accounts in late September over concerns of confidentiality.
>
> I used that function for a variety of different things; but mainly, I used it to look up students who were mentioned by other teachers, in my classes, and students who I met in the course my job. This was really beneficial for me because I felt more plugged in with what was happening throughout the school. In the approximately two weeks since they've made this change, I'm continually frustrated that I won't know who these kids are. (Narrative exchange with Evan, October 2, 2015)

Ironically, Evan was using this feature of the management system so he could know students, but technological means were then used to block Evan from looking up students *so that they could not be known*. Surely, it is important to protect student information, but to Evan this ability to

look up student information was so important to his feeling of connectedness to students; it helped sustain him in his assignment to monitor the halls and also in his teaching responsibilities. During a visit to Evan's school at the end of the study, he mentioned that his administrative rights to see student records had been partially restored—he could now see some information about the students, but not everything that he could have previously. Evan was satisfied with this outcome and seemed vastly more content to be able continue efficiently building curriculum around knowing and being known in his school.

Molly

Molly is a teacher in the school with the greatest racial and cultural diversity among her students. She saw the use of technology as a way to promote equity and to restore opportunities for acquiring credit to students who, for a variety of reasons—some likely sociopolitical—were unable to be successful initially. Generally, she said that her students enjoyed using technologies for both personal and school use. Nevertheless, she noted that not all students had equal access outside of school. Cellular phones were the main source of connectivity. A major part of her curriculum-making was encouraging students to use technology to learn. In her school, her students were able to use the technologies they brought, but there was also an abundance of devices and programs provided by the school that teachers used to varying degrees:

> Molly: Some of [my colleagues] I'm sure are incredibly happy not have to deal with the technology, but I also … we do have two teachers in our history department who have gotten grants and have a classroom set up [with] Chromebooks that they get to personally use and so they use a lot of Google classroom and almost all of their work is on the computer and they love it. That's definitely something that I would be understood in doing simply because that's what I do. I teach at night school class, for a credit recovery

and we used Google classroom because we're at the computers and it's wonderful, but I know there are plenty of teachers who would not utilize a one on one device as much as they could.

Mary: Yeah. So this night class is just for kids in your school? Or is that for district wide?

Molly: It's just for kids in our school, they have one at the other high school as well.

Mary: And so you kind of went at it like blended learning then?

Molly: Yeah it really is, just because it meets for three hours, two nights a week and so they're getting six hours of instruction and in class time... in a very condensed amount of time, so we found that if we do a lot of it online and have them utilize the computers for... the same what I would do regularly in our English class, they're just more engaged and they're more motivated to continue with it. (Interview with Molly, September 17, 2015)

Molly's approach to curriculum-making with her students interfaced in interesting ways with aspects of her technological narrative. As she went about her work with credit recovery students, the focus on technology use was only partially about giving students condensed instruction. Molly's curriculum incorporated many visual images that she used for free writing. One of these images appears in Figure 10.

Figure 10. An image Molly used to initiate writing.

In this image a girl with darker skin and dark hair pulled up looks into a mirror. Taped to the mirror are two other images: one image is of a woman with white skin and one is of a man with skin darker than hers. The woman stares reflectively at this reflection, which suggests that she is in the process of identity-making. It opens up opportunities for students to consider their various racial, ethnic, and even gendered backgrounds. When I asked her if the students take up this image for their writing, she said they do, especially alongside another image that appears as Figure 11.

Figure 11. Another image for Molly's students to consider.

This image is of a hyper-masculine man with white skin dressed in a baseball uniform. The only part of his number that can be seen is "1." There is also a dripping needle at the top his locker.

His veins are visible. He chews red gum and looks into a red locker. According to Molly, the sporting, the illegal activity, the violence, and then expression on the player's face creates lots of ideas for her students. They write stories, but they also become curious. Molly could have shown these images using older technologies or displaying posters in her classroom. Instead she chose to pin them to a Padlet and allow students see the images as juxtaposing ideas and potential for stories that complete for their attention. Further, it enables students to quickly find similar images, query associated questions (e.g. who is this artist?), and share the images with peers and friends.

Through my interactions with her, I also learned how important it was for her to use the computers as a way to sustain student engagement during the intense period of time when students come in to work on the computers. There was also a sense that the technology was more engaging because for many students, they did not get to use these technologies during the school day because not every teacher was willing to allow students to complete work using Internet-based technological resources. It is understandable that Molly would have this orientation because after all, she grew up with all of the access she wanted and it was obvious that it bothered her that her students did not enjoy this same access.

The motivational aspect comes to the fore to suggest that disengagement is her theory about why her students needed to come to her for afterschool credit recovery, rather than because they were incapable of doing the work. Molly's curriculum and assignments that she designed were heavily focused on challenging students by providing them opportunities to invest in their identities. This was apparent in the image in chapter three where the students wrote short biographies and also in other assignments. In that description from earlier I showed an image created by Molly's students with Padlet, which is a software application that is typically used as

a response system on iPads and other tablets. Molly showed me several assignments were she used Padlet in her curriculum-making:

> Molly: Here is a narrative writing warm-up assignment where I used to use Padlet to kind of create almost a gallery of images.
>
> Mary: What were the images for?
>
> Interviewee: Images—that is just collection of a lot of random pictures. Some of them are kind of Norman Rockwell-esque. For students to choose—they were told to choose three that kind of inspired them and they had to create the narratives—a short one about each of them. It's to kind of get them in to the process, thinking in terms of story and have do you tell a story having a beginning, middle, end and what kind of details do you include. (Interview with Molly, September 17, 2015)

Like the other teachers in this study, Molly used technology in order to collaborate with students and give them more choices. She structured the assignment by presenting the students with a canon of pictures from which they could select; this allowed them to choose what was interesting to them. The objective of this process was to motivate student writing. Her use of the word "inspiring" suggests an aesthetic orientation to the assignment. Although Molly talked about her work with students initially as a way to deliver content to them in a condensed form, the way she talked about individual lessons reflected an aesthetic sense and an interest in promoting democratic values and social justice within her classroom space.

A stark example of this interest in social justice came when her students asserted some strong curriculum-making around the observance of Martin Luther King, Jr.'s birthday. Molly told the story while we were talking more about her use of the Padlet application. She also demonstrated how she used it as we talked using Google Hangout—a Google tool that enables

video conferencing and simultaneous file and image sharing. As we talked, we discussed the complexity involved in trying to help students use technology, learn content knowledge, and understand what we thought were important civic issues:

Mary: Do the students post things from the Padlet?

Molly: They do sometimes. I'm trying to see if I still have another Padlet where they post. Because I've done kind of smaller things in my reading classes where they... I am thinking of the one that I have was a... we looked at Martin Luther King, Jr.'s *Letter from Birmingham Jail* and from there, because it was a reading class, worked on some basics as far as like main idea and that kind of thing. I had them post it on Padlet so they could see what other people had come up with. Let me see if I can get in to Padlet…

Mary: I was working with some other teachers who taught *Letter from Birmingham Jail*. They were required to do and assignment about different literary devices and so--

Molly: That makes sense.

Mary: --which is cool except for then like they don't get it. They never got to discuss it in a social justice stuff which was kind of a main rhetorical issue [laughs]--

Molly: Exactly.

Mary: --of the letter and so they spent all their time helping the students mine out the literary devices but they never got to the place where they could sew those together and say "yes and these devices can tribute to the social justice message." And the students understood this and they were upset about the fact that they didn't get that kind of control over the assignment but that's one of the things that—because it's really tough sometimes, because then the students actually wanted to write about social justice and they had to keep pulling things over to this metaphor. [laughter]

> Molly: I actually think [the] reason we came up with that was because my class had been complaining that we hadn't done anything for—it was February and it was Black History Month—and I was like, "Well, do you normally, is it something you've done?" I am like, "No teachers at the high school are doing anything about it," and I said, "Oh, I guess we can do something."

I started the conversation by mentioning other research I had conducted where students were frustrated about their inability to talk about social justice issues while reading Dr. King's letter. Molly joined in by saying it was her students who inspired her to pick that particular text. She continued by saying it was her desire to accommodate them that led to the particular classroom activity where they worked with the letter. Rather than responding to her students with some excuse about why Black History Month was not being celebrated or acknowledged in the school, when the students raised the issue, Molly gave the students the power to make curriculum. While it is true that Molly picked the letter, she let the students determine how to study it, and when they wanted to respond to the social justice elements, she had them develop responses to *Letter from Birmingham Jail* and then post them on a Padlet board. The students then read and responded to what each other had written. Not only did Molly attend to the students' interest topically, she also used a technological process (Padlet posting) allowing the students to engage with one another, which added another layer to the social justice interests of the students. It would have been only nominal to present the letter and have the students do a worksheet alone and then turn it in to claim an interest to the students' suggestion. Molly made real attempts to provide a learning experience where the students were able to display their thoughts and have access to others' ideas.

How Do These Teachers Demonstrate Policy Learning Through Curriculum-Making?

This final research question was designed to address the issues of performativity as an outgrowth of the use of technology. However, I selected work from Cuban (2009) and Spillane, Reiser, and Reimer (2003) as major pieces in my theoretical framework because I wanted to address technology use, even its efficient use as a practical part of curriculum-making and teacher work rather than just attend to the post-modern concerns embedded therein. Traces of the answer to this question have been present in stories from the data that I have already presented. Efficiencies of technologies are part of these teachers' technological narratives and provide a rationale for curriculum-making. Further, when efficiency is achieved this is deemed a classroom and community victory in every setting where I had a participant for this research. In this section, I will use the teachers' accounts to illuminate additional, subtle ways that technology policies, particularly at the school and district levels, influence curriculum-making in these classroom spaces. I will touch on issues of the relationship between performativity and inequality that impact the teachers' accounts. Again, I will begin with Karen's account and proceed through the rest of the teachers (Daniel, Evan, Molly).

Karen

Karen taught in the school that clearly had the most organized technology initiative, which was one-to-one iPads. Initially, I perceived that the organization of this initiative within the frame of such a small school would result in high amount of performative behavior at the expense of curriculum, but what I found was evidence of policy learning that intermingled with teacher agency. In Karen's case, that duality of learning and agency intermingled as she discussed her use of Canvas, a software program for iPad that allowed teachers to design lesson modules for students:

Karen: We use the system Canvas. I don't know if you've heard of it and so it's like a... a, it's kind of like learning suite, and it's an app that is going to be on all the kids' iPads. So like we, we used that kind of a little bit last year but this year they're really like pushing it and so when I met with my department earlier this summer we like we spent two days making up these Canvas courses and modules and standards and all that kind of stuff so.

Mary: Oh! So you're actually like doing learning modules online? That's interesting.

Karen: Yeah.

Mary: How did you learn to do that?

Karen: Well, in... we, so like I said we've been using Canvas since last year and it was mostly just to get us familiar with like the layout and like what the possibilities were we could use it for—and so this year the administration wants like at least the front page to be uniform through like also like any teacher you can look on the front page and see like "okay these are the standards what you're going to be learning in this class" and then "this is what proficiency looks like" and then after that we can use Canvas how we would like so some teachers are going to put like all their stuff online. I'm still... I don't know. I think I'll develop it as it goes so like while they're learning a unit they'll be a step online but not like ahead of me, I don't know. Yeah.

Mary: So how many of those [lessons do teachers] have to use—like do they require a certain number?

Karen: As far as like the number of modules, they haven't required any number. One thing that's uniform is like the standards for your content need to be on Canvas and what is proficiency looks like. So other than that it's really kind of up to the teacher.

Mary: Why do you think they did that? Just because they like stuff to look the same?

Karen: Yes and no. It makes sense because like last year you had teachers that are really good at using Canvas and how'd everything up there and available for parents to look at and then you have... literally have teachers who never logged in and I just thought those are might but by having everyone at least have these front page the same I think it presents a united front for the school to say like, "okay this is what we are teaching your kids and this is what proficiency looks like." So they can't go and be like "Oh there's other teacher in your department," says this is what it is. You know there's that uniformity and that's really good for... like the students who transfer between classes and things.

Mary: Yeah. Yes, because then when the kid says, "Oh I'm doing homework mom with my iPad," then like having that little thing on the front like makes that look more legit [laughs].

Karen: Yeah. (Interview with Karen, July 28, 2016)

Karen was largely interested in using technology for exploratory purposes for herself and her students. However, her disposition came with the assumption that technology like Canvas should be used and the exploration should move within its use—rather than leaving the decision about whether to create modules entirely up to teachers in her building. She also addressed the issue of community perceptions of technological use and what role those perceptions, or potential perceptions play in policy learning. Karen understood the institution of the Canvas program as a means to represent consistency, which she terms uniformity, in order to avoid concerns about why students were receiving iPads and to ensure that they were using them for instructional purposes.

Nevertheless, Karen's technological narrative was centered on exploration and so in her case, she was able, generally speaking, to keep exploration at the forefront of the iPad implementation she was striving for in her classroom. One example is the way in which she engaged with the policies of reading books on the iPad that were in the public domain because access to these texts and other resources were inexpensive, sometimes even free:

> Karen: I had my 10th graders read *Frankenstein* and 9th graders, and we gave them copies of *Fahrenheit 451*. It was like that, yeah. I know *Fahrenheit* is not in the public domain but I know one teacher was thinking about teaching *The Time Machine* by H.G. Wells and old *Dr. Jekyll and Mr. Hyde*. So yeah, generally classics.
>
> Interviewer: Because they are free?
>
> Karen: Yes. To also supplement what we have in the book room too. So they usually go hand in hand.
>
> Mary: Cool. You usually do them as novel studies or maybe you're only going to talk about one passage because it supplements something?
>
> Karen: Yeah. And for that, there's another app that's called Subtext that is actually in conjunction with the AR—Accelerated Reader program but you can do that. You can take a passage for a story and send them to the student's iPads and then can write on the text or react of it in a different way. So it doesn't have to be the whole book but a part of it.
>
> Mary: Yeah. So then you got all the tools for those things to be writable, they can mark on them and they can do all these things. Do you have lots of marginalia on books that you have?

Karen: Not my school books even though I would love that if that was possible to have each student have their copy and write on it but then also get rid of all that before the next class uses it, I would love that.

Rather than teach the entire novel, Karen used the fact that the iPads could store so many books at once (without taking up classroom space and wading through the policies around ordering paper copies) to give students access to multiple works simultaneously and then provide suggestions for tools that would allow for student responses to text around a topic or idea. There is still some move to make curriculum-making easier—more efficient—but the purpose is to enable learning and not merely generate a lot of data to be stored and used to gauge student and teacher productivity.

The issue of being able to access materials permeates not just curriculum-making, but policy as well. As careful as the administration at Karen's school had been around building the one-to-one program and orchestrating ways to use programs and other resources for learning, there were always policy issues in need of deliberation from one year to the next. In particular, when Karen and I talked during the summer, she had not experienced curriculum-making in the one-to-one format yet. She spoke about how she had used iPads in the past, what her goals were for them, and how she thought her students might respond:

Mary: Right now you're still talking from the frame of "Oh, we have this class set of iPads." But next year when they get the iPad, is that going to be theirs just for the school year or is that going to be theirs as long as they're in [this] district or...

Karen: This next year will be year two and the rules are that it's theirs for the year but if anything's lost or broken they have to pay to fix it and then it's turned in before they leave summer and then the next school year they'll get it back. And then when they

> graduate if they fulfilled all the requirements they get to take the iPad Mini with them as a graduation gift.
>
> Mary: So they're going to get back their same iPad?
>
> Karen: I don't know if they're going to be the same. I just don't know. I think they will.
>
> Mary: Okay.
>
> Karen: But it might be just randomly assigned again. They might just wipe them all. Because they told all the kids to save any photos or anything that they wanted to keep to their iCloud because I think it was going to be wiped. (Interview with Karen, June 23, 2015)

This challenge of ownership as part of policy was an interesting aspect of Karen's work. As the year moved forward, she was able to convince her students, particularly her freshman students, to utilize the iPads as their own. She permitted and even encouraged the students to personalize their tables and load programs. The idea is that these practices would encourage students to think of the devices of as personal property. Karen did note that initially she found it disruptive that students wanted to choose their own settings. Her seniors, who were the closest to receiving the iPads as a graduation gift, Karen described as being less interested in using the devices at school. She did not know whether that group of students just did not like using iPads or if they actually had just taken the iPads into their possession already and were using them actively away from school and her presence.

She also sought professional development as a way to address policy in curriculum-making, thinking that doing so would give her the information she needed to make sense of what was being asked of her. For example, she took a course on how to use Newsela, which is a

website that provides current events at various reading levels. Below is an example of an article used with technology to teach about technology (Figure 12).

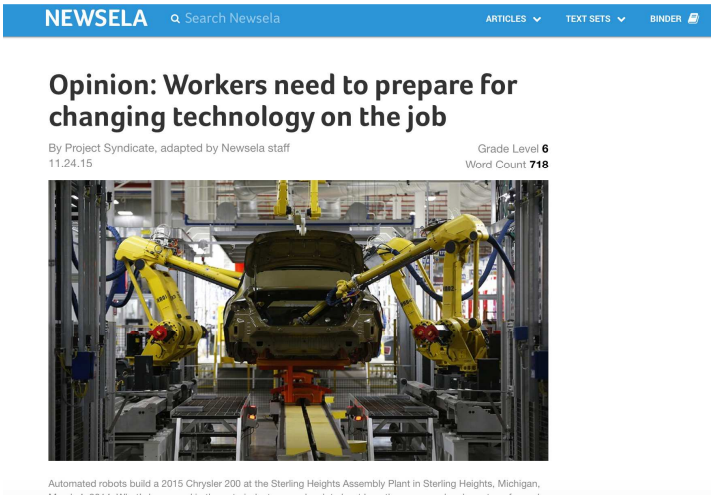

Figure 12. Newsela article about technology. <can provide more description here>

In her various extra courses she had learned to think of technology as a type of content that ran alongside, rather than being separate or competing with her ELA content. It also let her be "in the know" about a source of text that was free for her to use with her students that looked sophisticated because it had so many features and its articles were so timely.

Daniel

Community perceptions in these small town/rural settings also played a role in technology use. For example, Karen attributed her school's interest in Canvas partly as a measure to attend to community perception. Her interest in this is somewhat understandable because she lives in the same community where she works. Daniel drives 45 minutes to an hour in order to commute to work every day because the community did not offer him the social opportunities that he wanted at that point in his life. Nevertheless, parents' perceptions regarding Daniel's teaching mattered to him. He had to think about how to use technology in his classroom

that complied with school policies. Daniel detailed an experience where he confronted negative perceptions around technology with a parent:

> Mary: You have been teaching different novels, so you've talked about *To Kill a Mockingbird* and *Monster* and then you've got the story about where you were trying to use Twitter in the class some of the parents weren't very excited about that.
>
> Daniel: Yeah. For something like that, I think, two or three voices is over-exaggerated in my mind, because by and large, of the 157, about 160-ish students I have, there probably is a handful of students and parents who complained about it. Five just seems like overwhelming initially, but for the most part, I think [using Twitter] went really well. Just initially, when you have four or five complaints, you say, "Oh my God, what am I doing wrong?"
>
> Mary: [laughs]
>
> Daniel: Basically, the thing is four, five. You take them, you walk in and, "It's not a big deal if you don't want to do it. You give alternate activities. They'll get the same education. It's not quite the same feel for what we're trying to do; they'll have the same sense of community anymore, but they're not going to be penalized or punished because you think Internet's evil.
>
> Mary: [laughs] Yeah. That was really the crux of it, was that if the students use technology, then they're going to use it to bully or get bullied.
>
> Daniel: Yeah. One parent emailed me at the beginning and mentioned that, "I don't know if you're aware, but Twitter is a great medium for bullying." I was thinking, "Yeah, so is coming to school and so is watching TV." I was like [to her], "You are right. You can use

> Twitter as a bullying technique and tool, but that doesn't mean you have to. (Interview with Daniel, January 8, 2016)

Concerned and/or angry parents made the teachers in this study uneasy. The strategy for addressing this particular parental concern about the potential for Twitter to be used for bullying was to agree with the parent, and then make the counterclaim that other circumstances can also host bullying behaviors. According to Daniel, part of his reasoning behind using social media like Twitter in his classroom was to show students how to be civil while engaging with each other publicly. He needed those skills when he interacted with parents who were concerned about what he was doing in the classroom.

Interestingly, Daniel taught *To Kill a Mockingbird* by Harper Lee and *Monster* by Walter Dean Meyers. Both of these novels deal with difficult issues around the criminal justice system's treatment of Black males. Both books are often challenged in schools, particularly in schools and districts that serve mostly white students like Daniel's school did. However, no one challenged either of these books while I was working with Daniel. It was the technological medium of Twitter that was upsetting to parents, and it was only a few parents at that. Even though not very many parents raised concerns, Daniel's honest exclamation "Oh God, what I have done now?" captures how nervous parental challenges made him and how in his school, which had far fewer policies around technologies than other teachers in this study (i.e. Karen's school), he was mostly on his own to try to resolve the issue with the parent. He could not say something like "well, we have this goal at our school to help students with social media use" or "we have been encouraged to use Twitter as a means of increasing participation." Instead, he had to advocate to use Twitter (recall that he lost his bid for Instagram), and then he had to assuage the parents on his own.

The policies that he did have to consider were the ones that stated that students have to be presented alternative assignments if they (or their parents) object to the technology. Daniel is ambivalent regarding his feelings on this topic. He acknowledges that it is not a huge concern if students have an alternate assignment given that those assignments are easy to develop. Yet, it was apparent that Daniel felt there was something lost when students did not participate in the way in which the assignment was initially conceptualized. After all, he designed that curricular activity for a reason and an alternative assignment was not what he envisioned as he made curriculum with students. That was not a choice that he was excited to offer and not one born of policies that considered the complexity of student-parent-teacher interactions around technology and curriculum.

Evan

Evan is a problem solver. Although he was skeptical of technology's ability to make his life as a teacher easier, when he saw a real use for it, he was quick to do so. One interesting experience that he had in terms of grading policy brought Evan and his student into a bit of a double bind:

> I had a meeting with a parent and a failing student last week. The parent asked the student whether or not he was filling out his school assigned agenda with his daily assignments. He answered that he was not. I suggested that he actually use his smart phone to write down his assignments so that he can set reminders for himself and because students already utilize their phones for so many other tasks. The parent said that this suggestion would not work because the student has his phone taken away as a consequence of his poor grades. I thought that this was sort of an interesting paradox because the student could potentially do better if he could use his phone to write down assignments; however,

> he's not allowed to use his phone to do so because he doesn't write down his assignments already. (Email exchange with Evan, October 16, 2015)

Once again, we see the ways in which parents can be players in polices in schools. Although Evan teaches in a school that built up its computer resources for students and which did not prohibit the use of technological devices in school, he did not have the power to command the student to use his phone in a certain way, the same way that Daniel did not have the power to command his students to use Twitter and Karen did not have to the power to require her seniors use their school-provided iPads. Instead, each had engaged in policy learning as a negotiation between multiple entities, including parents. For Evan's student, if these stakeholders could not agree on some method of helping the child record and recall his assignments, a host of other policies around grading would come into play. These are unlikely to produce a result that will be pleasing to any of these parties. Although not much can be said about the parent or student since they were not the focus of this study, for Evan, this issue with helping his student keep records struck at his ability to provide a fair assessment of student achievement, since he cannot evaluate work that is not completed and turned in.

More so than the other teachers, Evan's discussion of his teaching attended to policy issues like the Common Core Curriculum Standards (National Governors Association Center for Best Practices, Council of Chief State School Officers, 2010). In attending to these standards, Evan used technological tools, like Turnitin in order to provide what he perceived was a more just assessment. He also made substantial efforts to locate and use rubrics from based on tests like the ACT (https://www.act.org/content/dam/act/unsecured/documents/CCRS-WritingStandards.pdf) that would assist him in making informed judgments about student work:

> Today, I went out on Google to hunt for a new rubric to grade my juniors' essay finals for first semester. I had previously been using a Common Core Writing Rubric from Turnitin.com. For various reasons I was ready to move on from that rubric. Perhaps, one of the main reasons I was ready to move on was that it already felt old despite the fact that it was only from 2012.
>
> I did find a rubric that I've decided to go with. It's ACT's College and Career Readiness Standards writing rubric. It was updated in 2014. But even this rubric I was somewhat disappointed with because it didn't fit neat and tidily onto a one-page PDF document that I could hand out to students. So instead, I posted a link to it as an online announcement on Blackboard.
>
> My situation is certainly a microcosm of the ever-evolving nature of materials found on the Internet and how quickly things seem outdated. It also portrays how we are disappointed with the materials we obtain even though we should be blown away by our instant access to vast expanses of information, data, and tools. (Email exchange with Evan, November, 7, 2015)

Evan's assessment calls attention to what he sees as a major problem with the entanglement of policy and technology. Namely, that technology changes quickly and policy changes slowly. For Evan, the implementation of technology and policy was a messy, untidy experience where his learning about different programs could not keep up with all of the options he potentially had for making curriculum that engaged in and was fair to for his expectation of students.

Molly

The issues around assessment and grading as they overlay with technology use were also critical in Molly's teaching. She was teaching in a regular English classroom and in an

alternative setting where she could see the challenges students faced when they could not produce evidence that they were learning what policy dictated that they should be. Just as Karen was supposed to use the Accelerated Reader program, Molly was obliged to use Sunburst reading (http://sunburst.com/portfolio/portfolio-tags/reading/):

> Molly: We use the [Sunburst] Reading as our reading assessment and I've used it for five years and I hate it. It's the worst product ever and we just renewed our contract with them on the promise that some changes would be made and bla-bla-bla and nothing has changed obviously. I was trying to convince our curriculum coordinator that we need it to be talking directly to the company and getting some stuff because we're paying the money and they know how to solve the problems that we don't.
>
> Mary: Are these technical issues or are these like about the content quality?
>
> Molly: It's more on a like access to students' scores, like we did a basic score but like seeing their actual tests so we can get some ideas and get ... what the flow of their thinking is and that kind of stuff. How do we actually use these scores to help with our instruction and... there's apparently someway to do it but we don't know how and nobody at district apparently knows how. (Interview with Molly, September 17, 2015)

Molly described a passionate interest in gaining access to student scores so that she could access not just numerical data but "the flow of their thinking" as they produced responses using this reading program. It was upsetting to her that a company would accept payment for providing this program and not respond to her and her colleagues' need for immediate data. Molly was all too aware of the fact that technology promised more data about student learning and greater chances of teachers making good decisions about how students were progressing in their thinking and their skills. What was frustrating to her then was that the company was collecting all of this data

and then not giving her access to it. These kinds of experiences did not offer her the chance to learn to use data produced with technology in sophisticated ways that would benefit her students.

Even though Molly was upset with the company and frustrated with her district reading coordinator, she was still willing to listen to the district specialist and learn new programs and applications to use with students. In particular, Molly liked to use Newsela, applications like Kahoot, which is an online quiz building tool, and Padlet in her work with students. Finding these programs and learning to use them was just as important to Molly as it was to the other teachers in this study. She also specially mentioned conference attendance as a major source of information about what types of programs were available:

> Mary: How did you find out about this, like how do you find out about this stuff?
>
> Molly: How did I found out about Newsela? I'd rather say a reading curriculum coordinator mentioned it a couple of years ago as we were trying to do our summer planning and figure out what our curriculum is going to be. It's about time we've done this and then all of us, reading people passed it on to all courses, the whole school because it's really helpful for content area readings. Kahoot, I just found Googling like interesting vocabulary activities and a lot of people used Kahoot for vocabulary, that kind of stuff so that came up. For Padlet, I found that one at "The Right To Learn" conference that they hold in [State] every year through the University of [State] and our district where we send our teachers every year to it. And one of the sessions was on Educational Technology and that was one of the things that they shared on there.
>
> Mary: So when you go to a conference and you know, do go out and look for technology presentations to go to like specifically or do you just kind of read all the descriptions and say, "Oh, I'll go to that one and I'll go to that one."

> Molly: I usually try to find at least one tech and usually, one that is like come to the session and we'll show you 10 very technological ways to whatever, use technology in the classroom and just because that makes it more likely that I'm going to find something I can use.
>
> Mary: So you go there and they'll say, oh here's 10 tools and they may show you Kahoot and stuff like that and then you'll use maybe one or two of them.
>
> Molly: Yeah. There's some stuff that you see and you're like, that's really cool but usually the types of teachers that are putting it on come from a school with one-to-one technology and so, some of it is very much like "that would be amazing but we don't have access to that right now." I keep all of those handouts and they're in my professional development folder for the possible future but not right now.
>
> Mary: So then a lot of the barrier is just the fact that you can't guarantee in your school that everybody is going to have their own device. (Interview with Molly, September 17, 2015)

Attending conferences is not just about curriculum-making, it is also part of the policy awareness process. Molly learned what types of programs and applications were available and how they were implemented under different policy contexts at different schools. Part of what she was learning may have been discouraging. This was because she was presented with technologies as being really easy to implement from people who conveyed a sense of support and easy access when Molly struggled to get data from a district-mandated reading program. Nevertheless, she was setting herself up to continue to learn by keeping a folder, saying to herself that maybe someday she can do some of those things. In the meantime, though, in a school where students do not have access to the same devices and she cannot always access what she thinks is

necessary to help students, Molly had learned how to use a variety of programs and engage students in developing a curriculum that acknowledges students' identities and interests.

Summarizing the Findings

The teachers had strong technological narratives built around exploring technology and experimenting with it. These were supported by the fact that they came from families were they were allowed to do these things and there was not pressure in school to do something specific with technology. Karen noted this in her anecdote about setting up her first email account and David expressed this in his anecdote about his movie making efforts. Evan talked about moving from using a gaming system to a computer system and Molly had experiences where she helped friends use technology and pooled resources like printers. However, as they became more experienced teachers, this exploration and experimentation was often tempered by a need for instructional efficiency. They all observed the ways in which technology was used for games and entertainment when it could have been used for more targeted instruction. They also realized that while they had access to certain resources, their students did not and they felt it was ethical to teach with technology and not just entertain.

The need for efficiency also ran up against the teachers' need to develop and maintain relationships with students and parents. Often the efficiency narrative was at the crux of parental concerns. The teacher needed to prove to parents and administration that the intended device would be used for learning

Up against these challenges, along with other challenges, such as administrative needs to ensure that what was bought was used and infrastructure challenges, teachers sought ways to use technologies to provide opportunities to students. There were opportunities to learn to respond, even when a student lacked keyboarding skills—such as with Molly and Karen's students. There

were new opportunities for students to connect with classmates and share ideas as noted particularly by David and Evan. There were also new opportunities for students and teachers to consider social justice while developing and leveraging literacies. In order to provide these opportunities teachers used imaginative processes, collaboration with students and colleagues, and participation in conferences to develop a stance of complexity in their relationship to technologies as teachers. They avoided getting caught up in defining technology, being defined by their status as rural teachers, and defining themselves by their technological competence. The teachers interfaced curriculum and policy through processes of appeasement of parents and administrators, advocacy for themselves in terms of trying to obtain new devices and programs, and the academy. They were all interested in going to conferences, participating in scholarly conversations about technology, and in completing professional development and graduate level work.

Previewing Discussion about these Findings

What has been presented in this chapter has been a complex portrait of findings—some may even prefer to conceptualize it as a mangle (Barad, 2007; Hekman, 2010; Pickering, 1995)—the goal of which was to depict what these teachers bring with them to their schools everyday as they work not merely to implement technology, but to make curriculum and build a life for themselves and their students with devices, programs, and technological products. I have intentionally avoided assigning the teachers types or images as McAdams (1993) did in an attempt to stay true to my conceptual focus on personal history, practical knowledge, and the messiness of technology integration in various contexts that demand not just teacher agency but teacher learning (Cuban, 2009). In addition, I tried to show the ways in which these teachers did not just learn, but imagined, re-imagined, and re-envisioned their work with students in order to

reconcile the multiple and conflicting demands placed on them and their students. All of the teachers described ways in which they preserve ideas about curriculum they would like to make. Here is what Karen said specifically:

> I call it my "spark" folder. It's full of things that I think are interesting or fun or things I want to try but just haven't had the time to incorporate them. Teaching is all about time. You need time to think where the best fit is for a class, a student, a topic, etc. (Email exchange with Karen, November 11, 2015)

In the final chapter of this dissertation, I take a more directed look at these teachers, their technological narratives, their curriculum-making, and their policy learning to suggest implications for practice, research, and policy. These suggestions portend to helping sustain teachers in their work and offer a broad range of ideas for consideration across a broad range of entities with a stake in technologized educational trends. These include not just the researchers and teacher educators, the typical assumed audiences of implications for studies like mine, but also the people who are designing and selling programs and devices to schools and the members of communities, especially rural ones where teachers like the ones in this study live alongside children, striving to provide educational opportunity.

CHAPTER 5

DISCUSSION

In chapter four, I shared the findings of this research project. The structure of that sharing was to present my research questions and then provide examples and commentary for each of the four participants that answered those questions. In that chapter, my goal was to illustrate the ways in which these teachers made curriculum with their students as individuals who were working from technological narratives they developed as personal knowledge. Nevertheless, contextual considerations were made in these teachers' classrooms as they considered the content they wanted to teach, the students with whom they were working, and the policies—particularly the unofficial local policies that provided them access to some technological resources, and precluded them from using others. The purpose of this chapter is to (1) look across accounts for each of my research questions, (2) attend to the accounts of each participant, and (3) offer implications for the study as a whole.

I will begin by offering an overarching idea about the relationship between teachers, narratives, and technology. Then, I will restate my research questions and draw out some major ideas from the findings of the study using my theoretical framework. Next, I will return to the technology teaching standards outlined by scholars and embraced by various English teaching professional organizations that I introduced in chapter two in order to draw out practical implications for this work. Finally, I will discuss potential next steps in terms of research on this topic for myself as a researcher and potentially other scholars who are interested in similar issues.

Teachers, Experiences, and Technology

As the concern and interest in technology turned in earnest to higher level computing towards the end of the 20th century, Pendlebury (1995) asked:

> How far is teaching a matter of luck? … For if teaching is centrally, or substantially a matter of luck, on what grounds may we praise or blame teachers for their work, in what sense can they be held accountable? … For if luck commands, nothing is certain. It undermines the basis of our moral judgments and of our plans and predictions. (p. 11)

In her work, Pendlebury goes on to define what she means by luck—specifically articulating that most of what is important in developing and maintaining human relationships is deeply subject to reversals of fortune. She then argues that in Greek philosophy humans were subject to *tuche* or whim, and the only thing they had to fight back with was *techne. Techne* were gifts from the gods of art, craft, and science, all of which are reflected in our modern day world, including the use of technology.

Techne works for managing need and predicting and controlling future contingencies, faith in it is formal rather than substantive, especially when it comes to teaching. The question of which *techne* will best prepare a practitioner and serve a student is a matter of debate. That debate came through clearly in the experiences of the teachers in this study. Since these teachers were working in rural settings, the resources in which they had access to were dependent on forces they could not control (i.e. the whim). This called into question what their local school councils would choose to endow them with in terms of devices and whether there be a concomitant rise in infrastructure. It also allowed them to question what kinds of professional and community scrutiny would accompany the technological initiatives.

I bring up Pendlebury's (1995) ideas about the ways in which teacher work is vulnerable to luck as preface for revisiting my research questions and to propose ways in which I can use what I learned during this study to suggest sound, responsible English language arts (ELA) teaching in rural spaces. In this chapter, I revisit my literature review and read my data in response to the dominant ideas in the field. In addition, I make explicit connections between my theoretical framework and the findings to further show how what I learned from these four participants' answers to questions about the experience of responding to one's history as well as policy expectations in making technologically grounded curriculum with students. My specific research questions were:

1. What are the technological narratives of these ELA teachers that emerge as part of their personal mythmaking?
2. How do these ELA teachers describe their use of technological narratives in their curriculum-making?
3. How do these teachers express the ways in which they infuse their technologically grounded curriculum against a backdrop of concerns about performativity and reform?

In their technological narratives, the teachers in this study came to computers and most other technologies passively, the opposite way in which Prometheus came to fire. Teaching students technologies can be viewed also as Promethean. The teachers in this study utilized the technological resources that were accessible in an effort to best serve their students and to accommodate for the resources students did not have or were unable use in sophisticated ways. What this service looks like varied among the teachers and also made some departures from what research has suggested ought to occur.

Revisiting the Literature Review

Teachers ought to use technologies to promote student literacy and social justice (Selfe, 1989). Policies around ELA teaching with technology have embraced this idea. Critical thinking for the purpose of argument building and composition through multiple modalities was highly recommended while avoiding the disruption of classroom and community life (Pope & Golub, 2000; Young & Bush, 2004). Avoiding disruption would require teachers and students to form new relationships that abandoned old power structures (Spires, Oliver, & Corn, 2011).

However, much of the empirical work on teachers' preparation, access, use, and evaluation of technology for learning, particularly in ELA classes, suggested that teachers are not following recommendations. Lack of compliance is more apparent in rural settings, which may be due to the limited technology resources and the infrastructure required to appropriately comply (Sundeen & Sundeen, 2013; U.S. Department of Education, 2010). When ELA teachers are provided devices such as laptops, they are still unable to develop curriculum that meets the literacy and social justice goals through student-centered learning (McGrail, 2007).

This critique of how teachers are using technology has not been restricted to ELA teachers. Becker (2000) and Russell, Bebell, O'Dwyer, and O'Connor, (2003) all found that it was difficult for teachers to do more with technology than communicate with parents and colleagues and design curriculum materials. McGrail (2005) also found teachers were more likely to use technology when they perceived doing so would be supported within the school and it was transparent how the technology would benefit students' learning. These findings came alongside an increase in the practitioner-orientated guidance for using technology (Huffaker, 2004) and findings that teachers were interested in using more technologies in their classes than they believed that they were able to use effectively (Judson, 2006). To round out the literature,

Flanagan and Schoffner (2013) compared experiences of a novice and an experienced teacher and found that novices and experienced teachers may share similar views about the value of technologies and purposes in an ELA classroom, but still construct curriculum differently.

These teachers took up complexity in its fullest sense as they worked to present subject matter to students, elicit cooperation from students, represent their curriculum to the community, and demonstrate the emotional, social, and cognitive competence to use technologies that are ever changing. The teachers engaged in the practice even when the technologies to which they were given access did not work efficiently. Some examples of this can be heard in Evan's narrative contemplating how to best use Google Tools for revision with students and Molly's consideration about how to attend to the mandate to use an online reading program. When the teachers did not see the immediate value in all of the technologies that they were given access to, they actually were trying to use what they had. Further, when they wanted something that they could not obtain, instead of folding on the use of technology, they searched for ways to do what they wanted the best that they could. For instance, David wanted to use Instagram as well as Twitter, but for reasons that were not revealed to him, he was only given permission to use Twitter.

Revisiting my Conceptual Framework

My conceptual framework contains several elements, which are depicted in Figure 1. The first element came from Clandinin's (1986) exploration of teachers' personal practical knowledge of how to live on professional knowledge landscapes. The second major element came from McAdams's (1993) work in personal mythmaking of the self. At the core of McAdams's work is the argument that we shape and are shaped by the stories that we tell. He also argues that mythmaking is a core creative process for adults as they move through their

lives. For the third element, I drew on the work of Cuban (1986, 1993, 2009) who spent much of his academic curriculum looking at technology integration (or the failure thereof). Ultimately, he determined that teachers value relationships with students above instructional efficiency, and this was a primary reason for their hesitancy to use technology. Further, he posited that the top-down directive for teachers to use technology often achieved the opposite of what lawmakers and administrators hoped teachers would do with technology.

The final element of this framework came from Spillane Reiser, and Reimer (2002). They questioned the popular framework for critiquing change in schools; that it was simply a matter of agency. Instead, Spillane demonstrated that there were connections between teachers' understanding of policy and the ways in which they integrated understandings about policy into their teaching contexts.

Curriculum Emerging from Personal Practical Knowledge

The curriculum that emerged in this study from personal practical knowledge did attend to subject matter. With each teacher, it was vital that students learn content around specific ideas that was typically grounded in a particular text. Some of these texts included *Monster* by Walter Dean Meyers, *To Kill a Mockingbird* by Harper Lee, *Fahrenheit 451* by Ray Bradbury, *The Great Gatsby* by F. Scott Fitzgerald, and *Dr. Jekyll and Mr. Hyde* by Robert Lewis Stevenson. These texts might be described as fairly typical reading for high school aged students in the United States. The themes and issues that the teachers intended to discuss with students also seemed to be in line with what might be included in the high school ELA curriculum in many schools. Importantly, these novels are likely taught because they are there in the storeroom and teachers have access to them. Their batteries do not die, their screens do not lose vertical hold or lose their pixilation, and the vicissitudes of Internet connectivity have no impact on their

functionality. The trick, in these teachers' minds, is to figure out how to develop a range of activities that utilize new technologies while carrying the text and content in rhythms that still permit classroom life to continue, even if the wireless fidelity fails, a parent objects, or a student does not have the device. The fact that these teachers perform these tasks daily with varying resources in vastly different communities is a testament to their ultimately wide definition of the gifts of *techne*.

Relatedly, these teachers demonstrated the routines and rhythms of technology use over the course of summer planning and then a semester of implementation and instruction. During this study, the teachers' use of different types of technologies, including programs and devices and the products they made, were subject to ebbs and flows. This was important because I wanted to show natural technology use in classrooms, rather than prescribe a use for a researcher-generated purpose. Further, I did not want to merely highlight some of the most technologically-based learning activities. Instead, what we saw in each of these classrooms was that teachers had technologies that they could use, and they were generally willing to use whatever they had to varying degrees. How they used these was a reflection of not just their beliefs about teaching that were then mediated through technology, but also their personal knowledge of technology as it interacted with beliefs about teaching. Thus, sometimes the teachers were in times of high technology use and other times the assignments they generated were more traditional. Given that these were four teachers from different school districts in several states with different technological initiatives, they all exhibited these technological "highs" and "lows.".

Another interesting aspect of these teachers' work was that they were all trying to use different forms of technological resources to give students chances to engage with content in

ways that they hoped would be more meaningful. In order to use those technologies well, they had to enlist the support of the students as choice makers in this process. It was evident that the students were taking up this choice making as part of the curriculum in deciding not only how to do their assignments, but also how and whether to use certain devices and programs. This was highly evident in narratives like the one from Karen where she talked about how her senior students did not want to use their iPads. Instead, the students preferred to go to the computer lab. This was interesting considering the fact that the iPads were going to belong to the seniors sooner than any other group and therefore it would be assumed that they would be most interested in utilizing them. However, just because these students were not planning to use the iPad in the classroom, that does not mean that they were not making curriculum outside of school in other places.

In addition, Karen's other students were highly interested in making sure that they personalized their wallpaper settings and removed undesired applications, even with Karen's urging not to do so. These were the students who were younger and going to have to return the device, probably to be cleaned and stored, until the fall. These rhythms of ownership and preference became important curriculum in her classroom, and the other participants had similar experiences where the students leveraged the fact that they were working in a technologized space to co-make curriculum. For instance, Molly supported her students in using applications like Kahoot to make what she thought was a very large number of quiz questions, many more than she would have ever required. When there were activities or platforms that the students did not utilize and demonstrate interest in, she did not require them to continue their use.

Capturing curriculum-making as a series of these rhythms that involves content, devices, and student preferences is important for interpreting teachers' use of technologies in their

classrooms and for interpreting studies where beliefs are solicited. Indeed, teachers may believe certain things about teaching and learning with technology, and then they may behave in opposite or contradictory ways when they are observed later on. But if such observations do not occur over a long enough time period, then it is likely that an observer will not be able to see teachers acting in perfect harmony with their beliefs. Further, what a teacher believes about a certain topic like technology may change quite a bit from day to day as teachers work through the year.

One striking example of the ways in which teachers' beliefs about technology vacillate during the course of a school year came from Evan. His interviews often seemed to question the efficacy of technology, but as I collected artifacts from his teaching and visited his school, I saw him using technology quite often. Another critique that might be leveled at Evan is that he was so interested in using the Learning Management System (LMS) as a primary type of technology use. This type of use does not seem like curriculum-making at first blush and on a survey, if he responded that his most often used technological tool was the LMS, this information might be used as a critique of teachers. However, what I observed was that Evan used the LMS as a way to help him build relationships with students who were not formally assigned to him. In this way, he was able to make curriculum at the school level and in the community as he engaged with the students, and he was also able to advocate for and make curriculum at the school level. He did this as he conversed with like-minded colleagues and petitioned through his school's typical process of talking with administrators and raising issues during meetings to get partial access restored for *everyone* in his building. It would be interesting to learn whether any of his colleagues, upon learning how he and his allies were using the Learning Management System, began to do similar things when they were granted part of their usage rights back.

Personal Mythmaking as Foundational

The second part of the theoretical framework I used for this study was based on McAdams's (1993) work in personal myth-making. His work was important to use as I considered the ways in which these teachers brought forward their own experiences as they determined how to use technology to make curriculum. Karen noted specifically that when she set up her first email account, it never occurred to her to use it for school purposes and she was not sure how she would have felt if, when the account and the way of communicating was so new to her, she would have been receptive to such a suggestion. However, she appears to use email now for mostly professional rather than personal purposes since she has gained more experience with it. It was not a nuclear episode for her to make the switch, but rather it was something that just happened gradually. This understanding stood against her need to have her students use new technologies for academic purposes right away.

The young people she was teaching made great efforts to try to personalize these via wallpaper and by deleting applications that they did not want after an assignment was over, but Karen persisted in trying to apprentice them into the idea that the iPads, when used in school, were primarily for learning. Further, she had to do this without taking the devices away (to the greatest extent possible) and without making lots of stringent requirements around the ways in which her students used the iPads. The device itself was in an interesting space of simultaneously being considered the property of the user, the teacher, and the school. Karen worked within the space of this confusion by negotiating with the students, by working to notice what they wanted to do and not do with the iPads, and designing her curriculum around what she perceived as their preferences.

Molly also offered an example of this when she talked about the importance of typing skills. The students she was teaching did not possess that skillset. Again, rather than punishing them, she did her best to negotiate with the students and work to craft assignments where a lack of typing skills would not preclude them from being successful. This was especially important to Molly because she was working with a racially diverse population. She viewed the diversity as a responsibility. This responsibility was not merely to teach students about social justice by giving them particular kinds of assignments. She was trying to live this narrative alongside them as she worked to prevent students from needing credit recovery and by giving students who needed credit recovery access to the very best technological resources in the school. This social justice angle could be enhanced by the ability to reach multiple audiences beyond the classroom, such as when Evan had his students write to their legislators.

Finally, although Daniel and Evan both had instances where they used technology mostly for entertainment, relaxation, or preoccupation, that was not the dominant orientation for using technology in their curriculum-making. Instead, they were designing projects with literature and trying to help the students learn vocabulary, take tests, learn to use visual literacies, and become more effective composers of various kinds of texts. Along this path, there were parents who disapproved and assignments that started out highly technological and then became less so by the end for various reasons. The reason they did these things rather than taking up the narrative of using technology to entertain was because they had learned not to do that in their preparation, from the culture of their schools, and probably through their own experiences. Reflection was a particularly strong force driving them away from their narrative. They realized when they were students sitting at computers "just playing games" they were not learning things that would help them build an opportunity structure. For Daniel and Evan, doing right by the students meant

tempering the ways in which they lived out their technological narratives in their curriculum-making, although both men reported using entertainment and gaming technologies personally and they leveraged knowledge of these technologies in their relationship-building interactions with students.

These experiences indicate that teachers' beliefs about technology use are complex and multifaceted. It also implies that there are no hard and fast lines between whether teachers do or do not "enact their beliefs about technology". The teachers in this study had beliefs about the importance of technology for learning, but their technological narratives enabled them to remember how they experienced technological advancement and then fulfill parts or elements of their beliefs while intentionally leaving others for later. This was usually so that they could enact other professional duties or so they could concentrate on what they thought was important content. This complex orientation is unlikely to manifest itself in surveys about beliefs and actions or even observations. It only emerges through a study designed to understand the lifeworld (van Manen, 1990) of a teacher through the lens of their experiences.

Further, the teachers' identities in relationship to their status as rural teachers also played a part in their myths of self. Daniel was the only one of these teachers who did not live in the community where he taught. Even so, he had made it a priority to understand the history and economics of the area, including the facts that were shared with me when I visited his school. Evan and Daniel both grew up in rural communities, but Karen and Molly did not. Molly and Karen had to adjust to life in their communities in a different way. Thus, there were overlaps in their technological narratives and their sense of who they were in their teaching spaces. In particular, Molly noted how strange it was that her students did not have the ability to print assignments at home or take typing classes—both of which are affordances in areas where there

is easy access to technological devices. She had become comfortable with the idea that the technological device most of her students had ready access to was a cellular phone, but it still felt strange to her.

Technology Integration as a Struggle

Looking at the teacher's technological narratives demonstrated how the use of technology to engage in curriculum-making with students can be a struggle when judgments are passed on teachers as they perform their duties in public spaces. Since this was a phenomenological study, it was important to focus on objects or elements within a lifeworld (van Manen, 1990). In order to attend to objects of technology, Cuban's (1986; 1993; 2009) work provided a backdrop for thinking about technologies in the hands of teachers. When his research was conducted, only one person could use most of the technology at a time, and so in the social space of classrooms, single user devices went largely unused. When these devices such as projectors, radios, and televisions were used, then it was the teacher as a sole user often making the decision about what content flowed from the device and when. In these circumstances, Cuban noted that as full of technology as schools were, little teaching was happening with it. Essentially schools were buying technology so that they could say they had it without making any evaluation of whether and how it was used (cite).

In the data that I gathered from the teachers in this study, I also found that these teachers considered themselves leaders of technology use and made many of the decisions about instruction. When there were problems, the students looked to the teachers to fix them or make adjustments that allowed the technological elements to be jettisoned in order to for the content presentation to proceed on pace. Finally, as Cuban (1986; 1993; 2009) might have predicted, every teacher had what I started calling "relics" in my conversations with them. Karen decorated

her old VCR with greenery while Molly's sat propped in a corner. Evan's radio sat on a shelf collecting dust. Daniel had a stack of books atop a DVD player. Karen showed me the old laptop cart no one used anymore. It is featured in Figure 13. Cuban would have smiled to see these things, I think.

Figure 13. The laptop cart at Karen's school.

However, new movements have occurred since Cuban's (1986; 1993; 2009) original work. Devices and programs are leveraging the affordances of the Internet, and they have perhaps taken a cue from gaming technology. What I thought was most interesting was how teachers seemed to be working with pre-electronic technologies, electronic technologies, and Internet technologies. The technologies were mostly those that required electricity but were not Internet-ready. In these cases, a pre-electronic technology like a white board or a book was preferable to an overhead projector or VCR to the teachers. The Internet-ready technologies are designed in various ways to support multiple simultaneous users. Further, the devices are smaller and students can pack them away; a circumstance that was unheard of in the 1980s. This study, in terms of teachers' experience, calls into question *how* has that struggle changed?

The answer lies partly in discussions that have already advanced around device ownership, student comfort, preferences, and competence in using technology for learning.

These elements necessitate collaborative spaces that teachers and students have to build in order to allow technology to be part of their daily rhythms. I have already made some mention of the alternating currents between classical uses of technology that are mostly teacher centered and mostly occur around teachers using low-level technologies to communicate as professionals and to plan lessons. What I want to address in this section is another aspect of the teachers' experience as they struggle to use technologies that they have access to, but which lay fallow more often than a lot of scholars would approve. This is the creative imagination it takes in order to conceive of curriculum that will meet learning goals, engage students, please parents, and not arouse concerns from administrators. To make curriculum with technologies in these ELA classrooms required imaginative thinking coupled with professional development, attendance at professional workshops (e.g. NCTE), and administrative support to try new technologies. When I realized this was such an important part of the experience of being an ELA teacher in a school with a technology initiative trying to make curriculum with students, I searched for articles about creativity and imagination for instruction with technology, particularly teaching ELA. What I found were articles about how to help students be creative and explanations of the creative processes in instruction as a feature of cognition. I also identified information about teachers' reluctance to incorporate technology. When I changed my search terms to include *innovation*, I found several unpublished manuscripts based on research conducted in places like the United Kingdom about teachers coming up with their own uses for technology rather than using them in ways in which they were originally proscribed.

This work of what I call *imagined curriculum* seems vitally important to sustaining teachers in their work (Rice & Mellard, 2015). The notion of imagined curriculum builds on Eisner's (2001) explanation of the classifications of curriculum: explicit curriculum, implicit

curriculum, and null curriculum. Explicit curriculum deals with publicly explicit goals about what students ought to learn, including disciplinary concepts and ideas as well as ones about citizenship. The explicit curriculum is displayed to the community as what it intends to provide. In each of these settings, a different technological initiative, complete with devices like laptops and programs like Canvas, were part of the explicit curriculum that the school intended to provide. By construct, implicit curriculum involves other types of learning that schools provide without being public about it, or even without realizing it.

The null curriculum, according to Eisner (2001) includes everything that is not taught. The null curriculum is important because it exposes the bias of curricular materials, but also because it highlights the fact that children have the capacity to use more of their cognitive resources than they are typically allowed to in classrooms settings. By looking carefully at null curriculum, Eisner posits, teachers and students can learn to shape more interesting and engaging classroom work.

Indeed, each of the teachers had curriculum that they could see ways to enact immediately but they also had curriculum that they planned, hoped for, or imagined at some future point. Karen and Molly seemed particularly strategic about this as they maintained their files of ideas for activities as well as for devices and programs that they might use. However, David and Evan also had imagined curriculum. David wished that he could use Instagram and expected that at a future time he would be able to do so. He also had books about writing instruction that he was actively reading during the study and in particular, he was imagining ways that he could use mentor texts and technologies to help students become better writers. Evan was also imagining curriculum around fewer tests and more time to work with students. He

was also planning new ways to use his relatively old DVD player and ways to help students to develop deeper understandings of *The Great Gatsby*.

These teachers did not want to be told exactly how to use the devices and programs, which makes sense based on their technological narratives of gradual discovery, but rather they wanted to have a many technologies at their disposal as possible. They then wanted to pull null or underdeveloped explicit curriculum into imagined curriculum and make it official with the help of their students. They also wanted to take implicit curriculum, such as in Molly's experience with her students' desire to learn about social justice on Martin Luther King, Jr.'s birthday, and confront it using technology as a tool for advocacy. What I observed was that technology can be utilized as part of a pedagogical approach. It is also part of the whole spectrum of tools and skills a teacher brings into a classroom. Therefore, teaching with technology was not separate from curriculum-making. It was woven through the entire fabric of the teachers' responsibilities. Surely, Molly was trying to teach students about argument and figurative language, which are responsibilities well within the scope of ELA teaching. However, she was also trying to generate engagement and build cooperation, which are general teaching responsibilities. The way in which she used technologies at her disposal allowed her to bring those two areas of stewardship together.

Policy Integration as Learning

The final part of my conceptual framework dealt with Spillane, Reiser, and Reimer's (2002) cognitively-based ideas about policy integration. This part of the framework enabled me to consider the experiences of these teachers that included agency and decision-making. The framework also enabled me to be more accepting of the ways in which teachers continue to learn about technologies and the policies that govern their use beyond their initial preparation besides

the professional development that they receive. Further, this framework suggested that administrators have a role in providing opportunities to learn to use technologies in ways that comply with policies at various levels. As Daniel articulated, the technologies were not that difficult to learn to use. The difficulty was learning how to use in the technologies in ways that would promote content learning and sustain relationships with students.

Similarly, Molly learned about Kahoot as a quiz-making tool but she did not use it the way that it was presented to her. She wanted to see what happened when she presented it to students and to her delight, they took it up and wrote the questions they wanted to use. In fact, she thought they might have overdone it. They wrote more questions than she would have had them do. In addition, it is worth noting that Molly did not use Kahoot initially with her ELA students in her regular classroom or in her credit recovery class. Instead, she started out by having a group of students who came in to her room for an elective as a testing ground to see how the program would work and then she took that information and used it with other students. In this case, the experience of learning to use technology was not solitary, but literally occurred right alongside her students in a lower stakes situation. This allowed her to put policy aside regarding mandated curriculum and other expectations for her teaching and really figure out how to use something with students.

Each of the participants addressed the level of administrator support that they received. Each indicated that their building administrators were helpful to them and that they were able to participate in the professional development that they wanted. For these teachers, the professional development that they desired was to attend conferences, particularly large national ones (e.g. National Council of Teachers of English- NCTE). Daniel described in particular detail the way in which his administrator supported him not only in giving him permission to attend NCTE, but

also by providing substantial funding. In his final interview, Daniel revealed that he had submitted to NCTE for this upcoming year and was hoping to attend again as a presenter. Karen also expressed interest in NCTE, but she instead opted instead to submit a proposal the Literacy Research Association (LRA). In the future, she hopes to attend NCTE.

While at these conferences, the participants hope to learn everything they could in an effort to generate a wide variety of ideas as they engage in their own curriculum-making. Daniel in particular talked extensively about how he heard a presenter discuss how to use Twitter and while he walked away from the presentation not intending in the slightest way to use Twitter in the way in which the presenter did, he still intended to use it for his own purposes. What he had to learn was not just how Twitter worked, but also how to acquire permission to use it, ask better prompts, determine the benefits in terms of classroom discussion quality, cognitively toggle between the Twitter feed and the face-to-face discussion in his class to include all students, and to work with parents who may misunderstand the purpose of the activity. While the NCTE currently has initiatives to support urban teachers in coming to their annual meeting, there is no such sponsorship for rural teachers. One aspect that this study helps to make clear is that rural teachers are just as deserving and just as interested in finding support to attend large conferences. Although Daniel was able to obtain funds from his principal, the other teachers only had funding support for local conferences.

Finally, many of Evan's experiences focused on what was troubling about using technology in high stakes situations. In particular, he expressed frustration with having the reading test he was trying to administer lock down everything he needed to run on the computer, resulting in a need to leave the test and return to it later. In this story, Evan demonstrated considerable cognitive work thinking through all the ways in which this delay impacted his work

with his students. The young people were frustrated, and it was difficult to coax them into doing something else with their time when they thought they were going to spend time taking a test. Evan was frustrated because he could not, think of ways to fix the issue. There was lost instructional time that day and there would be more lost instructional time when it was finally time to take the test again. Finally, there was the concern that the data generated would not be helpful because of the stressful circumstances under which the students completed the test, even though the data would be used for decision-making.

In order to cope with these circumstances, Evan developed a cautionary orientation toward technological use. This was not resistance to using it, nor was it resistance to policy; it was careful thought about what he was asked by administration to do with technology, why he was being asked to do it, and most importantly, how that request would impact students. While the research on teaching with technology, especially around ELA teacher's beliefs about technology, was fairly conclusive that teachers want to teach with technology when they perceive that doing so will help their students learn (e.g., McGrail, 2007). What is missing from those conclusions is the idea that "helping students learn" is mostly about advocacy. The teachers in this study knew that data generated would be used for determining different kinds of opportunities and life chances and they wanted to use technology most when that evidence would show learning so that students would have opportunity.

This orientation was also apparent in Molly's frustration regarding the reading program that she had to use. She knew that the company was gathering more data than they were making available to her. Molly wanted to use the additional data variables to help ensure the correct placement of her students. She also wanted to ensure that the data was not accessible to people for decision-making purposes who did not know her students. This orientation towards advocacy

may be linked to the fact that these are all experienced teachers. It is unclear whether a novice teacher would have the ability to generate these complex, nuanced understandings of how policies and mandates might affect the children with whom they work.

The concern about opportunity no doubt looks different in a rural school than a suburban or urban one. In rural/small town areas, all or almost all of the students want to leave after graduation, but the teachers are the ones who provide students the chance to actually do so (Pretin, Shafft, & Meece, 2014). Each of the teachers in this study have lived other places and then come into the town. They know what it means to go out and then choose to live a rural place rather just thinking one must stay where one was born. Further, Evan was the only participant who was married and had children. Molly never disclosed her marital status and Daniel and Karen were single, but they both wanted to be married and they were torn between leaving their teaching positions to find a spouse or remaining in a place they liked. Daniel resolved this by moving to a larger community and commuting 45 minutes to work so he could have a richer social life, but Karen was still evaluating her options. In the end, the desire for the master's degree among all of the participants was driven to some degree by wanting to be better teachers to give them options to leave the rural setting and/or provide an outlet for dealing with the inherent isolation where they lived. In addition, the desire for further education has identity implications for the participants in that they seemed to think of themselves as teachers who were also learners.

Finally, most policy considerations fail to account for community expectations, particularly from parents, as a kind of informal policy. This played out in Daniel's conflict with a parent over using Twitter. Evan also struggled with convincing parents that allowing their child to use his phone to keep track of his assignments would be helpful, even though they were trying

to discipline the young man for not working by taking the phone away. All of the teachers had the sense that technology, particularly computer time, can be regarded as a reward and that to sanction it as such in their classrooms was not considered good practice. Karen's description of the need to use the Canvas in order to make sure that parents knew their children were doing schoolwork with the iPads illustrated this orientation well. The teachers realized that many families held this view of technology as leisure or reward, and those informal family policies were also something that they had to take into account as they planned instruction. Especially in BYOD scenarios, teachers have to think about what happens when parents take away or limit device use and how that affects their ability to use the device for curriculum-making in their classrooms.

Interestingly enough, what was *not* a major policy consideration for the teachers in this study was the CCSS standards or whatever the state version of the core curriculum standards may have been. Karen talked about naming objectives for students in her Canvas courses and all the teachers discussed the importance of using technologies to meet educational goals, but there was very little discuss of the CCSS or state-sponsored derivatives unless I brought them up. When the topic was addressed the teachers talked about it with proficiency. They knew what they were, they could name standards, and they could talk about how their curriculum was attending to them, but they did not prioritize the standards in their curriculum-making. Instead, collaborating with students and attending to parental feedback dominated decision-making.

I wondered if this was a function of teaching in a rural community where teachers have more opportunities to meet with parents outside of school, where they teach the same young people in more than one class, and where the political current runs towards localized decision-making in schools. If these are reasons why the CCSS would not dominate curriculum-making, I

saw the ways in which that was an advantage because it gave teachers more ownership over the curriculum they made with students. It may, however, leave them vulnerable in other spaces when they are advocating for increased technologies from centralized entities. This calls into question the language of the standards the cultural capital of technological resource acquisition.

Returning to ELA Technology Teacher Standards

The final sections of this chapter, and indeed this dissertation, revisit the ELA technology teacher standards and comment on them based on the findings of this study and the discussion that I just completed where I articulated, to the best of my ability, the experience of several ELA teachers as they made curriculum with technology and the young people who live alongside them in classrooms. To reiterate, those recommendations from Pope & Golub (2000) were that teacher education programs:

1. Introduce and infuse technology in context;
2. Focus on the importance of technology as a literacy tool;
3. Model English language arts learning and teaching while infusing technology;
4. Evaluate critically when and how to use technology in English language arts classroom;
5. Provide a wide range of opportunities to use technology;
6. Examine and determine ways of analyzing, evaluating, and grading English language arts technology projects; and
7. Emphasize issues of equity and diversity. (p. 90)

In this study, the teachers generally adhered to these standards. They were able to infuse technologies in the context of classwork and they focused on the learning, particularly literacy learning. They offered a range of opportunities around equity and diversity through the texts they read with students and their propensity to involve students in determining what devices to use

and when. However, the teachers also went beyond those guidelines to provide opportunities for students to make decisions about when and how use technologies, and what devices to use. For Molly working in the BYOD scenario, she was faced with meeting those guidelines using mostly cellular phones, which is remarkable. However, it was also important that the students also work on more traditional assignments so that they could demonstrate competence in the assessments that would be used to evaluate their knowledge, which were not orientated towards using technology to demonstrate reading skills. Until the way in which students are judged and the way in which teachers are asked to teach come into greater alignment, teachers are going to have to attend to both the technological and the traditional ways of gauging literacies in their work with students.

Young and Bush (2004) provided recommendations for how technology should and should not be used. This list expands Pope and Golub's recommendations, but places a greater emphasis on agility when using technology as well as the infusion of ELA content (2000, p. 12). The list of "should" and "should not" appears as Table 4 below. The table represents recommendations by topic, names the recommendations and then offers an example of the way in which teachers in this study attended to these recommendations. The three topics are (1) authenticity—technology as a means for individual validation, (2) enhancement—technology as a means to improve extant practices, and (3) access—technology as a means of giving students chances to do more complex work with more resources.

Although I could have grouped this list according to the topics, I have left them in their original order to underscore the fact that these are my topic assignments, rather than Young & Bush's. Further, when reading the examples of these guidelines, it will become apparent that many of the activities actually address more than one standard.

Table 4

Technological Recommendations and Examples from Teachers

Topic	Technology Should …	Teacher Example
Authenticity	Work to validate individual students and empower their ability to achieve academic and "real world" success.	Evan's desire to teach his student how to use his phone to keep track of his class assignments.
Enhancement	Supplement and enhance instruction and, in effect, work almost transparently and seamlessly with content instruction.	Evan's use of Google Documents to help students write and edit essays.
Enhancement	Supplement and enhance traditional print/literature/media materials.	Daniel's use of Twitter for his *To Kill a Mockingbird* discussion.
Access	Provide additional resources and create wider access to them.	Molly's demonstration of Kahoot to students to make whatever kind of quizzes they wanted.
Authenticity	Expand students' means of expression and broaden their opportunities to reach meaningful and authentic audiences.	Molly's use of Padlet for discussion to share responses with classmates.
Access	Deepen students' understanding of complex issues and enhance their ability to make more global connections.	Daniel's guiding his students to work with memes to create meaning about class texts.
Enhancement	Expand and enhance the definitions and dimensions of literacy (critical, digital, media and otherwise).	Karen's coaching of students as they personalize their iPads and curate applications.

In this study, it was clear that these experienced teachers felt extremely comfortable with the content they were teaching. They also wanted to use technology to teach content to the young people in their classrooms. Advocating for technology they see value in, using technology themselves to learn new activities, and the negotiating with children, parents, and other stakeholders to obtain and maintain technology are important for curriculum-making as well.

Further, these recommendations are for ELA teachers alone. Guidance for administrators in supporting ELA teachers might also be helpful, especially support for choosing and attending to professional development, and support for working with parents on issues of double

controversy, such as the type of technology being used as well as the content with which the teacher is working. Finally, these teachers were all playing roles as leaders in their schools among their colleagues. While this may be a very positive situation, ensuring that teachers have access to additional support to maintain this role seems critical.

Returning to the ESSA

In addition to the recommendations from researchers regarding ELA teaching, the newly signed public legislation, Every Student Succeeds Act (Pub. L. No. 114-95, § 5701, 2015), is likely to have the greatest impact on use of technology in schools. This act articulates seven purposes. These purposes are known as Part G: Innovative technology expands children's horizons (I-Tech). The seven purposes are:

1. To improve educational achievement and readiness of all students;
2. To ensure that all students have access to rigorous learning experiences supported with technology;
3. To ensure that educators have knowledge and skills to use the technologies and the instructional configurations (e.g. fully online, blended) that support the technologies;
4. To ensure that school leaders have the knowledge and skills to support and implement these technologies and their instructional configurations in their schools and districts as well as support teacher collaboration around personalization;
5. To ensure that rural, remote, and underserved areas have the resources to take advantage of high quality digital learning experiences;
6. To ensure students have increased access to online coursework, especially dual enrollment, technical credentials, and other innovative coursework; and

7. To ensure that schools have the technological capacity, infrastructure, and technical support, to carry out digital learning.

In this study, participating ELA teachers all taught in rural or small town contexts. However, these rural contexts were far from monolithic. Karen's school had 700 students, while the other teachers worked in schools with 1,200 and 1,500 students. Karen, Daniel, and Molly all taught in communities with fairly stable populations while Evan's was experiencing explosive growth.

Each of these rural schools decided to use the resources they had for different technological initiatives, and each had a different demographic make-up. Karen's school was the smallest, every teacher and student had the same device, and the student population was fairly stable. She was able to make curriculum that built on students' other experiences. However, her students, particularly the seniors, developed fatigue with this consistency and pushed her to use other, less novel technologies. Daniel's school had a student laptop initiative but he could not rely on student familiarity because there were so many more students and so many more teachers and his population moved more often. Evan's school focused on giving teachers new laptops and better access to technology. His is a large school with a stable population that may not be considered a small town much longer. He built curriculum mostly on his own while supporting his colleague down the hall and engaging in other informal, but important collaborations. Finally, Molly worked in a medium-sized school with a stable population of racially diverse students. She saw the ways in which the BYOD policy solved discipline issues since teachers no longer had to confiscate these, but she was also keenly aware of the way in which BYOD polices meant that not every student would have a device and the only way some students were able to get access was through the credit recovery program she was teaching in where she could commandeer the computer lab for supplementary, but necessary instruction. While the intent of

the ESSA is likely a benevolent one to increase access to technology and online coursework in rural schools, the language of the document seems inadequate to capture the variability of resources, personnel, and community composition of rural communities.

Further, the ESSA also highlights the need to embrace personalized learning for all students and calls for the use of technologies to do this. However, the document does not support professional decision-making as an aspect of personalization. In fact, the only mention of teacher professional knowledge requires learning various technological configurations. This was instead of using the whole of their skills to make complex decisions about when and how to use technologies to afford the best possible chances for students to build and leverage an opportunity structure that suits their interests and needs.

What is concerning about these omissions is that schools, particularly rural schools, may be in a rush to buy more technologies to meet the demands of the ESSA without considering ways to support and sustain teachers. Before the ESSA was even signed into law, Spires, Oliver, and Corn (2011) warned about this potential oversight:

> Beyond professional development, school leaders in charge of purchase decisions for software and hardware must ensure that their new purchases can fundamentally change educational practices; otherwise, new technology will just require further training and time expense for teachers and students and replace existing practices with only more technologically advanced equivalents. (p. 68)

As we enter this new time of policy around the ESSA and grapple with its implementation, the scholarly community might do well to bring attention to the need for support for teachers. But perhaps the message from the early 2000s that, “teachers do not know how to use technologies and they only want to learn if they see the benefit for students. Let’s give them more professional

development" can shift or be updated to say: "Teachers are working hard to use technologies to advocate for children. Let's listen to them, and give them what they tell us that they need."

Finally, this work has implications for the initial preparation of teachers, although the study explored how *experienced teachers* used technologies for specific ELA subject matter. Specifically, it suggests that initial preparation needs to more fully integrate technology use, content knowledge, and methods and strategies. As it is presently, ELA teachers are prepared separately for these responsibilities. All of these teachers wish that they had better access to models of technological integration, particularly with regards to devices. While it is true that there might be some concerns about transfer of technological knowledge, skills, and dispositions from teacher candidacy to practicing teacher work, it should be noted that these teachers all drew on technological understandings from childhood and adolescence. Certainly, claims to transfer and generalization are difficult to make and surely not everything a teacher learns emerges in their teaching immediately, but this study showed that certainly teachers do not just start over learning technologies when they enter their own classroom for the first time.

In addition, this study framed classroom activities as curriculum in the broad sense, rather than the narrower sense of a list of stuff (Ladson-Billings, 2016). In order to conceive of technology as an integrated complex process that occurs in cooperation with students over time, a broader view is needed. Although they usually enter schools of education with classroom experience from a student perspective, they may not always see curriculum as more than a list. Studies like this one offer concrete examples of practice that can be shared with and debated by prospective teachers as they come to understand curriculum as complex activity.

Finally, when I conducted the literature review and looked at policies such as the CCSS and ESSA, I was dismayed that most of the distinction made between rural /non-rural teachers

were only made to assert resource deficits in rural areas. This is unfortunate because this study actually showed that rural teachers are resource*ful* in the ways in which they made use of old devices, collaborated with students to determine class activities, and used technologies to foster relationships between class members who actually represented considerable racial/ethnic and socioeconomic diversity than people would realize without coming into contact with rural schools or the report of a study like this one.

Giving prospective teachers practicum and student teaching in rural settings as well as encouraging them to teach in such places would help benefit rural places where it is difficult to find teachers. In truth, the teachers in this study *are* giving up certain social opportunities and the anonymity of larger town/urban life. But what they receive in return is greater autonomy when it comes to policies like the CCSS, a stable network of colleagues with whom they can confer, and the chance to learn a new story about living and learning with technology on an educational landscape. Each of these teachers made it past the indication or early years of teaching without leaving. Each of these teachers had personal and professional goals about which they were excited. None of these teachers expressed being harried or frustrated. That has to count for something.

Final Thoughts

In many academic circles, a dissertation would not be complete without some suggestions about what future research might look like, especially after I just spent a considerable amount of time offering practical and policy implications. In order to meet this expectation, I have several comments. The first are related to the work that needs to be done on the changing nature of subject matter and content knowledge. The teachers in this study were raised in a time without nearly ubiquitous access to technology and so they are operating in their expertise as people who

are primarily subject matter experts who are developing practices—even types of technological literacies—for the benefit of their students. In a few years, teachers who learned this way will no longer be in the pipeline. We can question whether or not this means that ELA teachers will have more luck with *techne* or less as per Pendlebury's (1995) definition.

Instead, English education programs and teacher education programs in general will have teacher candidates who do not have typing skills to lean on, who have always been able to use technology in school, and who were even provided these devices. The question then becomes whether or not programs are doing anything to prepare for this eventuality. Also, technology standards are written as supplements to other standards or with brief nods in documents like the Common Core Curriculum Standards (National Governors Association Center for Best Practices, Council of Chief State School Officers, 2010). s technologies become more commonplace, these standards may change depending on need. People may interpret them differently, especially in the cases of schools and students.

In addition, the teachers in this study mostly enjoyed learning with and from the students how and when to use the technologies. They also observed that students do not want to use devices all the time to learn and that they need help in maintaining their engagement even when they generally like the task or they like using the device. I have also noticed this in some of my other research, where I asked a seventh grade boy what the best thing was about his blended (partly online, partly face-to-face) class. With enthusiasm, he said "We *get* to use the computer *every day*!" Moments later, I asked him what the biggest challenge was in the class, to which he replied, "We *have* to use the computers *every day.*" Confronting these issues of student disposition to use technologies, especially technologies for learning ELA content is an important consideration for future research.

The second set of comments is about the fact that technological research in general is a moving target. The rapidity with which technology changes is staggering. In particular, Matthias (2004) questioned whether the notion that technology is only as good as the person who uses it is still valid:

> Presently there are machines in development or already in use which are able to decide on a course of action and to act without human intervention. The rules by which they act are not fixed during the production process, but can be changed during the operation of the machine, by the machine itself. This is what we call machine learning. Traditionally we hold either the operator/manufacturer of the machine responsible for the consequences of its operation or "nobody" (in cases, where no personal fault can be identified). Now it can be shown that there is an increasing class of machine actions, where the traditional ways of responsibility ascription are not compatible with our sense of justice and the moral framework of society because nobody has enough control over the machine's actions to be able to assume responsibility for them. (p. 177)

These new understandings about machines and technology breathe new life into Pendlebury's (1995) ideas about luck in teaching since the traditional reversals of fortune that govern human relationships and interactions in educational settings are now subject to intervention from machines in unprecedented ways.

If it is the fate of humanity that machines and their concomitant technologies will play an even greater role in our lives, then it seems likely that there will also be a need to develop continual understandings about how teachers respond to these machines, as well as *how the machines respond to them* in the curriculum-making process. While policymakers and other stakeholders have increasingly called into question teachers' expertise, the machine is rapidly

becoming a new competitor. The question for teacher education programs of the future is probably not "what do teachers need to know about technology?" but "what does technology need to know about teachers?" As I demonstrated in this work, it is teachers who understand social justice, literacy, curriculum, and their own selves that are the best hope for keeping technology from being used to punish and diminish opportunity for children. Recently, Gunkel (2016) reminded us of the moral complexity involved in using technology for decision-making processes:

> [H]ow we decide to respond to the opportunities and challenges of this machine question will have a profound effect on the way we conceptualize our place in the world, who we decide to include in the community of moral subjects, and what we exclude from such consideration and why. But no matter how it is decided, it is a decision—quite literally a cut that institutes difference and makes a difference. We are, therefore, responsible both for deciding who or even what is a moral subject and, in the process, for determining the very configuration and proper limits of moral responsibility in the digital nexus (p. 85).

With these understandings, there should be a greater need to consider if these changes happen, will teachers be moral subjects? What if the only way to maintain students' status as moral subjects it to give them access to living, breathing teachers, who care about them and who have subject matter expertise? Who will prepare those teachers? What will they need to know? Let us embrace the challenge of gaining those understandings.

References

Abrevaya, S. (2010). *Statement on National Governor's Association and State Education Chiefs Common Core standards*. Retrieved from United States Department of Education website: http://www.ed.gov/news/press-releases/statement-national-governors-association-and-state-education-chiefs-common-core-standards.

Ajayi, L. (2016). High school teachers' perspectives on the English language arts Common Core State Standards: an exploratory study. *Educational Research for Policy and Practice*, *15*(1), 1-25.

Appiah, K. A. (2010). *Cosmopolitanism: Ethics in a world of strangers*. New York, NY: WW Norton & Company.

Apple, M. (2004). *Ideology and curriculum.* London, England: Routledge & Keegan Publishers.

Barad, K. (2007). *Meeting the universe halfway.* Durham, NC: Duke University Press.

Banks, J. A. (2003). Teaching literacy for social justice and global citizenship. *Language Arts*, *81*(1), 18-19.

Barton, E. (1993, September). *Computers and literacy: Access and equity*. Support for the Learning and Teaching of English (SLATE) starter sheet. Urbana, IL: National Council of Teachers of English.

Bartos, M. (1990). Performance and performativity in education. *Journal of Sociology*, *26*(3), 351-367.

Bauer, J., & Kenton, J. (2005). Toward technology integration in the schools: Why it isn't happening. *Journal of Technology and Teacher Education*, *13*(4), 519-546.

Beach, R. W. (2011). Issues in analyzing alignment of language arts Common Core standards with state standards. *Educational Researcher*, *40*(4), 179-182.

Becker, H. J. (2000). Who's wired and who's not: Children's access to and use of computer technology. *The Future of Children*, 10(2), 44-75.

Britzman, D. P. (1991). Decentering discourses in teacher education: Or, the unleashing of unpopular things. *Journal of Education*, 173(3), 60-80.

Bunch, G. C., Kibler, A., & Pimentel, S. (2013). *Realizing opportunities for English learners in the common core English language arts and disciplinary literacy standards*. Presented at the annual meeting of the American Educational Research Association. San Francisco, CA.

Bush, J. (2003). Beyond technical competence: Technologies in English language arts teacher education (A response to Pope and Golub). *Contemporary Issues in Technology and Teacher Education, 2*(4), 467-471.

Campos-Castillo, C. (2014). Revisiting the first-level digital divide in the United States: Gender and race/ethnicity patterns, 2007–2012. *Social Science Computer Review, 33*(4), 423-439.

Chan, E., Flanagan, A., Hermann, R., & Barnes, N. (2015). Tentative steps into the space of another: Teacher challenges of crossing cultures to build bridges with students. *Curriculum and Teaching Dialogue*, *17*(1/2), 11-17.

Chen, W. (2013). The implications of social capital for the digital divides in America. *The Information Society*, *29*(1), 13-25.

Clandinin, D. J. (2016, April). *Curriculum and narrative research*. Presented at the Annual Meeting of the American Educational Research Association. Washington, DC.

Clandinin, D. J. (1989). Developing rhythm in teaching: The narrative study of a beginning Teacher's personal practical knowledge of classrooms. *Curriculum Inquiry*, *19*(2), 121-141.

Clandinin, D. J. (1985). Personal practical knowledge: A study of teachers' classroom images. *Curriculum inquiry*, *15*(4), 361-385.

Clandinin, D. J., & Connelly, F. M. (1990). Stories of experience and narrative inquiry. *Educational Researcher, 19*(5), 2-14.

Clandinin, D. J., & Connelly, F. M. (1999). *Shaping a professional identity: Stories of educational practice.* New York, NY: Teachers College Press.

Clandinin, D. J., & Connelly, F. M. (1986). Rhythms in teaching: The narrative study of teachers' personal practical knowledge of classrooms. *Teaching and Teacher Education*, *2*(4), 377-387.

Clandinin, D. J., & Connelly, F. M. (2000). *Narrative inquiry: Experience and story in qualitative research.* San Francisco, CA: Jossey-Bass.

Connelly, F. M., & Clandinin, D. J. (1988). *Teachers as Curriculum Planners. Narratives of Experience*. New York, NY: Teachers College Press.

Coiro, J., Knobel, M., Lankshear, C., & Leu, D. J. (Eds.). (2014). *Handbook of research on new literacies*. New York, NY: Routledge.

Cope, B., & Kalantzis, M. (2000). *Multiliteracies*. New York, NY: Macmillan.

Corbett, M., Vibert, A., & Green, M. (2016). *Improvising the curriculum: Negotiating risky literacies in cautious schools*. New York, NY: Routledge.

Craig, C. J. (2013). Coming to know in the 'eye of the storm': A beginning teacher's introduction to different versions of teacher community. *Teaching and Teacher Education*, *29*, 25-38.

Cremin, L. (1971). Curriculum-making in the United States. *The Teachers College Record*, *73*(2), 207-220.

Cuban, L. (1986). *Teachers and machines: The classroom use of technology since 1920*. New York, NY: Teachers College Press.

Cuban, L. (1993). *How teachers taught: Constancy and change in American classrooms, 1890-1990*. New York, NY: Teachers College Press.

Cuban, L. (2009). *Oversold and underused: Computers in the classroom*. Cambridge, MA: Harvard University Press.

Cuban, L., Kirkpatrick, H., & Peck, C. (2001). High access and low use of technologies in high school classrooms: Explaining an apparent paradox. *American Educational Research Journal*, *38*(4), 813-834.

Culp, K. M., Honey, M., & Mandinach, E. (2005). A retrospective on twenty years of educational technology policy. *Journal of Educational Computing Research, 32*(3), 279–307.

Cushman, E., Juzwick, M.M., McKenzie, C., & Smith, K. G. (2016). Spatial and material relationships in teaching and learning English. *Research in the Teaching of English, 50*(3), 257-262.

Danielewicz, J. (2001). *Teaching selves. Identity, pedagogy, and teacher education.* Albany, NY: State University of New York Press.

Dewey, J. (1938). *Experience and education.* New York, NY: Kappa Delta Pi Publications.

Dilthey, W. (1962). *Pattern and meaning in history: Thoughts on history and society.* New York: Harper & Row.

Doucet, A., & Mauthner, N. S. (2008). What can be known and how? Narrated subjects and the Listening Guide. *Qualitative Research*, *8*(3), 399-409.

Doyle, W., & Sanford, J. (1985). *Managing student work in secondary classrooms: Practical lessons from a study of classroom tasks*. Report by the Research and Development Center for Teacher Education, University of Texas at Austin.

Dupré, L. (1993). *Passage to modernity: An essay in the hermeneutics of nature and culture.* New Haven, CT: Yale University Press.

Eisner, E. (1993). Forms of understanding and the future of educational research. *Educational Researcher, 22*(7), 5-11.

Elbaz-Luwisch, F., & Orland-Barak, L. (2013). From teacher knowledge to teacher learning in community: Transformations of theory and practice. *From teacher thinking to teachers and teaching: The evolution of a research community*, *19*, 97-113.

Every Student Succeeds Act (ESSA), 20 U.S.C. § 6301 (2015).

Entwistle, N. J. (2013). *Styles of learning and teaching: An integrated outline of educational psychology for students, teachers and lecturers*. New York, NY: Routledge.

Erikson, E. H. (1994). *Identity: Youth and crisis*. New York, NY: WW Norton & Company.

Erikson, E. (1958). *Young man Luther: A study in psychoanalysis and history.* New York, NY: W.W. Norton.

Everett, D. L. (2012). *Language: The cultural tool*. New York, NY: Vintage.

Finlay, L. (2009). Debating phenomenological methods and practices. *Phenomenology & Practice,* 3(1), 6-25.

Flanagan, S., & Shoffner, M. (2013). Teaching with(out) technology: Secondary English teachers and classroom technology use. *Contemporary Issues in Technology and Teacher Education*, *13*(3), 242-261.

Freire, P. (1970). The adult literacy process as cultural action for freedom. *Harvard Educational Review*, *40*(2), 205-225.

Freire, P., & Macedo, D. (1987). *Reading the word and the world*. Westport, CT: Bergin & Garvey.

Gee, J.P. (2007). *Social linguistics and literacies: Ideology in discourses* (3rd ed.). New York, NY: Taylor and Francis.

Geertz, C. (1988). *Works and lives: The anthropologist as author*. Stanford, CA: Stanford University Press.

Gilligan, C., Spencer, R., Weinberg, M. K., & Bertsch, T. (2003). On the listening guide: A voice centered relational method. In P. M. Camic, J. E. Rhodes, and L. Yardley (Eds.), 157-172. *Qualitative research in psychology: Expanding perspectives in methodology and design.* Washington, DC: American Psychological Association.

Giorgi, A. (2008). Concerning a serious misunderstanding of the essence of the phenomenological method in psychology. *Journal of Phenomenological Psychology*, *39*, 33-58.

Giroux, H. A. (1987). Citizenship, public philosophy, and the struggle for democracy. *Educational Theory*, *37*(2), 103-120.

Giroux, H. A. (2006). *America on the edge: Henry Giroux on politics, culture, and education*. New York, NY: Palgrave Macmillan.

Golonka, E. M., Bowles, A. R., Frank, V. M., Richardson, D. L., & Freynik, S. (2014). Technologies for foreign language learning: a review of technology types and their effectiveness. *Computer Assisted Language Learning*, *27*(1), 70-105.

Green, M. (1982). Public education and the public space. *Educational Researcher, 11*(6), 4-9.

Gunkel, D. (2016). Responsible machines: The opportunities and challenges of artificial autonomous agents. In R. Forshay (Ed.) *The digital nexus: Identity, agency, and political engagement.* Athabasca, Canada: Athabasca University Press.

Guzzetti, B. J., & Gamboa, M. (2004). Zines for social justice: Adolescent girls writing on their own. *Reading Research Quarterly*, *39*(4), 408-436.

Halling, S. (2008). *Intimacy, transcendence, and psychology: Closeness and openness in everyday life*. New York, NY: Palgrave Macmillan.

Halling, S., Leifer, M., & Rowe, J.O. (2006). Emergence of the dialogical approach: Forgiving another. In C. T. Fischer (Ed.), *Qualitative Research Methods for Psychology: Introduction through Empirical Studies* (pp. 247-278). New York, NY: Academic Press.

Halverson, L. R., Graham, C. R., Spring, K. J., & Drysdale, J. S. (2012). An analysis of high impact scholarship and publication trends in blended learning. *Distance Education*, *33*(3), 381- 413.

Harris, D. J., Simi, P., & Ligon, G. (2016). Reporting practices of journal articles that include interviews with extremists. *Studies in Conflict & Terrorism*, *39*(7-8), 602-616.

Heath, S. B. (1980). The functions and uses of literacy. *Journal of Communication*, *30*(1), 123-133.

Hekman, S. (2010). *The material of knowledge: Feminist disclosures*. Bloomington, IN: Indiana University Press.

Hiebert, E. H., & Mesmer, H. A. E. (2013). Upping the ante of text complexity in the Common Core State Standards examining its potential impact on young readers. *Educational Researcher*, *42*(1), 44-51.

Hinchman, K. A., Alvermann, D. E., Boyd, F. B., Brozo, W. G., & Vacca, R. T. (2003). Supporting older students' in-and out-of-school literacies. *Journal of Adolescent & Adult Literacy*, 304-310.

Hindman, D. B. (2000). The rural-urban digital divide. *Journalism & Mass Communication Quarterly*, *77*(3), 549-560.

Huber, J., Murphy, S. & Clandinin, D.J. (2011). *Familial curriculum making worlds: Children's lives in motion*. Bingley, UK: Emerald Press.

Hudson, H. E. (2013). *From rural village to global village: Telecommunications for development* in the information age. London, England: Routledge.

Huffaker, D. (2004). The educated blogger: Using weblogs to promote literacy in the classroom. *First Monday*, *9*(6). Retrieved from: http://firstmonday.org/ojs/index.php/fm/article/viewArticle/1156/1076.

Hughes, J. (2005). The Role of teacher knowledge and learning experiences in forming technology-integrated pedagogy. *Journal of Technology and Teacher Education, 13*(2), 277-302.

Hull, G., & Schultz, K. (2001). Literacy and learning out of school: A review of theory and research. *Review of Educational Research*, *71*(4), 575-611.

Husserl, E. (1970). *The idea of phenomenology.* The Hague, Netherlands: Martinus Nijhoff.

Jackson, P. (1968). *Life in classrooms*. New York, NY: Holt, Reinhart, and Winston.

Jakubik, M. (2007). Exploring the knowledge landscape: four emerging views of knowledge. *Journal of Knowledge Management*, *11*(4), 6-19.

Jenkins, H., Ford, S., & Green, J. (2013). *Spreadable media: Creating value and meaning in a networked culture*. New York, NY: New York University Press.

Jewitt, C. & Kress, G. R. (Eds.). (2003). *Multimodal literacy*. New York, NY: Peter Lang.

Johnson, J.J., Showalter, D., Klein, R., & Lester, C. (2014). *Why rural matters: The condition of rural education in the 50 states.* Washington, DC: The Rural School Community Trust.

Judson, E. (2006). How teachers integrate technology and their beliefs about learning: Is there a connection? *Journal of Technology and Teacher Education*, *14*(3), 581-597.

Kaestle, C. F. (1985). The history of literacy and the history of readers. *Review of Research in Education*, *12*, 11-53.

Kajder, S., Bull, G., & Van Noy, E. (2004). A space for. *Learning & Leading with Technology*, *31*(6), 32-35.

Kalantzis, M., & Cope, B. (2008). Digital communications, multimodality and diversity: Towards a pedagogy of multiliteracies. *Scientia Paedagogica Experimentalis*, *45*(1), 15.

Keengwe, J., Schnellert, G., & Mills, C. (2012). Laptop initiative: Impact on instructional technology integration and student learning. *Education and Information Technologies*, *17*(2), 137-146.

Kennedy, M. J., & Ihle, F. M. (2012). The Old Man and the Sea: Navigating the gulf between special educators and the content area classroom. *Learning Disabilities Research & Practice*, *27*(1), 44-54.

Kist, W. (2000). Beginning to create the new literacy classroom: What does the new literacy look like? *Journal of Adolescent & Adult Literacy*, 43(8), 710-718.

Kress, G. (2011). 10 Discourse Analysis and Education: A Multimodal Social Semiotic Approach. In R. Rogers (Ed.) *An introduction to critical discourse analysis.* (pp. 205-226). New York, NY: Taylor and Francis.

Kress, G. (2009). *Multimodality: A social semiotic approach to contemporary communication*. New York, NY: Routledge.

Kumashiro, K. K. (2015). *Against common sense: Teaching and learning toward social justice*. New York, NY: Routledge.

Kumashiro, K. K. (2012). *Bad teacher! How blaming teachers distorts the bigger picture*. New York, NY: Teachers College Press.

Kvale, S. (1996). *InterViews: An introduction to qualitative research interviewing*. Thousand Oaks, CA: Sage.

Ladson-Billings, G. (2016). And then there was this thing called the curriculum: Organization, imagination, and mind. *Educational Researcher, 45*(2), 100-104.

Lankshear, C., & Knobel, M. (2003). New technologies in early childhood literacy research: A review of research. *Journal of Early Childhood Literacy*, *3*(1), 59-82.

Lannin, A., Kohnen, A., Kline, K., Singer, N., Stokes, V., & Knowles, A. (2014). From English language arts teacher to literacy expert: Reimagining our roles. *English Journal*, *104*(2), 54-60.

Lichter, D. T. (2012). Immigration and the new racial diversity in rural America. *Rural Sociology*, *77*(1), 3-35.

Luke, A. (2012). Critical literacy: Foundational notes. *Theory into Practice*, *51*(1), 4-11.

Luke, A. (2004). On the material consequences of literacy. *Language and Education*, *18*(4), 331-335.

Luke, A. (1998). Getting over method: Literacy teaching as work in "new times." *Language Arts*, 75(4), 305-313.

Lyotard, J. F. (1984). *The postmodern condition: A report on knowledge*. Minneapolis, MN: University of Minnesota Press.

Lyotard, J. F. (1993). *Libidinal economy.* G. Hamilton Grant (trans.) Bloomington, IN: Indiana University Press.

Malaguzzi, L. (1994). Your image of the child: Where teaching begins. *Child Care Information Exchange, 96*: 52-61.

Marcos, J. J. M., & Tillema, H. (2006). Studying studies on teacher reflection and action: An appraisal of research contributions. *Educational Research Review*, *1*(2), 112-132.

Mathis, W. J. (2010). The "Common Core" Standards Initiative: An effective reform tool. Boulder and Tempe: Education and the Public Interest Center & Education Policy Research Unit. Retrieved from: http://epicpolicy.org/publication/common-core-standards.

Matthias, A. (2004). The responsibility gap: Ascribing responsibility for the actions of learning automata. *Ethics and Information Technology, 6*, 175-183.

Maxwell, J. A. (2006). Literature reviews of, and for, educational research: A commentary on Boote and Beile's "Scholars before Researchers". *Educational Researcher*, 35(9), 28-31.

McAdams, D. P. (2006). The redemptive self: Generativity and the stories Americans live by. *Research in Human Development*, *3*(2-3), 81-100.

McAdams, D. P. (1993). *The stories we live by: Personal myths and the making of the self*. New York, NY: Guilford Press.

McBee-Orzulak, M. J. M., Lillge, D. M., Engel, S. J., & Haviland, V. S. (2014). Contemplating trust in times of uncertainty: Uniting practice and interactional awareness to address ethical dilemmas in English teacher education. *English Education*, *47*(1), 80.

McGrail, E. (2007). Laptop technology and pedagogy in the English language arts classroom. *Journal of Technology and Teacher Education*, *15*(1), 59-85.

McGrail, E. (2005). Teachers, technology, and change: English teachers' perspectives. *Journal of Technology and Teacher Education*, *13*(1), 5-24.

McNabb, M. L. (2005). Raising the bar on technology research in English language arts. *Journal of Research on Technology in Education*, *38*(1), 113-119.

Merkley, D. J., Schmidt, D. A., & Allen, G. (2001). Addressing the English language arts technology standard in a secondary reading methodology course. *Journal of Adolescent & Adult Literacy*, *45*(3), 220-231.

Mills, K. A. (2010). A review of the "digital turn" in the new literacy studies. *Review of Educational Research*, *80*(2), 246-271.

Mishler, E. (1990). Validation in inquiry-guided research: The role of exemplars in narrative research. *Harvard Educational Review*, *60*(10), 415-442.

Mora Velez, R. A. (2010). *An analysis of the literacy beliefs and practices of faculty and graduates from a preservice English teacher education program* (Doctoral dissertation, University of Illinois at Urbana-Champaign).

Morrell, E. (2008). *Critical literacy and urban youth: Pedagogies of access, dissent, and liberation*. New York, NY: Routledge.

Morse, J. M., Barrett, M., Mayan, M., Olson, K., & Spiers, J. (2008). Verification strategies for establishing reliability and validity in qualitative research. *International Journal of Qualitative Methods*, *1*(2), 13-22.

National Education Association – American Federation of Teachers. (2008). *Access, adequacy, and equity in education technology: Results of a survey of America's teachers and support professionals on technology in public schools and classrooms.* Washington DC: National Education Association – American Federation of Teachers. Retrieved from: www.nea.org/research/images/08gainsandgapsedtech.pdf.

National Governors Association Center for Best Practices, Council of Chief State School Officers (2010). *Common Core State Standards*. National Governors Association Center for Best Practices, Council of Chief State School Officers, Washington D.C.

Newell, G. E., VanDerHeide, J., & Olsen, A. W. (2014). High school English language arts teachers' argumentative epistemologies for teaching writing. *Research in the Teaching of English*, *49*(2), 95-119.

Noddings, N. (2013). *Education and democracy in the 21st century*. New York, NY: Teachers College Press.

Noddings, N. (1996). Rethinking the benefits of college bound curriculum. *Phi Delta Kappan, 78* (4), 285-290.

O'Dwyer, L. M., Russell, M., Bebell, D., & Tucker-Seeley, K. R. (2005). Examining the relationship between home and school computer use and students' English/Language Arts test scores. *Journal of Technology, Learning, and Assessment*, *3*(3). Retrieved from: http://files.eric.ed.gov/fulltext/EJ848513.pdf.

Orr, J. E. (1990). Sharing knowledge, celebrating identity: Community memory in a service Culture. In D. Middleton and D. Edwards (Eds.) *Collective remembering* (p. 169-189). London: Sage.

Pajak, E. F. (2012). Willard Waller's Sociology of teaching reconsidered "What does teaching do to teachers?" *American Educational Research Journal*, *49*(6), 1182-1213.

Pendlebury, S. (1995). Luck, responsibility, and excellence in teaching. In J. W. Garrison (Ed.). *The educational conversation: closing the gap* (pp. 11-28) Albany, NY: SUNY Press.

Phillips, V., & Wong, C. (2010). Tying together the common core of standards, instruction, and assessments. *Phi Delta Kappan*, *91*(5), 37-42.

Pickering, A. (1995). *The mangle of practice: Time, agency, and science*. Chicago, IL: Chicago University Press.

Plummer, P. (1995) *Telling sexual stories.* New York, NY: Routledge.

Polkinghorne, D. (2005). Language and meaning: Data collection in qualitative research. *Journal of Counseling Psychology, 52*(2), 137-145.

Pope, C. A., & Golub, J. N. (2000). Preparing tomorrow's English language arts teachers today: Principles and practices for infusing technology. *Contemporary Issues in Technology and Teacher Education*, *1*(1), 89-97.

Porter, A., McMaken, J., Hwang, J., & Yang, R. (2011). Assessing the Common Core Standards: Opportunities for improving measures of instruction. *Educational Researcher*, *40*(4), 186-188.

Porter, E. J., & Cohen, M. (2013). Phenomenology. In A. Trainor and E. Graue (Eds.) *Reviewing qualitative research* (pp. 66-81) New York, NY: Routledge.

Rainey, E. C. (2015). *What does it mean to read literary works? The literacy practices, epistemologies, and instructional approaches of literary scholars and high school English language arts teachers* (Doctoral dissertation, University of Michigan).

Rice, M. (2016). Finding space for transfer of writing in Common Core curriculum standards. *Journal of Teaching Writing 30*(2), 47-71.

Rice, M. (2014). Balancing literacy with other curricular demands: An autobiographical account. *Journal of Balanced Reading Instruction, 2*9(1), 1-9.

Rice, M. (2012). Filtering Shakespeare through curricular commonplaces. *English Teaching: Practice and Critique, 11(3)*, 98-107.

Rice, M. (2011). *Adolescent boys' literate identity*. Bingley, UK: Emerald Press.

Rice, M. (2010). *Narrating the literacies of five adolescent boys on the school landscape*. MA thesis. Brigham Young University.

Rice, M. & Mellard, D. (2015, April). *"And I was just kicking and screaming!": Sustaining imagined and advocated curriculum*. Presentation at the annual meeting of the American Educational Research Association. Chicago, IL.

Rogers, R. (2013). Critical discourse analysis. In A. Trainor and E. Graue (Eds.) *Reviewing qualitative research* (pp. 66-81) New York, NY: Routledge.

Rugg, H. (1921). Needed changes in the committee procedure of reconstructing social studies. *The Elementary School Journal, 21*(9), 688-702.

Russell, M., Bebell, D., O'Dwyer, L., & O'Connor, K. (2003). Examining teacher technology use implications for preservice and inservice teacher preparation. *Journal of Teacher Education*, *54*(4), 297-310.

Schappe, J. F. (2015). "Looking Back I Can See" Literate tensions and changes: A veteran teacher's cross-contextual analysis of his literate life. *English Education*, *47*(3), 204-244.

Schaefer, L., Long, J. S., & Clandinin, D. J. (2012). Questioning the research on early career teacher attrition and retention. *Alberta Journal of Educational Research*, *58*(1), 106-121.

Schwab, J. J. (1978). The practical: Translation into curriculum. In I. Westbury & N. J. Wilcox (Eds.), *Science, curriculum, and liberal education: Selected essays* (pp. 365-383). Chicago, IL: University of Chicago Press.

Schulman, L. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher, 15*(2), 4-14.

Seidman, I. (2012). *Interviewing as qualitative research: a guide for researchers in education and the social sciences*. New York, NY: Teachers College Press.

Selfe, C. L. (1989). *Computers in English and the language arts: The challenge of teacher education*. Urbana, IL: National Council of Teachers of English.

Selwyn, N. (1999). Student's attitudes towards computers in sixteen to nineteen education. *Education and Information Technologies*, *4*(2), 129-141.

Shoffner, M. (2009a). "Because I know how to use it": Integrating Technology into preservice English teacher reflective practice. *Contemporary issues in technology and teacher education*, *9*(4), 371-391.

Shoffner, M. (2009b). Personal attitudes and technology: Implications for preservice teacher reflective practice. *Teacher Education Quarterly*, *36*(2), 143-161.

Slaughter, M. M. (1985). Literacy and society. *International Journal of the Sociology of Language*, *1985*(56), 113-139.

Sleeter, C. E., La Vonne, I. N., & Kumashiro, K. K. (Eds.). (2014). *Diversifying the teacher workforce: Preparing and retaining highly effective teachers*. New York, NY: Routledge.

Spillane, J. (2002). Local theories of teacher change: The pedagogy of district policies and programs. *The Teachers College Record*, *104*(3), 377-420.

Spillane, J. P., Reiser, B. J., & Reimer, T. (2002). Policy implementation and cognition: Reframing and refocusing implementation research. *Review of Educational Research*, *72*(3), 387-431.

Spillane, J. P., & Thompson, C. L. (1997). Reconstructing conceptions of local capacity: The local education agency's capacity for ambitious instructional reform. *Educational Evaluation and Policy Analysis*, *19*(2), 185-203.

Spires, H. A., Oliver, K., & Corn, J. (2011). The new learning ecology of one-to-one computing environments: Preparing teachers for shifting dynamics and relationships. *Journal of Digital Learning in Teacher Education*, *28*(2), 63-72.

Stern, D. (2004). *The present moment in psychotherapy and real life*. New York, NY: W.W. Norton and Company.

Street, B. (1995). *Social literacies: Critical approaches to literacy in education, development and ethnography*. New York, NY: Longman.

Street, B. V. (1984). *Literacy in theory and practice* (Vol. 9). Cambridge, UK: Cambridge University Press.

Sundeen, T. H., & Sundeen, D. M. (2013). Instructional technology for rural schools: Access and acquisition. *Rural Special Education Quarterly*, *32*(2), 8-14.

Swenson, J., Young, C. A., McGrail, E., Rozema, R., & Whitin, P. (2006). Extending the conversation: New technologies, new literacies, and English education. *English Education*, *38*(4), 351-369.

Tyack, D. B., & Hansot, E. (1982). *Managers of virtue: Public school leadership in America, 1820-1980*. New York, NY: Basic Books

U.S. Department of Education. (2010). Transforming American education: Learning powered by technology. Washington, DC: Office of Educational Technology, U.S. Department of Education. Retrieved from: http://www.ed.gov/technology/netp-2010.

van Gog, T., & Paas, F. (2008). Instructional efficiency: Revisiting the original construct in educational research. *Educational Psychologist*, *43*(1), 16-26.

van Manen, M. (1990). *Researching lived experience: Human science for an action sensitive pedagogy*. New York, NY: State University of New York.

Wang, P. Y. (2013). Examining the digital divide between rural and urban schools: Technology availability, teachers' integration level and students' perception. *Journal of Curriculum and Teaching*, *2*(2), 127-139.

Warschauer, M. (2000). Technology & school reform: a view from both sides of the tracks. *education policy analysis archives*, *8*, 4.

Wexler, D. H. (2000). Integrating computer technology: Blurring the roles of teachers, students, and experts. *Computing and Educational Studies,* 31(1), 33-42.

Williams, D. D. (2013, October). *Themes from case studies of evaluators' lives*. Presented at the American Evaluation Association Education conference, Washington D.C.

Williams, D. D. (2011). *Qualitative inquiry in daily life: Exploring qualitative thought*. Retrieved from: https://qualitativeinquirydailylife.wordpress.com/.

Willis, P. (2001). The "things themselves" in phenomenology. *Indo-Pacific Journal of Phenomenology*, *1*(1), 1-12.

Young, C. A., & Bush, J. (2004). Teaching the English language arts with technology: A critical approach and pedagogical framework. *Contemporary Issues in Technology and Teacher Education*, *4*(1), 1-22.

Zammito, J. (1996). *Historicism, metahistory, and historical practice: The historicization of the* historical subject. Retrieved from: http://home.cc.umanitoba.ca/~sprague/zammito.htm.

Zhang, D., Zhao, J. L., Zhou, L., & Nunamaker, J. F., Jr. (2004). Can e-learning replace classroom learning? *Communications of the ACM*, *47*(5), 75-79.