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Investigating Teacher Learning and Change in a Professional Learning Community: Integrating ELA and Social Studies Curriculum

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INVESTIGATING TEACHER LEARNING AND CHANGE IN A PROFESSIONAL
LEARNING COMMUNITY: INTEGRATING ELA AND SOCIAL STUDIES CURRICULUM

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A dissertation submitted in partial fulfillment
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Doctor of Philosophy – Curriculum & Instruction

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The University of Nevada, Las Vegas

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Integrating ELA and Social Studies Curriculum

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Abstract

Investigating Teacher Learning and Change in a professional learning community:

Integrating ELA and Social Studies Curriculum

By

Derek Jordan

This case study examines teacher learning and change in classroom practices as a result of participating in a professional learning community (PLC) that designs integrated curriculum of English/language arts curriculum and social studies. The participants for the study were a team of four fifth grade teachers, of which team the author is a member. These teachers teach in a Title-1 urban elementary school in the American Southwest. Case study methodology was chosen to examine this phenomenon. Data were collected from PLC sessions, interviews, recorded lessons, and artifacts. Collection took place at the research site. Data were analyzed using qualitative techniques of coding and triangulation and themes were verified with member-checks and consultation with an outside researcher. It was found that creating integrated curriculum allows teachers to examine their pedagogical content knowledge, that teachers realize connections between subject areas, and that the process is difficult and time consuming. It was also found that the community of practice created within the PLC drives teachers to examine their pedagogical content knowledge, develop their professional identities, and become more receptive to changing their practices. The study adds to the existing literature on professional learning communities, integrated curriculum, teacher learning, and teacher practice.

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Chapter One: Introduction

Overview and Researcher Experiences with the Topic

Personal connection. When I began teaching fifth grade in 2007, I entered a “low-performing” elementary school. I was handed a scripted ELA program and directed to “teach it with fidelity.” Our daily schedule included a 90-minute block of time during which every teacher in every classroom taught this scripted program. Also included in our school’s master schedule was a 70-minute block for math, a 50-minute block for writing, and a 50-minute block for intervention. “Where is the time for science and social studies?” I wondered. There wasn’t any. I came to find that most Title-1 schools in our district followed the same format; indeed many schools across America have sacrificed science and social studies in favor of the “tested subjects” (math, reading, and writing).

To me, this was unacceptable. An extremely high percentage of students at my school were first and second generation immigrants to our country, and they were not being taught much about its origins, construction, or laws. What of those who aspired to careers in the sciences: doctors, engineers, or architects? Perhaps those vocations were reserved for the students who attended schools with good test scores, schools that had less top-down dictation of curriculum and more pedagogical autonomy.

For my first year, I unwillingly complied with the school’s policy in teaching only the tested subjects, interjecting conversations and demonstrations in science and social studies during my read-aloud time or in response to student questions throughout my other lessons. As I grew as a teacher, I discovered ways to adapt the scripted program to fit instruction in science and social studies into our crammed day. I was able to tie lessons in black history, for example,

with an ELA story on Rosa Parks. This was not enough for me though, as I had held the belief that concepts must be more deeply connected to be truly learned.

With the adoption of the Common Core State Standards (CCSS) (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010) by my district, I was granted much more freedom in constructing my own curriculum. Our scripted programs no longer paralleled the high-stakes standardized tests, which were based on the now antiquated Nevada State Standards; and there were not yet any scripted programs that “covered” the Common Core. Immediately, I built on the foundation I had created by integrating science and social studies into my ELA instruction and created lessons and units that used instructional materials from these subjects to teach the ELA standards delineated in the Common Core.

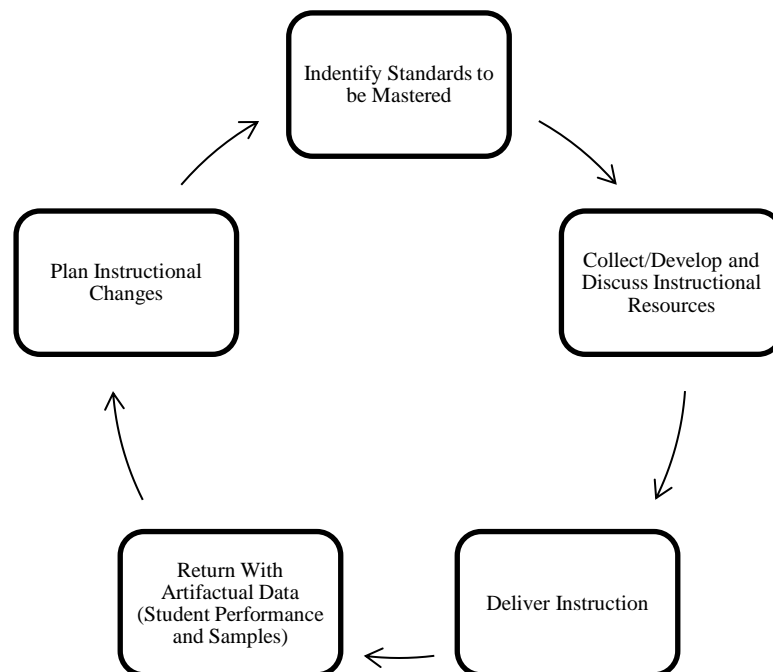
Over the past four years, I have shared my curriculum ideas with my colleagues, but I have never been able to develop it deeply beyond my own classroom. Though my colleagues have adopted many of the lessons, units, and projects that integrate the subjects, it has been done inconsistently, varying from classroom to classroom. For example, each teacher would create their own project based lessons for the same skill, with different outcomes and different assessments. In this project, I researched a professional learning community (PLC) in which I, along with my grade level team, developed and implemented an ELA curriculum that integrated social studies with the CCSS informational text standards across the entire grade level, rather than only in my own classroom. In completing this study, I examined teachers’ learning process in creating curriculum and how practices changed as a result of that process.

PLC at the research site. For the 2015-16 school year, our school adopted a PLC model based on the model conceptualized by DuFour, DuFour, & Eaker (2002). The fifth grade team of

teachers comprised the personnel of the PLC, with oversight from the administration. As part of our PLC, we were responsible for designing ELA curriculum. The informational text portion of our ELA curriculum was integrated with social studies. This offered me the opportunity to study how our PLC created curriculum, what we learned from the process, and how we changed our classroom practices as a result of that work.

The design for a PLC in which a team of teachers creates an integrated curriculum must be developed uniquely for the outcomes the school desires. Based on the work of Allen (2013) and DuFour and Eaker (2002), we developed the following PLC design:

Figure 1. General PLC flow chart used at school site.



In the first PLC session, the team identifies a set of standards (from the CCSS) for their students to master. When the standards are identified, the teachers suggest instructional resources (materials, assessment, homework, project ideas, etc.) with which they are familiar. These materials are discussed and agreed upon by the team. After the meeting, the team delivers

instruction using the materials collected at the first PLC. Upon returning to the next PLC session, the teachers share and discuss student performance, citing samples of student work. The discussions that take place here focus on how the materials and the pedagogical strategies each teacher used contributed to student understanding or misunderstanding. The next step is to identify, as a team, what instructional changes must take place to increase student mastery of the standard. When changes are discussed and planned, the cycle returns to identifying the next standard to be mastered.

Organizational routines and structures are necessary for effective collaboration (Hopkins & Spillane, 2014). For this reason, it is important to conceptualize components of an effective PLC. Taylor, Hallam, Charlton, & Wall (2014) developed a PLC assessment checklist termed “Formative Assessment of Collaborative Teams” (FACT) (p. 30). The checklist follows a protocol that includes, among other indicators, attendance, agenda, roles, action plans, evidences, participation, expertise, and instruction (p. 48-49). Based on these expectations, a PLC should be attended by every member of the grade level team, an agenda should be followed, roles should be established and maintained, action plans should be developed, teachers should be prepared with evidence of student achievement, teachers should participate actively, offering expertise on all aspects of instruction (targets, assessment, strategies). It is recommended that norms be established at the inception of a PLC (D’Ardenne, et al., 2013). Aside from these suggestions, protocol for conducting effective PLC sessions remains ambiguous (Hairon & Dimmock, 2014). For this reason, the PLC at our site was guided by the principles discussed here, but a prescribed protocol was not strictly followed.

Why social studies? Education in the social studies helps people understand their role in society and gives historical and social perspective to individual decision making (Fischman &

Haas, 2012). Though today academic success is largely measured by quantifiable variables such as scores on high-stakes standardized tests, academic success should not be viewed this narrowly (Houston, 2005). A leading contributor to constructivist thought on education, John Dewey (1956) proposed that the aim of a school should be, “not the economic value of the products, but the development of social power and insight” (p. 18). Taking a constructivist approach to curriculum design that integrates social studies content with literacy recognizes that these domains are not separate entities, but are closely related and useful for life in a post-modern democratic society. Helping students understand their world and their relation to it will hopefully enable the students to bridge from being receptacles of knowledge into being autodidacts who can make sense of their world.

Summary of Relevant Literature

This section summarizes the literature on integration and PLCs. The literature will be reviewed in depth in chapter two. Research has been done on PLCs (Allen, 2013; Brodie, 2014; Harris & Jones, 2010; Song, 2012) and on integrating curriculum (Curwen, Miller, White-Smith, & Calfee, 2010; Guthrie, McRae, & Klauda, 2007; Hinde, 2005; Parsons et al., 2011), but no studies were found on the connection between the two. Also, specific research on how teachers change their practices as a result of participating in a PLC is limited.

PLC Research. In a comprehensive review of PLC research, Vescio, Ross, and Adams (2008) emphasized a need for future research into evidence of the impact of PLCs on teacher learning and teacher practice. Work done since that time has defined the PLC more specifically (Allen, 2013; Hairon & Dimmock, 2012; Harris & Jones, 2010; Hopkins & Spillane, 2014); has demonstrated that collaboration increases teacher knowledge (Brodie, 2014; Griffiths, 2014; Poekert, 2012), and that participation in a PLC increases teacher efficacy (Mintzes, Marcum,

Messerschmidt-Yates, & Mark, 2013; Song, 2012); and has predicted but not confirmed that collaborative culture increases student achievement (Moller, Mickelson, Stearns, Banerjee, & Bottia, 2013). More research is needed on how participating in a PLC affects changes in teacher practice.

Research on Integration. The literature on integration of subjects focuses on the ability of an integrated curriculum to foster inquiry and high-order thinking. Many studies of integration models focus on problem-posing (Curwen, Miller, White-Smith & Calfee, 2010; Richards & Bennett, 2011; Rosler, 2008) and high-order comprehension/vocabulary strategies (Bennett, 2012; Hairrell, Simmons, Rupley, & Vaughn, 2011; Shanahan & Shanahan, 2014) as important aspects of integrated curriculum. The research also shows that integrated curriculum can achieve the goal of student learning in two content areas simultaneously (Hinde, 2005; Ornstein & Hunkins, 2009; Parker, 2005). The teachers in the site studied in this project decided to create integrated curriculum to achieve these purposes. The strategies of problem posing through projects and utilizing high-order comprehension/vocabulary, along with other strategies elaborated in chapter two, allowed teachers who have previously taught from a basal or scripted program or who have taught other subjects and in other countries to dramatically change their practices.

Synthesis. Research on PLCs consistently shows increased teacher learning as a result of the collaboration done in that setting. Research on integration demonstrates an opportunity to increase teacher and student knowledge. The way teachers examine their practices in the PLC setting, especially if they are creating new curriculum, is not adequately represented in the literature. Qualitative inquiries of PLCs and integrated curriculum have been conducted, but none have examined them together. This case study explores teacher change in the context of

creating integrated curriculum in the PLC, contributing new knowledge as a synthesis of collaboration, curriculum design, and teacher learning.

Rationale

This study adds to the current body of knowledge by examining how teachers changed their knowledge and practices as a result of participating in a PLC in which they designed integrated curriculum. Studies have shown that teachers increase their knowledge of practice when they design curriculum and when they participate in PLCs, and even that they self-report change in practice, but none have shown evidence of actual classroom practices; or changes in pedagogical content knowledge in the context of creating integrated curriculum.

Research questions

The questions driving this case study are:

- 1) What is the process of creating and implementing integrated ELA/social studies curriculum in a PLC?
- 2) How does the process of creating integrated ELA/social studies curriculum contribute to change in teachers' knowledge?
- 3) In what ways do teachers change their practices as a result of learning in a PLC?

These research questions helped me investigate how the curriculum creation process in a PLC led to growth in teacher knowledge and change in classroom practices. Based on the existing literature on curriculum and PLCs, these questions addressed a concept that is not sufficiently represented in the literature. Specifically, investigating teacher change in the context of creating curriculum in the PLC was a unique opportunity to add to the body of research in these areas.

Definitions of key terms

Constructivism. The educational theory of constructivism emerged in the middle of the twentieth century and is based on the idea that people construct their own knowledge of the world through their experiences. Subdivisions of constructivism include schema theory, sociocultural theory, social constructivism, and existential constructivism. Existentialist interpretation of constructivism posits that teachers may awaken students' understanding of their selves in relation to their world, and lead them to construct their individual understandings based on the learning tasks created by the teacher (Morris, 1966; Ross & Mannion, 2012). This concept is discussed thoroughly in the theoretical framework in chapter two.

PLC. The acronym PLC stands for Professional Learning Community. This concept has been expressed and interpreted differently in the research literature and in school practices. For the purpose of this study, the operative definition of PLC is a community of educators who work collegially to drive change in a school that will benefit learners (students and teachers). A more specific discussion of the PLC is available in general in chapter two, and of the PLC at the research site in chapter three.

Pedagogical content knowledge. The concept of pedagogical content knowledge (PCK) was introduced by Shulman (1986) as "...the best methods and strategies that teachers use to transmit knowledge." A year later, Shulman (1987) refines this definition, "It [PCK] represents the blending of content and pedagogy into an understanding of how particular topics, problems, or issues are organized, represented, and adapted to the diverse interests and abilities of learners, and presented for instruction." Shulman's concept of PCK demonstrated that teachers must be able to dynamically combine their knowledge of content and pedagogy to be effective.

Integrated curriculum. In general, integrated curriculum refers to the integration of two or more subjects to be taught simultaneously. For the purpose of this study, integrated curriculum refers to English/Language Arts (ELA) curriculum that is integrated with social studies content.

Transdisciplinarity. Transdisciplinarity connotes a unified approach to understanding a concept or idea. In research, transdisciplinarity is a holistic strategy that incorporates two or more disciplines. In education, transdisciplinarity refers to curriculum that is created from a constructivist standpoint that involves the interaction between the learners and the content, requires the learners to connect two or more content areas, and is an open system of inquiry rather than a closed system of processes (Levin & Nevo, 2009). The educational definition of transdisciplinarity is referred to in chapter two.

Overview of Methodology

Case study methodology was chosen for this study based on two factors. First, case study methodology allows the researcher to immerse himself into the phenomenon being investigated. Because I am a member of the PLC being studied, I will be fully immersed in the research setting. Case study methods also permit the researcher to collect and analyze data from several sources to verify observed themes. Another factor in choosing case study methodology is its use in previous studies. Researchers have been successful in defining the PLC, in investigating the structures and processes of the PLC, and in investigating teacher knowledge and practices using case study methodology. Therefore, I adopted this methodology to understand teacher learning and resultant changes in practices.

This case study took place in an urban Title-1 elementary school. The community studied was a fifth grade team who designed ELA curriculum that was integrated with social studies.

Data were collected from PLC agenda minutes, interviews with participants, videotaped lessons, and artifacts. These sources were analyzed for emergent themes, which were verified in member-check interviews and a final focus group interview. Findings from each data source were triangulated to ensure validity. Findings are reported as a case study.

Chapter Summary

This case study examines teacher learning in the PLC. I was fully immersed in the study as a researcher and participant. I chose to examine a PLC that created integrated ELA/social studies curriculum out of personal interest in returning social studies to the elementary school curriculum and because the curriculum design process offered a unique opportunity to examine the phenomenon of teacher learning and resultant changes in practice in that context.

Data were collected over a three-month period and coded for themes based on the research questions and existing literature. Themes were verified with the participants. Findings are reported as a case study. This study adds to the body of literature on PLCs, curriculum creation, teacher learning, and teacher practices.

Chapter Two: Theoretical and Empirical Framework

Theoretical and Empirical Framework

The literature reviewed in this chapter makes a case for further research on teacher learning in the context of integrating elementary ELA with social studies. This literature review contains two sections: theoretical framework and empirical framework. In the theoretical framework section, I review literature on constructivism, curriculum policy, and concepts associated with the PLC in order to establish a theoretical basis for inquiry about the research questions. In the empirical framework section, I review empirical studies on integrated curriculum and the impact of PLCs on teacher learning in order to situate this study in the context of the existing literature.

Theoretical Framework

This section establishes a theoretical framework for inquiring into the process of creating integrated curriculum in the PLC. It opens with a discussion of the constructivist approach to creating curriculum. Constructivist theory will guide discussion of the process of creating integrated curriculum in the PLC. The next section explains curriculum policy in the age of CCSS and places the work done in the PLC in the context of national policy. The final section is a review of literature on the PLC itself. In this section, the literature reviewed provides a theoretical basis for approaching a study of the PLC. It defines the PLC as it is conceptualized in this study and by the team being researched. Also included is a review of the literature on the structure and aims of the PLC. Additionally, the research reviewed in this section provides theoretical insight into the process of integrating social studies with ELA by the PLC.

Constructivism: Benefits to students and teachers. Though instruction in the content areas (social studies and the sciences) usually begins explicitly in the middle grades, research in elementary literacy has emphasized the need for content area literacy instruction to begin earlier (Moss, 2005). Taking a constructivist approach to curriculum design, elementary teachers can integrate social studies content into literacy instruction to achieve multiple goals of increasing students' knowledge of informational text and content area knowledge in social studies.

Constructivism as an educational theory has its roots in the mid-twentieth century, around the work of Dewey (1916) and Piaget (1957) and rests on the idea that knowledge is constructed by the learner from his individual experience. Philosophers, educators, and social scientists have conceptualized the idea of constructivism in many ways (Bartlett, 1932; Freire, 1987; Gaffney & Anderson, 2000; Prawat, 1996). Post-modern conceptualizations of constructivism include schema theory, sociocultural theory, and idea-based social constructionism. The major constructivist theory driving literacy education today is arguably sociocultural theory (Gaffney & Anderson, 2000; Vygotsky, 1978), which posits that experience and behavior are all “essentially linguistic” (Rorty, 1989, p. 9) and that the world is open to multiple interpretations, which makes instruction in literacy not simply teaching how to read, but how to interpret. That is, a sociocultural conception of literacy education must include instruction in learning to read (phonics, vocabulary, comprehension) as well as in how to interpret what one reads as it pertains to one's lived experience.

A problem with social constructivism is that it situates literacy and language use primarily outside the individual. Existentialist philosophy has an answer to this dilemma. In his peripatetic school, Socrates used language to awaken his students' awareness of *themselves*. Taking an existential-constructivist stance toward teaching literacy, therefore, means,

“awakening learners to themselves as learners and seekers and creators of their own truth from the starting place of the awareness of their own ignorance” (Morris, 1966). Arousing students’ awareness of self retains their identity as meaning-creators and interpreters of language. Ross and Mannion (2012) discuss an “ontology of dwelling” in which curriculum is created with consideration of time and place, rather than designed *a priori* and delivered from a manuscript. In contrast to a mind-body dualism ontology in which students’ minds are separated from their static environment, scholars in the existentialist tradition believe curriculum must be designed that will allow students to “dwell” in their learning tasks (Ross & Manninon, 2012). The learning tasks become part of the learners’ embodied living rather than simply something to learn and to be tested on. The teacher acts in school as elders act in the out-of-school dwellings of students: the teacher and students all interact with and manipulate a new environment, with which the teacher is more familiar and thus able to enhance the embodied experience of the learner. Embodying curriculum in the students’ experience not only leads to increased cognition, but it can foster engagement and motivation in students (Curwen, Miller, White-Smith & Calfee, 2010; Moley, Bandr, & George, 2011; Richards & Bennett, 2011). An integrated approach to ELA, such as the one in this study, extends the blending of existential-constructivist theory into practice. The constructivist approach to creating authentic integrated curriculum in the PLC at the research site was an opportunity to study this phenomenon and how it contributed to teacher learning and practice. Furthermore, constructivism provides a lens through which to view the learning of the teachers in this study.

Pedagogical content knowledge. When teachers design curriculum, the process offers an opportunity for them to deeply examine their content knowledge, their pedagogical knowledge, their beliefs about students, and their relationship to the curriculum (Darling-Hammond, 2006).

The concept of pedagogical content knowledge was introduced by Shulman (1986) as “...the best methods and strategies that teachers use to transmit knowledge.” A year later, Shulman (1987) refines this definition, “It [PCK] represents the blending of content and pedagogy into an understanding of how particular topics, problems, or issues are organized, represented, and adapted to the diverse interests and abilities of learners, and presented for instruction.”

Shulman’s concept of PCK demonstrated that teachers must be able to dynamically combine their knowledge of content and pedagogy to be effective. That is, teachers must possess extensive knowledge of the content, or subjects they teach, as well as knowledge of pedagogy, or the best methods for delivery of the content. Because of this, teachers must be able to work autonomously and collaboratively in developing, delivering, and assessing curriculum. The concept of PCK works well with constructivism because in examining and developing their PCK, teachers are constructing their knowledge of how they teach and “dwelling” in their attempts to improve their practices. Grossman (1992) calls for continued research into “...the process of teacher learning [which] have not been the central focus of these [prior research of teacher learning] investigations” (p. 180). Providing teachers with the opportunity to work in collaborative communities that design curriculum provides a context in which to examine the teacher learning process.

In a collective case study, Lewis (2004) studied three elementary science teachers who designed their own “post-modern” curriculum. Lewis concluded that curricula designed by the teachers themselves were created with learning goals in mind and were open to students’ needs, reflecting the theoretical ideas discussed above. The emphasis on cooperation over competition was also evident as a constructivist approach to curriculum design and delivery. An open design of learning activities established curriculum that was responsive to students’ learning needs

while maintaining a focus on the learning targets determined by the teachers. Therefore, creating curriculum with these multiple goals in mind restores a vital element in student learning (social studies) that has been stripped from the curriculum in many schools today (Milosovic, 2007) and gives students an opportunity to learn by dwelling in the curriculum rather than passively receiving information from the teacher.

Extending his original definition of PCK, Shulman (2004) suggests four principles for teacher learning: activity or agency, reflection or meta-cognition, collaboration, and formation of a supportive community (p. 476). The first principle, activity or agency, refers to teachers who are not passive learners (calling constructivist theory to mind), but who take responsibility for understanding their world and constructing their ongoing understanding of it. The second, reflection, refers to teachers who reflect on their thoughts and actions and how and why they are learning what they learn. The third, collaboration, refers to teachers who work together to support one another's learning (a concept that will be discussed more thoroughly in the PLC research). The fourth, community, refers to a culture that values the expertise of others and combines their labors to achieve results that are greater than the sum of the respective parts. Little (2001) suggests that professional development should occur as inquiry, focusing on, "learning in and from practice, and that concentrates on the combination of knowledge of subject, knowledge of teaching, and knowledge of particular groups of students" (p. 37).

The literature reviewed in this section reveals a conceptualization of integration that achieves the ends of student and teacher learning in both ELA and the content areas, based on a constructivist approach to student learning and self-awareness by immersing them in the curriculum as active participants. It also provides a conception of PCK that is related to the constructivist theories driving this study. By creating authentic curriculum that is responsive to

students' needs, teachers are able to create an "ontology of dwelling" (Ross & Mannion, 2012), facilitating awareness of self and auto-didacticism for themselves and their students.

Curriculum policy. To establish perspective for the creation of integrated curriculum, a discussion of ELA in the context of present educational policy is necessary. Teachers who desire to design authentic integrated curriculum must conform to current educational policy (Darling-Hammond, Wise, & Klein, 1999). The major policy guiding curriculum creation in the United States is the Common Core State Standards [CCSS] (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010). These standards list learning targets for each elementary grade in the domains of reading, math, writing, speaking and listening, and language (standards for the content areas begin in grade 6). Furthermore, the standards are written in broad, sometimes ambiguous, language. It seems that the creators did this intentionally in order to allow interpretation by professional educators. The elementary standards also seem to lend themselves to integration with the content areas. To illustrate this point, some specific reading standards will be discussed below.

In outlining learning targets for fifth grade language arts, the CCSS (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010) document four domains in the reading informational text strand: key ideas and details, craft and structure, integration of knowledge and ideas, and range of reading and level of text complexity. Analyzing the language of these standards, researchers can see the necessity to include the content areas in ELA instruction in the fifth grade. Indeed, standard RI.5.3 mentions historical text explicitly: "Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text" (National Governors Association Center for Best Practices & Council of Chief State School

Officers, 2010). Thus, the CCSS offer teachers an open invitation to introduce social studies materials into their literacy education framework. Additionally, the teacher can use these learning targets to conceptualize a literacy curriculum in which students are not only learning how to read, but how to interpret, an idea rooted in constructivism.

Education policy is often driven by adoption of new textbooks, curriculum guides, assessment systems, or standards (as in the CCSS). However, research demonstrates that teachers do not change their practices simply because of changes in policy (Wilson, 2003). Instead, teachers combine their old practices with new mandates in an effort to simultaneously preserve their wisdom and honor those mandates. The PLC model encourages teachers to collaborate in this endeavor. Teachers can use the PLC to overcome discomfort with new policy by sharing ideas and offering support. Teachers can create and share practical activities that fit the reality of their classroom while working within the mandated political structure (Lieberman & Miller, 1984). The questions in this study are driven in part by the desire to examine this process in the context of the CCSS.

It should be noted that the National Council for the Social Studies (NCSS) has issued standards for fifth grade social studies (National Council for the Social Studies, 2013). These standards were not used by the PLC in this study to drive creation of their curriculum. Rather, the PLC used the state's social studies content standards.

Definition, structure, and aims of the PLC.

Definition. The Professional Learning Community (PLC) has been defined in many ways. Hairon and Dimmock (2012) characterize the PLC as emerging from practices in the business world applied to the school in an effort to raise academic achievement. Operative

definitions of the school-based PLC include: “Embedded structures that allow for common planning times for grade level teams” (Hopkins & Spillane, 2014) and “...a group of connected and engaged professionals who are responsible for driving change and improvement within, between, and across schools that will directly benefit learners” (Harris & Jones, 2010, p. 173). There is a need, based on policy rhetoric on school improvement and identified in the literature cited here, to strengthen common knowledge of the PLC and its function and structure in American schools. Included in this review are three ways to conceptualize and solidify the PLC: structure, teacher learning, and student achievement.

The first element, structure, indicates the processes, protocols, and personnel used in the PLC. The second element, teacher learning, focuses on the impacts of the PLC on teachers’ practice as they build pedagogical and content knowledge. Finally, the element of student achievement can be used as a determinant of teachers’ implementation of knowledge gained in the PLC to improve the learning of their students in the classroom. Each of these elements will be discussed through the review of related studies.

Structure. The structure of the PLC includes the personnel, protocols, and processes used in the learning community. These structures vary from school to school and community to community depending on policy, interest, and time constraints. The studies reviewed here examine effective PLC structures without prescribing a specific “right way” to structure a PLC. Rather, the discussion uses empirical evidence to suggest effective structural designs and practices.

The basic personnel structure of the PLC should necessarily include teachers, but may also include administrators, principals, and members of the community at-large. In a study of a

distributive leadership model, Harris and Jones (2010) studied a PLC in Wales that consisted primarily of teachers, with school administration participating as collegial facilitators. In this model, teachers resisted change and were suspicious about the work done in the PLC; they saw it as simply a top-down mandate that teachers were to comply with, rather than an effective strategy for increasing student achievement. Similarly, Hairon and Dimmock (2012) showed that a hierarchical work structure (in a Singapore school) did not permit the kind of teamwork required for an effective PLC. Because of the “command and control” mentality defined in conversations with school leaders and teachers, PLCs were confined to pedagogical practices, subject expertise, and student learning; teacher empowerment and autonomy were ignored.

In contrast to a hierarchical structure that places administrators as facilitators, Hopkins and Spillane (2014), analyzed the social network of a school staff and determined that grade level teams are the most frequent sources of advice for beginning teachers. Furthermore, they determined that “Embedded structures [grade level PLCs]...afforded beginning teachers opportunities to seek out their grade level colleagues for advice and information” (p. 334). The literature suggests that though the personnel of a PLC may vary, structures must be in place that allow for all members to focus on the work to be done rather than on a hierarchy of control. According to Bausmith and Barry (2011), the PLC should focus on content, active learning, coherence, duration, and collective participation.

In Allen’s (2013) model of collective creation, teachers themselves determine the vision and purpose of their PLC and use a process of collectively generated inquiry to improve their practices. In addressing the structure of a PLC, Allen suggests a basic protocol that emphasizes collective creation. He contrasts a “traditional PLC” in which teachers meet and discuss instruction but do not re-examine past experience to formulate future action with a three-

component model that includes means, materials, and modes of engagement. By means, the author refers to a dialogue focused on a cycle of inquiry; materials are any artifacts from lessons and class activities as well as descriptions of students; and modes of engagement refers to emphasis on complementary statements, positive dialogue, and identifying elements from their classrooms to focus on for improvement of future practice.

It appears from Allen's work that a specific protocol need not be followed, but Saunders and Gallimore (2009) note that PLC as structured inquiry must be consistent and coherent. In their study of a highly structured PLC format, they determined that student achievement increased as teachers participated in focused meetings that met on a consistent basis and followed explicit protocols that focused on students' academic needs. The protocol they identified had seven steps:

1. Identify and clarify specific and common student needs to work on together.
2. Formulate a clear objective for each common need and analyze related student work.
3. Identify and adopt a promising instructional focus to address each common need.
4. Plan and complete necessary preparation to try the instructional focus in the classroom.
5. Try the team's instructional focus in the classroom.
6. Analyze student work to see if the objective is being met and evaluate the instruction.
7. Reassess: Continue and repeat cycle or move on to another area of need (p. 1016).

This protocol was designed by the researchers and taught to the participants in professional development sessions. As the attendees of the sessions disseminated this knowledge to their grade level teams, the protocol was followed more closely. In comparison with a control group who did not participate in the development sessions, the PLC group showed increased student

achievement over time. The authors did not indicate specific evidence of teacher knowledge or significant change in practice, however.

In a review of research on the PLC, Vescio, Ross, and Adams (2008) identify five characteristics of the PLC: shared values and norms, focus on student learning, reflective dialogue, deprivatizing practice, and focusing on collaboration (p. 81). By deprivatizing practice, the authors mean that teachers are no longer isolated in their classrooms. Rather, they share their practices with their colleagues through the collaborative PLC format. Though many school-based teams are calling themselves PLCs (DuFour, 2004), they are not necessarily adhering to these necessary aspects of the PLC. Lieberman and Miller (2011) echo the necessity for established norms and values and focus on student achievement in the structure of a PLC. Harris and Jones (2010) show that adherence to a PLC model can contribute to system-wide improvement.

The importance of structure in a PLC relates directly to the desired outcomes. Teachers in these studies used the PLC to increase their knowledge and skill as teachers, and structured their PLC appropriately with this aim in mind. Based on the literature, the structure of a PLC must have the goal of student learning in mind, must be supportive of teacher communication and collaboration, and must be consistent and coherent. When the personnel and structures are in place, the PLC can focus on its goals: teacher and student learning.

Aim of the PLC: Student and teacher learning. Current models for the effective PLC emphasize teachers' shared purpose and collective responsibility for student learning. Leading PLC researchers DuFour and Eaker (1998) indicate the importance of a clear, teacher-developed curriculum. They note, "A professional learning community strives to provide its students with a curriculum that has been developed by the faculty through a collaborative process..." (p. 152).

Experienced teachers bring a wealth of creativity and expertise to the PLC (Griffiths, 2014); while novices bring fresh ideas that help to maintain democratic practices in the PLC (Harris & Jones, 2010), and all are focused on the goal of student achievement. This section reviews research that relates teacher participation in PLCs to their students' achievement on various measures.

In their study of PLCs (called instructional learning teams by the authors) and their effect on student achievement, Saunders and Gallimore (2009) used data from the SAT-9 achievement test to determine student achievement outcomes of a treatment group who participated in the authors' PLC design. They discovered that student achievement on this measure increased after the second phase of implementation (the first being training administrators), in which teachers participated in PLC meetings and development to improve PLC practice. They noted, however, that these gains may not have directly resulted from the work done in the PLC. The participating teachers may have simply been more focused on teaching in general because of the structure of the professional development and PLC (commonly called the Hawthorne Effect). The Hawthorne Effect must be taken into account when designing an effective methodology for studying the effectiveness of the PLC on teacher and student learning. Based on the theoretical literature examined here, major goals of the PLC are student learning and teacher learning. Empirical evidence of theoretical assertions related to teacher learning will be discussed in the empirical framework section.

Summary of theoretical framework. The literature reviewed above provides theoretical perspective for the processes being investigated in this study. It aligns integrated curriculum with the theory of constructivism. It also provides a theoretical basis for the structure and relevance of the PLC. The constructivist approach to curriculum design emphasizes personalization of

knowledge through an “ontology of dwelling,” language use, and collaboration in the classroom. Collaboration is also emphasized in the structure and aims of the PLC. Though specific structures and protocols are not necessary, a successful PLC depends on structural factors such as consistency and coherence, and on collaborative factors such as collegiality being valued over hierarchy. Examining teacher learning and change in practice in this context is the next step after identifying theories behind curriculum design and the PLC. The next section reviews empirical literature related to creating integrated curriculum and teacher learning in the PLC.

Empirical Framework

This section is a review of empirical literature related to ELA curriculum that is integrated with content subjects and literature related to the impacts of the PLC on teacher learning. For the integration section, articles were identified based on their utility in examining teacher learning and/or practice in creating and implementing integrated curriculum. These articles are reviewed as examples of how others have integrated curriculum and how integration has been researched. Case study research is the dominant methodology for researching this phenomenon. For the PLC section, twelve articles were identified from a search of the ERIC and EBSCO databases and are reviewed in terms of three themes: teacher efficacy, theoretical and pedagogical shifts, and changes in teacher practice. Again, case study research is the predominant methodology. Synthesizing the literature on integrated curriculum and on teacher learning in the PLC, it is evident that research is needed to investigate what effects the process of creating integrated curriculum in the PLC has on teacher learning and practice.

Empirical evidence of integrated curriculum. Constructivist ideas, when translated to teacher practice, include problem-posing and inquiry-based curriculum strategies. Authentic, inquiry based curriculum can increase student motivation (Guthrie, McRae, & Klauda, 2007) and

achievement (Parsons, et al., 2011). Many of the studies cited in this section have taken an approach that integrates reading with social studies in order to, “help children learn to read at the same time they read to learn” (Moss, 2005, p. 50). By posing problems and allowing students to use curriculum materials to solve them, students can improve their skills in literacy and in content areas simultaneously.

Problem posing was a feature of a three-year longitudinal study of the Read-Write Cycle Project, an elementary school learning project that is based on the constructivist idea that the learner is an active problem solver and uses inquiry projects that integrate science and social studies with ELA. Curwen, Miller, White-Smith and Calfee (2010) used an experimental design based on observation of teachers and students as they negotiated the curriculum. The authors used interviews, taped lessons, teacher journals, test score data, and artifacts to triangulate data and translate them into findings. Through a mix of traditional reading and writing strategies such as graphic organizers, reflective writing, using context clues, etc.; and metacognitive strategies such as think-alouds and self-monitoring while using science and social studies projects and materials, students were immersed in thinking deeply about the curriculum. Teachers reported that students’ metacognition was evident, that the content domains of science and social studies were explored and understood by students, and that integration increased students’ abilities to comprehend more difficult text. The article does not discuss the process of curriculum creation by the teachers involved in the project in depth and evidence of student understanding is based on reports of teachers. The process of creating curriculum may have contributed to the teachers’ metacognitive processes.

In a qualitative, self-reflective study of their own practices, Richards and Bennett (2011) studied a summer camp created to increase achievement of low-performing students. The authors

present their case study as a dialogue in which they explore the theoretical concepts associated with integrating social studies and ELA as they put them into practice. In their discussion of creating authentic curriculum, the authors rely on the theory of “transdisciplinarity.” The authors define transdisciplinarity as “...a process in which teachers and students solve problems by spanning disciplines” (p. 48). The teachers created curriculum in which students speculated about an issue in the social studies, then raised research questions and investigated them with curriculum materials. The study found that student choice and authentic inquiry were positive factors in increasing student participation and achievement in the program. The authors note that teachers who desire to create a similar curriculum must be cognizant of their theoretical orientations, which will influence their approaches to the curriculum. The discussion of teacher learning and practice in this study focuses on the authors’ metacognitive analysis of their process in creating and enacting curriculum. They emphasize the time and material demands of integrated, inquiry-based curriculum. There is limited discussion on how the teachers collaborated to design the curriculum and whether that collaboration affected their practices.

The constructivist problem-solving approach was studied in the context of “process drama,” in which students were placed in fictionalized leadership roles in their study of history. In a phenomenological study of process drama in a fifth grade social studies class, Rosler (2008) discussed how students, “learned to combine texts to understand and create new texts” (p. 265) such as a plan to win the Revolutionary War based on readings of multiple texts on the subject. Though this study took place before the era of CCSS, the parallel is easily drawn to the language in the “craft and structure” and “integration of knowledge” domains.

To create a process drama, the teacher generated “drama pretexts,” or objectives for study, based on the American Revolution, the Trail of Tears, the antislavery movement, and the

Holocaust. An example of a pretext is: “Students will become top generals in Washington’s army and will devise a plan to win the war and beat the Lobsterbacks” (p. 266), which is supported by poems, pictures, photographs, and/or text. Students worked together to create a process drama, or a dramatic dialogue without scripts, costumes, or memorized lines, based on their understanding of their topic. As students created a fictionalized representation of their understanding of each topic, with teacher facilitation, they were combining knowledge learned from different texts and demonstrating that knowledge by linguistically interacting with one another (this also aligns with CCSS’s speaking and listening standards). This interactive, problem-solving approach is rooted in the theory of constructivism discussed above.

The phenomenological approach to this study allowed the investigator to examine how students used language to respond to classroom activities geared toward specific learning targets and were also demonstrating adaptability based on informal assessment of students’ learning needs. The author’s use of video and audio recording of classroom interactions facilitated coding and analysis into categories of intertextuality (interpreting text in light of another text), student engagement, student leaders, and collaboration (p. 267). The connection between ELA and social studies in this study demonstrates that integration can facilitate student learning and motivation in both subject areas. This research was focused primarily on students’ motivation and learning. The teacher’s process of creating the curriculum is not discussed. Also, it seems that the curriculum was designed and/or used by the teacher alone rather than with a group of colleagues.

Reading comprehension is a major focus of much of the literature in integrating literacy with content areas. Vocabulary is another important aspect of literacy, especially in the content areas, but studies have found that content vocabulary instruction is limited in elementary schools (Shanahan & Shanahan, 2014). In a content analysis of twelve social studies methods books,

Bennett (2012) discovered a “...lack of vocabulary and reading comprehension strategies listed and detailed in each textbook” (p. 69). One way to remedy this problem is for teachers to learn how to integrate literacy strategies with social studies instruction.

A study of fourth grade social studies teachers (Hairrell, Simmons, Rupley, & Vaughn, 2011) found that teachers who received professional development in integrating vocabulary strategies from literacy curriculum frameworks increased the frequency of use and time of those strategies in the classroom, versus teachers from their control group who received no professional development in literacy strategies. The authors studied fourth grade teachers in nine elementary schools who taught social studies separately from ELA, quantitatively comparing a control group of teachers who did not receive professional development with a conditioned group who participated in the development training (18 hours of instruction, practice, and study sessions). The authors used audio recordings of the classrooms to identify instances of vocabulary instructional strategies in teachers’ ELA practices. The researchers noted that there was a discrepancy of time spent in social studies instruction; each teacher spent a different amount of time teaching social studies. It would be interesting to see the role vocabulary instruction plays in a curriculum that integrates ELA with social studies, and how teachers implement instructional decisions when made in a PLC setting rather than a professional development setting.

As the studies reviewed above show, the goal for integrating the disciplines of literacy and social studies is to create a curriculum that employs useful aspects of each discipline to achieve student growth in both. Such a model of integration permits deeper study of ideas, “not to eliminate the individual disciplines, but to use them in combination” (Parker, 2005). This sentiment is echoed in curriculum design literature (Ornstein & Hunkins, 2009). The empirical

evidence shows effective conceptualization and practice of integrated curriculum, but it is ultimately up to dedicated and knowledgeable teachers to create effectively integrated curriculum (Hinde, 2005). According to the literature reviewed in this section, it is important that teachers consider key components of ELA: vocabulary, discussion, learning from text, drawing conclusions, combining texts, creating texts, and using language to explore a topic. Similarly, skills in the social studies such as critical reading, problem posing, problem solving, authentic inquiry, discussion, and reporting of content are equally important. Teachers who desire to create a curriculum that integrates social studies with ELA must be able to see the connections between the skills in each discipline. They can do this through the type of discussions of curriculum building that occur in a PLC. There is a need for a body of research that examines how an authentic, integrated curriculum is developed by teachers. Studying how this is done in a PLC may contribute to a growing body of knowledge in this area.

Impacts of PLC on teacher learning.

Theoretical and pedagogical shifts. This section reviews empirical studies of how teachers changed their theoretical and pedagogical orientations as a result of their participation in a PLC or other collaborative community. In a study of situated teacher learning, Pella (2010) found that teachers explored diverse theoretical frameworks and experienced changes in their practice because of their exploration. The author took a grounded theory approach to studying a PLC of middle school ELA teachers involved in the National Writing Project. The teachers created a lesson study in which they developed four lessons, observed each other, and reflected on their understandings throughout the process (p. 110). Through this process, teachers were able to reflect on their own theoretical frameworks and those of their colleagues. The teachers synthesized their own and the others' prior knowledge to negotiate conflicts in beliefs about

teaching writing. The author describes the belief change process in great depth, but discussion of change in practice is limited to self-reporting by the teachers. Though there is mention of transformations in perceptions and pedagogy, the pedagogical changes are not observed by the researcher.

Mathematics teachers who participated in a PLC increased their knowledge of learner errors, changing their theoretical and pedagogical beliefs. Brodie (2014) studied participants in the Data Informed Practice Improvement Project, which was a PLC of math educators who worked to understand learner errors and improve their practices from that perspective. Participants in the PLC worked to identify and interpret actual student errors, such as numbering the positive Y-axis of the coordinate plane with negative numbers. Though the teacher misunderstood this misconception as accidental, other teachers had a similar experience and described the error as a student misconception that the axes were a number line drawn at a 90 degree angle, with the vertex being zero, and the negative side of the line transformed into the vertical axis. Teachers who encountered these types of errors had previously been frustrated, but as a result of their participation in the PLC, they learned to analyze errors in terms of student misconceptions, rather than as mistakes or accidents. Though this finding indicates a change in theoretical stance and suggests a change in teacher practice, translation of these changes to the actual classroom practices is not observed in this study.

In a case study of a middle school in its first year of PLC implementation, Graham (2007) used quantitative data from teacher surveys and quantitative data from interviews with teachers and school documents to determine how the PLC influenced teacher effectiveness. Teachers self-reported that the PLC had a positive impact on their professional improvement. According to the author, a major theme of the interview data was professional collaboration and support. Teachers

were more likely to seek advice from colleagues when they encountered a challenge. Leadership was also an important factor in perceived success. The author notes that there were improvements in knowledge, skills, and teaching practices, but does not elaborate on what these are. The findings rely on teachers' self-reporting *that* they changed, but not *how* they changed.

The collaborative aspect of participation in a PLC seems to have a positive effect on teacher knowledge and resultant change in practice. Participation in lesson studies allows teachers to observe their colleagues and adjust their own practices based on these observations and discussions. Discussing student behavior in the context of math errors allowed teachers to revise beliefs about how students learn and translate that knowledge into practice. Teachers are also more likely to seek advice from other colleagues when they participate in a structured PLC. Most of the evidence of teacher change comes from teachers' self-reporting. Data from observation of teacher practice are needed to verify teachers' self-reports of professional change.

Change in practice. This section reviews empirical literature on change in teachers' practices based on their participation in PLCs or other collaborative communities. Empirical evidence discussed in this section suggests that change in actual teacher practice is less common than change in beliefs and theoretical/pedagogical orientations. Active participation in the teacher learning process is required to create actual change in the classroom practices of a teacher. One way to study this is to examine the process of active collaboration and participation in creating curriculum in a PLC.

Teachers who have established classroom routines are reluctant to change their practices based on passive teacher learning (Hammerness, Darling-Hammond, & Bransford, 2005). Theriot and Tice (2009) found that teacher practice, no matter how ineffective, will not change if

the teacher is not actively involved in the inquiry process. The authors conducted a case study of a sixth grade ELA teacher who participated in professional development that was initiated by the school and allowed for no teacher input or participation. This teacher's beliefs did not reconcile with his practices, which could be described as minimally effective, even after his participation in development sessions. According to the authors, the teacher resisted changing to more effective practices that were presented by other teachers, relying on routines that, though ineffective, were comfortable for him. It is clear from this study that if teachers are not active participants in professional learning, they will not actively change their classroom practices. A similar study was done regarding the routines established in basal reading programs.

Reliance on scripted basal programs is also less effective than collaboratively developing authentic curriculum. In a longitudinal study of beginning elementary teachers, Valencia, Place, Martin, and Grossman (2006) used a grounded theory approach to examine teacher learning. They note, "...mandated language arts curriculum do not necessarily result in substantive teacher learning, thoughtful instruction, or best classroom practices" (p. 114). Research is clear that teacher learning must be active rather than passive. Though the evidence that passive teacher learning does not influence change in classroom practices is strong, there is no evidence in either of the two studies reviewed here that learning in an active setting such as a PLC will cause desired changes either. For this evidence we turn to studies of PLCs.

Studies suggest that teacher learning is more likely to transfer to change in practice if teachers are active, collaborative participants. One approach to active participation in teacher learning is the inquiry stance emphasized in the structure of the PLC. Allen (2013) studied the effectiveness of an inquiry stance for effective teacher learning in a PLC. In his paired analysis of two PLC groups in the theater arts, one which used a traditional PLC model focused on

dialogue vs. one which used an inquiry cycle model, the inquiry groups demonstrated a more collective approach to creation of new teacher knowledge. The comparison of two PLC models helps to determine the most effective strategies for teacher learning in the PLC, in this case a cycle of inquiry that includes artifacts from lessons, descriptions of students' actions, and other instructional and conceptual resources brought to the PLC by individual teachers. Teachers who worked in the inquiry cycle model enacted their collectively generated knowledge directly into their classrooms by introducing instructional resources such as dramatic tasks and feedback rubrics that were generated in the PLC. These teachers also enacted conceptual resources to develop more of these kinds of tasks in the future. It is unclear from this research whether the concept of collective creation can be used in the traditional subjects (ELA, social studies). The author suggests that these skills are transferable to any PLC group, but does not offer empirical evidence of how this can be done.

Another way teachers can be active learners is to watch other teachers' practice and reflect on their own in terms of their relation to others. In a mixed-methods study, Barnhart and van Es (2015) determined that pre-service teachers' participation in a video study group produced higher levels of analytic sophistication. Pre-service teachers at a large public university who enrolled in a course (Learning to Learn from Teaching) that uses video cases and structured frameworks to scaffold reflective work (p. 86) were compared with pre-service teachers who did not participate in the course. The authors used qualitative data from written responses and quantitative data from random samples of surveys that were coded by level of sophistication. Three areas of sophistication were identified: responding, analyzing, and attending; and responses in each category were analyzed for low, medium, and high levels of sophistication. It was found that participants in the video analysis course demonstrated high levels of

sophistication in all three areas. The authors caution that their sample size was small and that participants may have been influenced by other factors besides the video analysis course.

Because this study is focused on pre-service teachers, it does not show how teachers will use what they learned in the study sessions to change their practices in the classroom. Even though the teachers are able to analyze the practice of others, it is unclear whether this translates to a change in their own practices.

To demonstrate how teachers change their practice as a result of collaboration with other teachers, Gwekwerere and Buley (2011) studied pre-service middle school teachers in a project in which fifth and sixth grade students created science picture books. In the project, the teachers worked together to choose topics directly from science standards and applied several aspects of literacy instruction to integrate both subjects. In the beginning stages of the project, the pre-service teachers relied on knowledge from their apprenticeship of observation (Lortie, 1975). That is, they based their teaching practices on observations of their own teachers when they were students. As the project evolved, however, the student teachers designed projects in which students would create picture books that demonstrated their content knowledge in science. Using ELA strategies, the pre-service teachers guided the students through the process of creating books. Finally, the students were asked for feedback on the projects. Many responded that the project helped them understand the science information that they would have struggled with if they had simply read it in a textbook. Similarly, the pre-service teachers noted that conversations shared with the children during the project deepened their understanding of the content material. They found that they could approach science instruction much more confidently in such a project-based setting. The authors note that this project was especially helpful in awakening “multiple ways of knowing to all students through varied literacy sources”

(pg. 40). The act of creating curriculum helped pre-service teachers adjust their classroom practices and overcome their apprenticeships of observation. Because of this study's focus on pre-service teachers, it is unclear whether the process of creating curriculum would have similar effects on practicing teachers, given the time and policy constraints in the school.

In a mixed-methods study of the impact of teachers' participation in collaborative professional development, Poekert (2012) showed that work done in PLCs increases teachers' ability to support higher-order thinking and cognitive development (p. 102). The author used classroom observations of kindergarten through second grade teachers who were chosen by their principals to participate in the study. The observations were guided by a Likert-scale protocol to measure developmentally appropriate teaching practice. The author also used qualitative data from interviews, observations of PLCs, and artifacts to triangulate the data. The quantitative data showed that there was a significant change in teachers' practices in instructional support and student engagement. Teachers who did not participate in the PLC did not demonstrate similar growth. Though the author claims that the study provides evidence of specific changes in teacher practice (p. 115), these changes are generalized into categories of emotional support, classroom organization, instructional support, and student engagement. Observational data are presented in a table that presents bulleted instances of teacher practice, but does not show how these practices are changed as a result of the teachers' participation in the PLC.

Professional teacher development in which information is presented by a facilitator and teachers are passive recipients is minimally effective (Theriot & Tice, 2009). Similarly, using scripted and basal programs limit teacher growth by constraining them to a script and deemphasizing the need for professional growth (Valencia, Place, Martin, & Grossman, 2006). Instead, teachers who are active learners in PLC settings use systematic inquiry to improve their

practices and to grow as professionals. Studying the practice of other teachers and themselves by videotaping lessons is one way teachers can actively increase knowledge of practice. Activities such as creating curriculum led to deeper inquiry on the part of teachers as measured by the authors. The process of inquiry about actual observed practices leads to change in practice. There is a need for more specific research regarding the results of video study, lesson study, and curriculum creation and how teachers change their practices during and after participation in these activities.

Teacher identity and efficacy. In his most recent book, DuFour (2015) applauds the work done by teachers and suggests that the professional teacher in today's school climate must overcome isolation, change assessment practices, and end the tradition of avoiding adult discomfort. Teachers must overcome their discomfort and make their work public. The idea of "deprivatizing" practice has also been used in PLC research (Vescio, Ross, & Adams, 2008). Deprivatizing practice represents a shift in the professional role of teachers from that of an isolated practitioner to one who relies on the knowledge and skills of his/her colleagues while responsibly examining his/her own knowledge and skills to share with the learning community.

Servage (2009) challenges this assumption. In a study of PLC literature, the author proposes that a heavy emphasis on data and accountability undermine the potential for the PLC to act as a site for moral deliberation or education for social justice. Alternative purposes for the PLC do not undermine the ultimate goal of student learning, but they suggest that student learning is correlated to teacher identity and how that identity influences teachers' practices. Those purpose also lend credence to the sociocultural theory that professional teacher identity is constructed based on the experience of the teachers through their interactions with other teachers and students.

Hoffmann-Kipp (2008) asserts from a sociocultural standpoint that teacher identity “...can bridge the sociocultural context with the act of knowing” (p. 162). The professional identity of teachers is grounded not in their ability to be technically efficient in analyzing and responding to student data, but in understanding their relationship to the students and the curriculum and how that relationship affects student learning. Assuming that professional teacher identity is socially constructed, Correa, Martinez-Arbelaiz, and Gutierrez (2014) found that pre-service teachers build their identities through communities of practice. The participants in that study questioned and reconstructed their professional identities through the conflicts and compromises they experience in their communities of practice. Jewett and MacPhee (2012) recommend that teachers create opportunities for learning by establishing partnerships and specified times to learn from partners, such as in a PLC. Studying a PLC of experienced teachers may contribute new knowledge about how teachers examine and modify their professional identities.

Lesson study is a process by which teachers study a single lesson or group of lessons in depth. Mintzes, Marcum, Messerschmidt-Yates, and Mark (2013) compared self-efficacy of an experimental group of elementary teachers who participated in PLCs that included lesson demonstrations and lesson studies with a control group of teachers from a neighboring district who did not participate in the PLC. A measurement system (Teaching Science as Inquiry) was used to determine teachers’ self-efficacy as reported on a Likert scale. These data were triangulated with data from interviews of teachers. Though both groups demonstrated growth, the experimental group showed a more significant improvement in the scores on the quantitative measure of efficacy and reported greater changes in teaching practices. The findings suggest that participation in lesson studies in the PLC increases teachers’ self-efficacy. Data on change in

teacher practices were limited to the self-reporting of the teachers in interviews. How teachers changed their practices cannot be determined from the research.

In a comparative study of Finnish and English primary PLCs, Webb, Vulliamy, Sarja, Hamalainen, and Poikonen (2009) used qualitative data from interviews with teachers to determine how culture influences the nature of the PLC. The similarities between the two countries included understanding the benefit of collegiality and the change from hierarchy to collaboration. The authors make the argument that in an already high-performing Finnish system, the PLC promotes the well-being of teachers while in the English schools, teachers' learning was directly linked to the government's standards agenda. Finnish PLCs were more democratic and equitable, but constrained by lack of development opportunities. These opportunities were more abundant to English teachers because of the achievement-focused policy. The authors' findings suggest that in a data-oriented and achievement-focused environment (England and U.S.), equity can be an issue in the PLC based on the culture of the school and teachers' perceptions of their roles in the PLC. This study used existing interview data and did not include observations to verify that data. It is not clear whether teachers in the English system could overcome the pressure of accountability and achieve the level of equity shown by the data from Finland.

Research from a PLC in China shows similar results. Song (2012) used survey data to show that PLCs help teachers feel more empowered and make them more receptive to curriculum reforms. The author sampled 1,611 teachers from thirty-two high schools in China on three different four-point scales: PLC, receptivity to curriculum reform, and empowerment. The PLC scale was used to determine the extent to which a PLC had been established. The receptivity to curriculum scale measured teachers' receptivity to new curriculum. The teacher empowerment scale measured teachers' feelings of empowerment. The experiment gave

quantitative justification to the claim that teachers felt more empowered as a result of their participation in a PLC. It also showed quantitatively that teachers were more receptive to curriculum when they participate in a PLC. The authors suggest that these results arise from teachers' feelings of being participants rather than recipients of reform efforts. It is not clear from this study whether teachers were involved in creating or changing curriculum or in what way the teachers would use their empowered status. The structure and tasks of the PLC are also not discussed.

According to the studies reviewed in this section, participating in a PLC increases teachers' feelings of efficacy. The studies are mute on the effect of participation in a PLC on teacher learning and on change in practice. Promoting teacher efficacy is an important step in utilizing the PLC to increase teacher knowledge and to bring about desired changes in practice. However, more research needs to be done on how teachers go from feeling like professionals into learning as professionals and changing their professional practice.

Summary of empirical framework. This section focused on literature about integrated curriculum and about teacher learning in the PLC in three categories: changes in beliefs and pedagogy, changes in practice, and identity and efficacy. The continuum from efficacy to pedagogy to practice is based on the idea that teacher learning revolves around improving pedagogical content knowledge (Darling-Hammond, 1997; Grossman & Schoenfeld, 2005; Shulman, 1986) that is directly applicable to classroom practice. Participation in PLCs allows teachers to manage policy mandates and professional knowledge of practice collaboratively, rather than in isolation. Teachers can enact what they learn from their colleagues in their classrooms, and embrace changes in practice rather than relying on less effective routines such as

repetition or basal programs. The act of creating authentic curriculum in the PLC supports these ideas.

Future research is needed to examine evidence of the impact of PLCs on teacher learning and teacher practice (Vescio, Ross, & Adams, 2008) and on how the PLC impacts teacher identity. Much of the work in PLC research has used qualitative methodologies and mixed methods to examine the complexities of the PLC as a social phenomenon. The literature reviewed in this chapter demonstrates the need for an in-depth case study on growth of teachers' knowledge and resultant changes in their practices based on their participation in a PLC. An elementary PLC in which authentic, integrated curriculum is designed offered an opportunity for the kind of in-depth study of teacher knowledge and change in practice identified by this literature review.

Chapter Summary

This chapter is a review of theoretical and empirical literature concerned with designing integrated curriculum in the context of the PLC. The theory of constructivism guides the work of integration and curriculum design. The influence of CCSS and other policies and its impact on curriculum creation is reviewed. A working definition of the PLC is explained, as are the structural components of an effective PLC, according to existing literature. Empirical articles are reviewed that examine integrated curriculum and the effects of participating in PLCs on teacher learning, practice, and efficacy and identity.

The literature reviewed here supports the questions: "What is the process of creating and implementing integrated ELA/social studies curriculum in a PLC? How does the process of creating integrated ELA/social studies curriculum contribute to change in teachers' knowledge?

In what ways do teachers change their practices as a result of learning in a PLC?” This case study unveils some of the ways the participating teachers reflected on and changed their practices as a result of their participation.

Chapter Three: Methodology

This case study was conducted within the context of a fifth grade instructional team that used the PLC model to create curriculum that integrates social studies with ELA. Case study methodology was chosen in order to intimately investigate the processes of teacher learning and change in practice in the context in which these processes occur. Case study methodology has been used in other studies to understand the PLC process and its outcomes. This study adds to that body of knowledge.

In this study, I adopted the dual role of researcher and participant. Included in this chapter is a discussion of the advantages and disadvantages of that role. My assumptions and biases are reported and threats to validity are delineated. Furthermore, the advantages of my intimacy with the conceptual and empirical framework and with the school setting and teachers are discussed.

I collected data from four sources: PLC sessions, interviews, video analysis of lessons, and artifacts. Each of these sources is discussed in terms of its usefulness in answering the research questions and its limitations. The advantage of triangulating multiple data sources is also presented. Data collection took place throughout the second semester of the 2015-2016 school year. Analysis was concurrent with data collection in order to identify early emergent themes, was verified with member-checks, and was completed after data collection was completed.

Findings are reported as a case study. The findings reflect how the data from multiple sources, when triangulated, answer the research questions. Limitations to validity are discussed in the discussion section.

Rationale for Case Study Methodology

Reporting this research as a case study contributes to the body of knowledge about teacher learning in the PLC and changes in teacher practice that result from their participation. The case study method is chosen to “...observe and analyze others’ understanding and the process through which they enact language and literacy education” (Dyson & Genishi, 2005, p. 12). Case study methodology allows the investigator to understand a real life phenomenon in depth by observing and analyzing the phenomenon in the context in which it occurs (Yin, 2009, p. 18). Furthermore, case study methodology is useful in exploring the decision-making process of teachers and the implementation of those decisions (Schramm, 1971).

Methodologists have confirmed the usefulness and reliability of case studies generally (Iacono et. al, 2009; Loughran & Northfield, 1998; Samaras & Freese, 2006). More specifically, case study methodology has been used to study PLCs in numerous settings (Graham, 2007; Lewis, 2004; Richards & Bennett, 2011; Theriot & Tice, 2009) and is recommended by Vescio, Ross, and Adams (2008) as a valid methodology for exploring the work done in a PLC. While there is evidence of teacher learning in a PLC (Brodie, 2014; Graham, 2007; Pella, 2010), there is limited evidence of how that learning is put into practice beyond teachers’ self-reporting of change. The purpose of this study is to gain a new understanding of how participating in a PLC that creates curriculum contributes to teacher knowledge and how that learning results in observed change in practice.

This study examined the case of a fifth grade team, of which the researcher is a member. The opportunity to participate in the research as a participant and a researcher permitted a deep understanding of the process of curriculum creation and how it influences teacher learning and how teachers change their practices. Other case studies have been conducted in which the

researchers were also participants in various settings including private and public sectors (Evered & Reis Louis, 2001; Harris, 2001; Richards & Bennett, 2011; Samaras, 2014).

Changes in the school's (research site's) approach to curriculum permitted the work of curriculum creation and provided the unique opportunity to study it. The school did not have an adopted basal ELA or social studies curriculum, so administration approved of its being developed by teachers. Based on the literature review of teacher learning in the PLC, I identified a need for empirical evidence on the process of teacher learning and change in practice that results from that learning. The context of creating and implementing authentic curriculum offered a unique opportunity to study this process in depth.

Research Problem/Questions

To explore the nature of teacher learning and resultant changes in practice, the questions investigated in this case study were:

- 1) What is the process of creating and implementing integrated ELA/social studies curriculum in a PLC?
- 2) How does the process of creating integrated ELA/social studies curriculum contribute to growth in teachers' knowledge?
- 3) In what ways do teachers change their practices as a result of learning in a PLC?

Exploring how teachers work in a PLC to create authentic integrated curriculum offered an opportunity to examine a process in which teachers must share knowledge of content and pedagogy in two subject areas: ELA and social studies. Teachers also change their practices as a result of the learning done in the PLC. With the elimination of scripted ELA programs and the introduction of integration with social studies, teachers were not able to rely on a basal text or

routines as some may have done in previous experiences. The process of creating authentic curriculum presented an opportunity for the teachers to examine their practices and for the research community to gain insight into the process.

Emergent themes were based on my understanding of the reviewed literature (Miles & Huberman, 1994). As was discussed in chapter two, curriculum components of problem posing, inquiry, discussion, and vocabulary helped me identify themes in that domain. In the domain of teacher learning, teachers' content knowledge, pedagogical knowledge, beliefs about students, and their relationship to the curriculum emerged as consistent themes. Finally, elements of the PLC such as efficacy, theoretical and pedagogical shifts, and changes in teacher practice were themes in that domain. Theme generation and coding were driven by the reviewed literature found in chapter two and by case study methodology discussed below.

Methods

Context of the study and participants. To answer the research questions, a fifth grade PLC that creates authentic ELA curriculum integrated with social studies was studied. The participants for this study were four veteran fifth grade teachers, including myself, who teach at a Title-1 urban elementary school in the Southwest. The school offers 100% of its students free breakfast and free lunch. The school's population is 86% Hispanic, 6% black, 5% white, and 3% other ethnicities. Fifty-seven percent of the school's students are identified as having limited English proficiency. The fifth grade PLC was composed of four members, including me. The others were Anna, a colleague with twenty-three years of teaching experience who "looped" with her students from fourth grade; Judith, who transferred from Australia and had prior experience with PLCs there; and Harriet, who is from Chicago and taught middle school math there (These names are all pseudonyms).

Prior to the 2014-15 school year, the administration and more than half of the teaching force was replaced at the school. Because of such a high turnover, previous practices at the school site have little bearing on current classroom and administrative practices. Experienced teachers who transferred from within the district, including myself and one other fifth grade teacher, have experience with teaching ELA from a basal program, Harcourt Trophies (Harcourt, Inc., 2007). Reliance on a scripted ELA program has created an environment in which teachers do not gain experience creating curriculum. Also, the teachers who have transferred from within the school district have worked in grade level teams that were focused on data analysis and assessment planning, rather than in curriculum design.

As of the 2015-16 school year, the school had adopted a PLC model, which included sending a member of each grade level team to a professional conference, led by PLC researchers Richard DuFour and Robert Eaker, over the summer. I was the representative from fifth grade. The administration expected that each grade level would implement their PLC according to the learning done at the conference and in individual reading. Teachers were expected to take an inquiry stance in their PLCs based on this learning. As a member of my PLC, I also had the opportunity to contribute what I had learned about the PLC as a result of developing the framework for this project.

As part of our PLC agenda, fifth grade developed and implemented an ELA curriculum that was integrated with science and social studies. This study focuses on the social studies portion. For fifth grade, the social studies curriculum required by Nevada State Academic Standards is American History. Our grade level had in its possession materials including American History textbooks and trade books, but the work of integrating with ELA was done in the PLC. We designed project-based units that included instruction in comprehending

informational text (Curwen, Miller, White-Smith & Calfee, 2010; Moss, 2005; Richards & Bennett, 2001;) and vocabulary (Bennett, 2012; Hairell, et al., 2011; Shanahan & Shanahan, 2014). Though writing was a component of many of the projects, writing standards are addressed in a separate block of the school schedule, and are not studied here. Assessment was based on student performance in completing projects and included grading of authentic assessments of Common Core informational text and vocabulary standards and social studies content (Ornstein & Hunkins, 2009). The process of curriculum design and implementation allowed me to observe changes in teacher knowledge and practice.

The role of each teacher was to identify student learning goals using the CCSS, design relevant curriculum, and respond to student learning during and after the curriculum had been taught. There were no hierarchical or specific task-related roles in the PLC; each teacher was expected to contribute based on individual strengths, knowledge, and abilities. The PLC was primarily constructed of the fifth grade team, with periodic attendance by and input from an instructional coach. This coach did not participate in the curriculum design process. Members of the PLC collaborated under a system of shared values and norms, focusing on student learning, reflective dialogue, and deprivatizing practice (Vescio, Ross, & Adams, 2008).

In January, the PLC worked to develop integrated curriculum, gather instructional materials, and plan instruction. Throughout the semester, the PLC continued to develop new curriculum while also reviewing previously taught lessons and student achievement on assessment pieces. These PLC sessions not only focused on developing new curriculum, but also focused on analyzing student data to determine if outcomes of the previously designed curriculum had been met (Bausmith & Barry, 2011). Teachers identified student needs,

formulated clear objectives, analyzed related student work, planned further instruction, and reassessed based on areas of need (Saunders & Gallimore, 2009).

Structure and processes of the meetings depended on the weekly agenda, which varied based on instructional needs. In the meetings in which the integrated curriculum was developed and analyzed, the team: 1) designed the curriculum unit (Gwekwere & Buley, 2011; Lewis, 2004); 2) reflected on previously taught curriculum using vignettes and artifacts (Allen, 2013; Brodie, 2014; Pella, 2010); and 3) revised and redesigned new units based on the previously developed curriculum units and teachers' experiences in teaching them. It should be noted that lessons were videotaped for study by the teachers in the PLC, not by the researcher solely for this study, though the researcher used data from selected lessons that had been videotaped.

Role of researcher, assumptions, and subjectivity. The typology for this case study is teacher research. Teacher research is defined as systematic intentional inquiry by teachers about their own school and classroom work (Cochran-Smith & Lytle, 1993). The emic nature of teacher research places the research in the hands of teachers who are immersed in their professional roles, rather than in the hands of researchers who maintain a scientific disinterest in the name of maintaining objectivity. Teacher researchers are by nature highly involved in the work of institutional change. This does not mean that their subjectivity must interfere with legitimate empirical research.

Rather than being restrictive, education research methods are chosen for their appropriateness in the type of research to be done in this study. Identifying researcher bias and proper coding and analysis allowed the researcher to be a subjective participant but a neutral reporter. Demonstrating a clear understanding of that role is the purpose of this section.

I worked both as a participant and a researcher in this case study. As a participant, I attended and contributed to all PLC sessions as an equal member, not in a hierarchical leadership role. The idea to use integrated curriculum creation to investigate teacher learning was generated from my eight years of experience teaching fifth grade and integrating ELA with social studies for five of those eight years. Though I brought content and pedagogical ideas to the PLC as a result of my prior experience with integration, my role in the PLC was necessarily as an equal contributor (DuFour, 2004; DuFour & Eaker, 1998). My expertise did play a role in the contributions I made to the PLC, but only in the context of contributing to creating the most effective curriculum we could collectively conceive, which was true for all participants.

As a researcher, I was responsible for developing data sources, data collection, and analysis. Another researcher participated in part of the data collection (interviews) and data analysis. I took the PLC agenda minutes and recorded and transcribed the dialogue. Another researcher conducted the initial and final interviews, while I conducted the member checks. I collected data from artifacts. The outside researcher was used in the instances described in order to increase validity and reliability (Miles & Huberman, 1994).

I was also responsible for building in safeguards to minimize personal assumptions and biases throughout the research process (Patton, 2002). For example, if I personally identified a source of bias or if bias was identified in member-check interviews, these instances are recorded as they are met. Specific possible researcher biases are noted in the discussion section. I was also responsible for the data analysis after coding. Finally, I was responsible for reporting findings and identifying limitations of the study.

Dependability refers to a study's ability to remain consistent across time and among researchers (Lincoln & Guba, 1985). A deep understanding of the setting of the research aids in the study's dependability. Because I was a participant in the research as an active member of the teaching staff, my engagement with the research enhances its credibility. Following the suggestion of Cresswell (2007), I was engaged in the research as a researcher and participant throughout its duration, I was persistent in my observations, and I was immersed in the culture of the research setting.

My dual role as researcher and participant influenced my biases and assumptions in conducting research. As a participant in the research, I brought my prior theoretical and practitioner knowledge to the PLC. I used several procedures to ensure that my assumptions did not unduly influence data accumulation or analysis. These procedures included explicitly uncovering my biases with other participants during the PLC and member checks with other participants during data analysis. Along with member checks, I also reported preliminary findings to a critical colleague (co-researcher) who may have been able to offer alternative explanations (Yin, 2009).

Throughout the data collection process, I was explicit in my interactions with colleagues when my biases as a researcher potentially interfered with the work done in the PLC. These instances are noted in the coding and analysis of the data. To do this, I immersed myself in the literature to identify points of conflict in my dual role of participant and researcher. As an example, at the end of one of the PLC sessions, I was excited about some of the things we said because of their perceived usefulness for this study. I said so explicitly, as is shown in the transcript of the session. As another example, throughout the PLC sessions, I contributed curriculum strategies to the creation process and offered suggestions to maintain the flow of the

PLC, but I did not dictate classroom practices to other teachers or develop a PLC protocol to be strictly adhered to that was based on my research for this project. Besides violating the collaborative nature of the PLC, these would also have invalidated the study of teacher change.

I relied on the kind of reflection represented in Richards and Bennett (2011). The authors of this case study were also the participants. In their reporting, they took an inquiry stance, presenting their findings as a dialogue driven by questions. I do not report my findings as a dialogue, but I feel I maintain an inquisitive, rather than authoritative, stance throughout my analysis and findings. My inquiry began with the interviews with the other participants, which was driven by questions (Appendix A). Throughout the subsequent member check interviews (Appendix B), I used questioning to verify my assumptions, to uncover my biases, and to maintain an agnostic stance in relation to reporting findings based on the research questions. Throughout the coding process, I identified prejudices and verified them with member checks.

After identifying my prejudices during the collection and/or coding process, I identified my presuppositions so they did not intrude on or contaminate my data. I used an interview protocol so I would not lead participants into providing answers that I may have preconceived based on my biases and assumptions, though the interviews were open-ended to allow themes to emerge that may not have been expected. To clarify, I welcomed unsolicited input from teachers that may not have been specifically contained within the interview protocol questions, but I did not ask leading questions or offer statements of my personal beliefs. For example, in the first member check interview, I informed participants of my preliminary findings in terms of open coding. Upon doing this, I asked them to confirm or disconfirm those preliminary findings and to offer further insight that would improve the study. I did not encourage them to simply agree or disagree. In this way, I conducted member checks (Hays & Singh, 2012) with the participants

throughout the data collection/coding process to ensure my analysis of the qualitative data was not misconstrued by my preconceptions. There was one official member check interview halfway through data collection and a focus group interview after our final PLC session. I also periodically discussed my coding with my colleagues during our informal conversations at lunch or after school. These discussions were not recorded as data and were not used to generate findings, they did not aid in generation of codes or subthemes, but they did help to clarify codes and subthemes that had been identified during the research process.

Prior to this study, my experience as a teacher included autonomously developing integrated curriculum for my own classroom and sharing that curriculum with colleagues, but not in a PLC setting. My role as a doctoral student has provided me with more experience than my colleagues in applying theoretical/empirical research to my classroom practice. I view my prior knowledge as being advantageous to my participation in the PLC rather than as being detrimental to my role as researcher.

I believe that the transfer of teacher knowledge into practice, especially through the process of authentic curriculum creation, has not been adequately represented in the literature. Therefore I also believe I was able to suspend my preconceived assumptions in favor of my desire to investigate this process. Though my research questions were grounded in the empirical literature, I did not have experience with the transfer of teacher learning to practice outside of my own personal experience. I had not studied, or even deeply inquired, how my colleagues transferred knowledge into practice. The lack of in-depth knowledge of this subject prior to this study allowed me to approach it as a curious participant rather than a knowledgeable expert.

My primary assumption before data collection was that teachers would experience positive changes in their practices in fundamentally similar ways. Based on my personal experience in creating and enacting integrated curriculum and knowledge of the literature, I assumed teachers would report that they observed increased student learning (Rosler, 2008; Saunders & Gallimore, 2009; Vescio, Ross, & Adams, 2008) and motivation (Guthrie & Wigfield, 2000; Moley, Bandr, & George, 2011; Richards & Bennett, 2011). However, I did not make an assumption regarding what ways individual teachers would be able to change their classroom practices. Our roles as professionals allow for variations in individual practices despite collective collaboration on curriculum: the teachers at our site are free to use their own pedagogical judgment and are not expected to teach identical lessons. Therefore, it was necessary to observe teachers' practices, discuss those changes with teachers in interviews, and report on the triangulated findings. The triangulation method guards against my preconceptions about how teachers change their practices and verifies teachers' self-reports about those changes.

Data sources and collection. Data include PLC agendas and minutes, interviews with the PLC participants, videotaped lessons, and artifacts such as student work and sample assessments. Each of these data sources has been chosen for its usefulness in generating themes of teacher learning and change in practice based on the literature reviewed in chapter two (Table 1). All data sources were coded, analyzed, and verified by member checks and triangulation methods. This section explains how each data source was collected and used to answer the research questions.

Table 1: Data Sources: This table represents how each data source was used to answer the research questions

| | Research Questions | | | | |
|---------------------------|---|---|--|--|-------------------------------------|
| | Q1: Creating Curriculum | Q2: Teacher knowledge | Q3: PLC development | Time and frequency | Place |
| PLC Sessions | Teacher language in creating curriculum Successes/challenges from the classroom as reported by teachers Discussions of curriculum | Specific instances of discussion of teachers' knowledge | Specific instances of discussion of how teachers' practice has changed Collaboration on change in practice: suggestions to teachers from other teachers | Weekly Sessions. Only sessions which addressed ELA/social studies are were used. | Classroom of PLC team member |
| Interviews | Teacher conception of integrated curriculum and change in conception over time Teacher conception of creation process | Specific interview questions related to this questions Open-ended discussion of growth in teacher knowledge Conception of efficacy with PLC process | Specific interview questions Open-ended discussion of change in practice Conception of efficacy | Initial interview: beginning of semester Member check interviews | Rooms of teachers being interviewed |
| Videotaped Lessons | Evidence of implementation Was the work of the PLC implemented in the classroom setting? | Instances of teachers actively employing pedagogical/ content knowledge in context of lesson | Verification of teacher change as reported in interviews/PLC sessions | One per classroom, three total | School site: classroom |
| Artifacts | Evidence of student connections | N/A | Confirmatory evidence of PLC findings | Brought to PLC session by teachers, selected by researcher | School site |

PLC Sessions. PLC sessions occurred weekly throughout the school year and lasted approximately one hour. As I was one of the participants in the PLC, a specific process of gaining entry was not necessary. Hairon and Dimmock (2012) warn that PLCs are less effective in a hierarchical setting. Therefore, as part of the informed consent, I explicitly reminded participants that though I was researching our work, I was not in a position of authority when it came to the actual work we did. In fact, placing myself in a position of authority or creating a hierarchy within our PLC would have invalidated the results of this study. Furthermore, because the work in the PLC was grounded in inquiry, all participants were researchers into their own practices. As shown in the transcripts of PLC sessions, my role as researcher did not interfere with our work of creating curriculum or developing the PLC.

Data were only collected from those sessions that focused on the integrated curriculum. Data from recorded minutes (Appendix C) of the PLC sessions were used to understand challenges and successes of implementing the integrated curriculum, as per the research questions. Investigating teachers' common and individual approaches to instruction as discussed in the PLC allowed me to identify themes related to growth in teachers' knowledge and change in practices. The minutes of each PLC session that dealt with integrating ELA and social studies were recorded and transcribed by me.

Interviews. In addition to data from the PLC sessions, periodic interviews were conducted with the participating teachers outside of contracted teaching hours. The interviews were conducted by me (member checks) and another researcher (initial and focus group interviews). At the beginning of the research process, I presented and explained the informed consent process. An informed consent document was used (Appendix D) and I reviewed this document in person with the participants. Participants' identities are changed to pseudonyms in

the data reporting process (except mine). Transcriptions from the interviews are kept in a secure location. I completed all transcriptions myself. Access to any videos or audio recordings is restricted to me, my colleagues, co-investigators, and our administrators. When the research was completed, all research items were locked in an office, and will be kept for five years. Digital records are encrypted and will be erased at the end of those five years. As a step in the member check process, data were reviewed with the PLC participants throughout the coding and analysis process.

The initial interviews were focused interviews (Merton, Fiske, & Kendall, 1990) designed to generate a picture of teachers' perceived roles in the PLC, their perceived purpose of the PLC, and their expectation of how participation in the PLC would increase their knowledge and change their practices (see Appendix A). They also provided an understanding of teachers' prior classroom practices that help determine changes therein. The purpose of the focused interview was to create a formative understanding of teachers' practices before designing integrated curriculum. This formative understanding informed the themes of teacher change that emerged through the research process.

In mid-semester, the research process turned to gathering evidence of teacher change based on themes from the formative interview as well as from evidence from the agendas and minutes of the PLC sessions, recorded lessons, and member-check interviews. Semi-structured interviews were used (Merriam, 2009). These interviews used a combination of predetermined questions about teacher learning and practice and improvised discussion, which enabled me to respond to perspectives that emerged in the course of the interview. This interview data serves two purposes: it is triangulated with observational data from lessons and artifacts, and it is used to verify emergent themes identified by me through member checks. In these ways, data from the

interviews help deepen the understanding of how and what teachers learn in the PLC sessions, and of how they used that knowledge to change their classroom practices. I continued to gather data from these sources throughout the remainder of the spring semester.

At the end of the data collection process, a final focus group interview (Appendix E) was conducted by an outside investigator to determine how teachers created integrated curriculum that connected ELA to social studies, how connections were made between those content areas, and what elements of the PLC changed teachers' knowledge and practices. A researcher outside of the PLC team conducted the interview in order to enhance trustworthiness of the data (Yin, 2009). Having an outside researcher also allowed me to adopt the role of participant during the data collection process. An unforeseen circumstance prevented Anna from attending the focus group interview, so she submitted her responses to the questions in writing.

Lesson videos. Part of the agenda of the PLC was to videotape lessons and to analyze them to increase knowledge of practice (Valencia, Place, Martin, & Grossman, 2006). This existing data was also used in this study to verify and refine the themes of teacher change that emerged from the other data sources. Only the lessons that feature social studies integrated with ELA were used. There were a total of three videos from three different classrooms. These were analyzed in terms of how teachers implement or do not implement knowledge and practices that were shared in the PLC into their professional practice (Rosler, 2008). These concurrences and/or contradictions contribute to a richer picture of how teachers enact learning from the PLC into their classroom practices.

My purpose in analyzing the videos was to verify that the themes that emerged from the analysis of PLC and interview data were present in the teachers' classroom practices. Key

concepts such as comprehension of informational text, content vocabulary acquisition, and other themes from the discussion of curriculum in chapter two were noted. I also looked for evidence of themes based on the teacher knowledge and practice section of the PLC literature review. Student responses to questions, reactions to lessons, and activity in individual work provide evidence of understanding, which determines how the teacher is implementing learned strategies, including challenges and successes. The video data helps support findings in the areas of content knowledge and PCK by verifying teachers' statements in PLCs and interviews with recordings of their actual practices. In this way, data shows how the work done in the PLC is reflected in teacher practice, offering another source of data for triangulation (Miles & Huberman, 1994).

Artifacts. Artifactual data was used as “physical traces” (Merriam, 2009) that supplement interview and observational data. Sources of artifactual data are student work, such as examples of completed projects and assessment data, brought to the PLC by the teachers (Curwen, Miller, White-Smith & Calfee, 2010). I retained these artifacts of copies of them as my data source and returned them upon the completion of the study. This data helped me to understand the themes of teacher learning and classroom practice by examining the tangible results of the work done in the PLC sessions (Allen, 2013; Poekert, 2012). Emergent themes were verified from these tangible sources through the process of triangulation.

Data analysis/coding. Analysis and coding took place after initial data was collected and continued throughout the remainder of the data collection process. Final analysis took place after all data had been collected. Data were analyzed in relation to the research questions, based on the literature reviewed in chapter two. Findings are reported as a case study. This section explains how each data source is coded and analyzed.

PLC sessions. Data from the recorded minutes of the PLC sessions was open coded (Merriam, 2009). During the open coding process, I searched for emergent themes of teacher learning and change in practice. I did this by examining the transcripts of the interviews (initial and member checks as they were held) and the PLC sessions. In order to generate initial categories, I began with a rereading of the theoretical framework that drives the research questions. With this framework in mind, an initial reading of the transcripts led me to identify four major themes, labeled PCK Complexity, Beliefs about Students, PLC Process, and Curriculum Design. I used these themes to inform the process of axial coding.

After initial categories were generated from the open coding process, I moved the process to axial coding (Corbin & Strauss, 2007) in which I narrowed the categories into groupings based on the framework from chapter two. This was done in order to go beyond descriptive coding to reveal meaning through interpretation (Merriam, 2009). For the axial coding process, I searched for sentences or phrases in the transcripts that fit each major theme identified in open coding. For example, in the first PLC session, I identified the sentence, “Because we read chapter 4 together, I think this is going a lot better,” as belonging to the PCK complexity code. Because no formal protocol was used for defining sentences and phrases, these data were not used to generate findings. The codes were used to help me understand possible themes as answers to the research questions and to identify trends in our conversations in the PLC sessions. They were also useful in identifying patterns in conversations as the PLC developed, which is shown in the discussion of the findings. This process immersed me in the data and helped me to decide how to group the subthemes that I identified as part of the axial coding process.

Next, these sentences and phrases were grouped in terms of the research questions, not in terms of the open codes. In this way, the open coding process allowed me to identify themes that

would possibly answer any of the three research questions then narrow those themes to focus specifically on each question during axial coding. The categories were named and labeled according to the research questions. The subcategories were labeled as follows:

Research Question One: Curriculum Process

- 1) Teachers and Students Connect Curriculum to One Another
- 2) Teachers and Students Connect Curriculum to Themselves
- 3) Curriculum Creation as Difficult and Time Consuming Process

Research Question Two: Teacher Knowledge

- 1) Teachers Examine Content Knowledge in Two Subjects Simultaneously
- 2) Teachers Demonstrate Connections Between Two Subjects for Students
- 3) Teachers Discuss Complexity in PCK

Research Question Three: PLC Process and Teacher Change

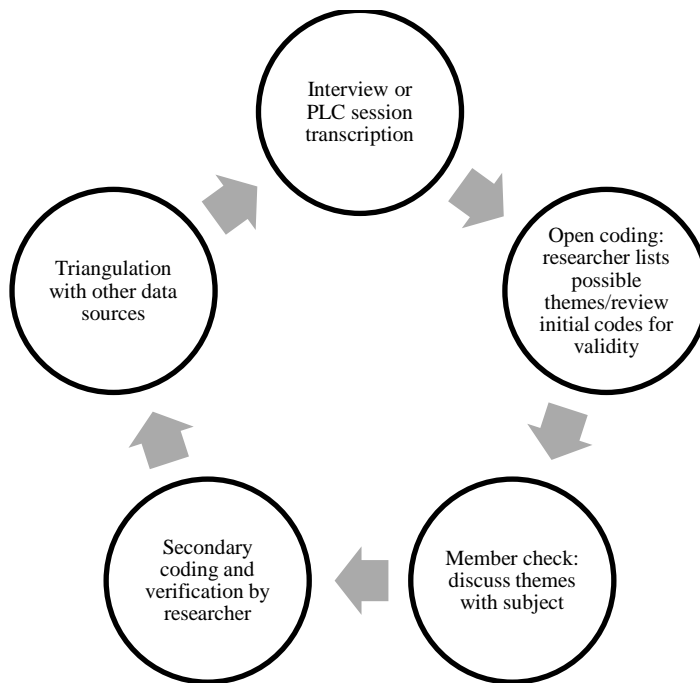
- 1) Teachers Learn About Each Other's Practices
- 2) Teachers Change Practices and Do Not Rely on Routines
- 3) Teachers Examine Beliefs about Students vis-à-vis the Curriculum

Moving from an inductive to a deductive stance, I used these themes to determine tentative answers to the research questions. I returned to these deduced themes and verified deductions made in member check interviews. Finally, the themes uncovered through the coding and member checking process, were triangulated with themes from the other data sources to ensure validity.

Interviews. The preliminary interview generated a formative source of open coding (Merriam, 2009). I used data from the initial interview to determine teachers' conceptualizations about their participation in the PLC, their professional learning, and their classroom practices. These data contributed to generation of themes during the coding process. After preliminary interviews, transcriptions of those interviews were coded into emerging themes to guide me beyond conventional descriptions and into the meaning and importance of the data as relates to the research questions (Haas Dyson & Genishi, 2005). Themes that emerged were organized and analyzed for evidence of teacher learning and transmission of teacher learning to practice, and were triangulated with the other data sources to ensure validity.

After initial open coding of interviews and early PLC sessions, interviews were conducted to verify the themes identified through the coding process and to clarify the initial data. At varied intervals, semi-structured interviews took place to elicit teachers' perceptions of how their learning and practices had changed throughout the semester. The interview questions are attached in Appendix B. These member check interviews allowed me to solicit feedback on the emerging findings from the participants (Merriam, 2009). The following diagram demonstrates the cyclical nature of the interview and coding process:

Figure 2. Interview and coding process.



This graphic demonstrates the cyclic nature of case study research. It requires constant revision and verification of themes and ideas with the participants. Testing emergent understandings is a necessary component of qualitative research (Marshall & Rossman, 1999), which is facilitated by member check interviews and artifactual evidence.

When the entire interview process was complete and themes were verified through member checks, another round of triangulation took place to increase validity. The final focus group interview was also used as a member check, to generate summative data, and to identify differences in the perceptions of the themes among the teachers. The themes that were uncovered are reported in relation to the research questions and the literature reviewed in chapter two.

Lesson videos. Video tapes of the recorded lessons were also open coded to identify emergent themes of teacher learning and change in practice and to verify initial themes that

emerged in coding interview and PLC data. The open coding process began with constructing categories identified by the researcher which were sorted and named according to themes identified by the researcher (Merriam, 2009), as was done with the interview and PLC data. Through open coding, categories were identified by the researcher according to the existing literature on teacher learning and change in teacher practice in order to be responsive to the research questions (Merriam, 2009). To ensure validity, these categories were used to structure the member check interviews as the study progressed. Finally, the coded data from the videotaped lessons was used during the axial coding process as evidence of themes applied in teacher practices. Themes discovered from this data source were triangulated with themes from other sources to ensure validity and verified through member checking.

Artifacts. Artifactual data collected from the PLC sessions was used as evidence of teacher practice and student connections between the content areas. Student work serves as evidence of themes that emerged in coding. These documents and artifacts facilitated triangulation of data by providing tangible evidence of teacher learning and teacher practice and helped to identify themes in the coding process. Examples of student work were useful in verifying themes of connections between the subjects and teacher practice regarding assessment.

Triangulation. Using multiple sources of evidence is a major strength of case study design and is much more necessary in the case study than in other types of research (Yin, 2009). In order to ensure validity, data from multiple sources were analyzed and triangulated. Triangulation was based on themes that emerged in the coding process, allowing findings to be supported by more than one source of evidence. Themes of teacher learning and change in practice were identified in coding and verified through member checks, lesson videos, and artifacts, creating a chain of evidence (Yin, 2009). This empirical evidence is used to

scientifically answer the research questions and contributes to the construct validity of the research.

In order to be credible, the researcher needs to demonstrate that the study is conducted in a way that the subject of the research is appropriately identified and described (Marshall & Rossman, 2006). Triangulation and member checks are in place to ensure credibility of this research project. Data were triangulated from multiple sources (PLC agendas, interviews, classroom videos, and artifacts). Member checks during interviews allowed me to share my thematic ideas with the other participants. This gave participants an opportunity to validate or invalidate my assumptions based on the themes I identified in coding. Finally, in analyzing the results of the research, I note the possibility of bias and limitations to the study. Difficulty in determining the results of teacher learning and resultant change is offset by the triangulation of several data sources.

Chapter Summary

This case study uses qualitative data from four sources to investigate the process of creating ELA curriculum that is integrated with social studies in a PLC and change in teacher knowledge and practice that resulted from that process. Case study methodology was chosen in order to investigate a real life phenomenon in depth by observing and analyzing the phenomenon in the context in which it occurs (Yin, 2009). This methodology has been employed to study the PLC in various settings, demonstrating its usefulness in investigating this phenomenon.

This study examines the case of a PLC of fifth grade teachers as they designed and implemented ELA curriculum that was integrated with social studies. Three research questions

were designed to explore this case. The PLC is in a Title-1 school with 100% of students receiving free breakfast and lunch and a high percentage of ELL students. The teachers had chosen to design integrated curriculum in response to changes in school, district, and national policy. As I was a teacher in this PLC, I was both a participant and a researcher in this study.

Data were collected from four sources: PLC sessions, interviews, videotaped lessons, and artifacts. These sources were chosen for their usefulness in answering the research questions. Analysis consisted of a process of open coding to identify emergent themes, verification of themes through member checks and triangulation among data sources, and deductive reasoning based on triangulation and verification. Findings are presented as a case study.

The research done in this setting must be transferable to other settings in order to be valid. This begins by referring work done in this study to the theoretical and empirical framework found in the existing literature. Case study research has been done to investigate integrating curriculum (Lewis, 2004; Richards & Bennett, 2011) and teacher effectiveness and PLCs (Graham, 2007; Theriot & Tice, 2009). Case study methodology has also been recommended as useful for further study of PLCs and teacher knowledge and practice (Vescio, Ross, & Adams, 2008).

There are limitations to this study. The first is that the case being studied is isolated and small. Findings resulting from studying a PLC of a single grade level in a single school are difficult to generalize. My dual role as researcher and participant may have influenced several sections of the research process. First, I brought assumptions to the research process as listed above. Second, there is a chance that I could have influenced the work done in the PLC based on desired outcomes of the research project. Another limitation to the study is that it examines only

integration of ELA and social studies. The team also designed curriculum that integrated science with ELA and curriculum for the informational text standards. This work was done during the study, but was not included in this study.

Before initiation of this study, it was approved by the Institutional Review Boards of both UNLV and the school district in which the research site was situated.

Chapter Four: Findings

This case study is constructed around data collected by a researcher/participant in a fifth grade PLC that designed ELA curriculum that was integrated with social studies content. The objective was to examine the process of creating integrated curriculum and the resultant change in teacher knowledge and practices and teacher identity development based on their participation in the PLC. Four sources of data were used to create a picture of teacher change: interviews, PLC sessions, videotaped lessons, and artifacts. Source selection and data analysis was guided by the research questions. This chapter presents findings based on the themes that emerged during the data collection and analysis process.

This chapter is divided into sections that align with each research question. The first section describes the process of theme development. Each of the three subsequent sections will address each research question, responding with themes that were discovered in the data analysis process. Referring to Table 1 in the previous chapter will show how each data source contributed to the findings for each question.

Initial Themes: Open Coding

During the open coding process, four major themes were identified: complexity in pedagogical content knowledge, beliefs about students' learning, PLC development, and the curriculum design process. During the open coding process, I aligned each data source with each research question. To aid with axial coding, after transcribing the PLC sessions I counted each phrase that was identified by each code. These instances are as follows for all sessions combined (see table 2). Table 2 demonstrates each occurrence from each PLC session. Following the table is an explanation of the tasks undertaken in each PLC session.

| Table 2: Phrase Count in Open Coding | | | | |
|--|--|------------------------|-----------------|---------------------------|
| PLC Session | Code Assigned by Researcher | | | |
| | PCK Complexity (Pedagogy and/or Content) | Beliefs About Students | PLC Development | Curriculum Design Process |
| Session 1: Creating brochures (2/17/16) | 12 | 18 | 9 | 32 |
| Session 2: Reviewing brochure unit (3/2/16) | 1 | 8 | 41 | 43 |
| Session 3: Creating menu unit (3/9/16) | 23 | 11 | 6 | 35 |
| Session 4: Finishing menu unit (3/10/16) | 21 | 5 | 12 | 72 |
| Session 5: Discussing menu unit/Planning play unit (3/16/16) | 97 | 7 | 18 | 46 |
| Session 6: Assessing menus/Refining play unit (3/30/16) | 48 | 15 | 31 | 10 |

The occurrences of identified phrases were used in analysis of the data to identify trends in teachers' conversations during PLC sessions. They do not stand as solid pieces of qualitative data, as the sessions varied in length and focus. They do, however, provide an idea of the shifts

in the topics of our conversations as we worked through the curriculum design process. These themes are not isolated. Many phrases are coded as several themes. For example, in our first PLC session, our discussion about how to create a unit included elaborate discussion about how our students would react to the activities we created. This led to assignment of the codes of “Beliefs about Students and Curriculum Design” to several of the same phrases.

In poring over the data, the themes listed above emerged as reflections of the theoretical and empirical framework constructed in Chapter Two. The theme of complexity in pedagogical content knowledge arose primarily through examining teachers’ discussion of their knowledge in the interviews and PLC sessions and through examining their practices from the classroom videos. The theme of beliefs about students arose as teachers discussed their students’ progress in the PLC sessions and in their discussions of their perceptions of students in the interviews. The theme of PLC development arose primarily from data from the PLC sessions and interviews. Finally, the theme of the curriculum design process emerged in the triangulation of all of the data sources. This theme was generated by observing the process of curriculum creation and implementation using the data sources.

These themes were then divided into sub-themes based on the research questions. For the question, “What is the process of creating and implementing integrated ELA/social studies curriculum in a PLC?” it was found that creating curriculum: 1) enables teachers and students to connect areas of the curriculum to one another 2) allows teachers and students to connect the curriculum to themselves, and 3) is a difficult and time consuming process. These sub-themes will be discussed in the section on curriculum creation (Question 1).

For the question, “How does the process of creating integrated ELA/social studies curriculum contribute to change in teachers’ knowledge?” it was found that the process of creating integrated curriculum: 1) allows teachers to examine their content knowledge in two subjects simultaneously, 2) allows teachers to demonstrate the connection between two subjects for their students, and 3) generates discussions of complexity in pedagogical content knowledge. These sub-themes will be discussed in the section on teacher knowledge (Question 2).

For the question, “In what ways do teachers change their practices as a result of learning in a PLC?” it was found that participating in a PLC: 1) helps teachers learn about the practices of other teachers, 2) helps teachers comfortably change their practices and rely less on routines, and 3) generates introspection on professional teacher identity. These sub-themes will be discussed in the section on PLC development (Question 3).

Creating Curriculum: American History

The first research question driving this case study was, “What is the process of creating and implementing integrated ELA/social studies curriculum in a PLC?” Teachers in this PLC worked together to develop and implement ELA units that integrated social studies content. Because of the historically linear nature of American History, the teachers decided to follow the pacing of the American History textbook, which was organized chronologically beginning with a study of the geography of North America, the native peoples of each region, exploration and settlement, colonization, and revolution. The final unit used for this study was the one on the American Revolution.

Each participant teacher was interviewed at the beginning of the study to determine their beliefs about creating integrated curriculum. This interview provided a source for understanding

teachers' conceptions about the process of creating integrated curriculum in the early stages of that process. For example, when asked about her interest in designing integrated curriculum, Judith noted that, "...if we can have an integrated curriculum, then, you know, they're [the students] seeing that one thing can be transposed into a number of different areas." This statement helped to develop the major themes for this research question and to look at how she elaborated on this answer in her interactions with teachers and students.

This section will proceed by demonstrating the process of creating a curriculum unit, its implementation by the teachers, and the final products created by the students. Reviewing the process of creating one unit will show the difficulty in creating new integrated curriculum. Discussion of the implementation and final results will show how students were able to draw connections between ELA and social studies and how they connected themselves to the curriculum.

Overview of the curriculum creation process. In creating each unit, the participants worked through the social studies content and developed projects that would be used to assess the CCSS ELA standards in conjunction with the social studies content. For example, in the first PLC that was transcribed, the teachers were working on a unit in which students would create travel brochures (Appendix F) for a region of the thirteen colonies. In this session, the teachers discussed the social studies content they desired the students to understand, and the ELA standards that would drive the students' research and development of the brochures. After a discussion of ELA standards, the teachers settled on three standards: R.I. 5.6 (Analyze multiple accounts of the same events or topic, noting important similarities and differences in the point of view they represent), R.I. 5.7 (Draw on information from multiple print or digital sources demonstrating the ability to locate an answer to a question quickly or solve a problem

efficiently), and R.I. 5.9 (Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably).

Through dialogue on standards and content, we decided to teach ELA content that would lead to mastery of those standards such as researching using textbooks and other sources and identifying similarities and differences in historical accounts and descriptions based on the social studies content of understanding the thirteen British colonies before they became a new nation. For example, Harriet immediately recognized that her students needed more practice in those specific ELA standards by noting her students' difficulty with social studies: "That's why social studies achievement is so low, that standard right there." She was indicating the research standard (R.I. 5.7), and that students have not had much experience in drawing from texts to complete projects. Building on her concern, I wanted to make sure we were teaching how to draw on *multiple* sources for research. Judith suggested the internet as a source, to which I agreed quickly.

After aligning the project to the standards, the teachers moved on to a discussion of how to assess the students' products (brochures) based on our learning targets for both subjects. The teachers, at Harriet's suggestion, decided on using a rubric to assess the brochures. We worked together to create a rubric that would delineate a score for each of the three ELA standards and to use the overall grade as a social studies grade as well. In creating the rubric, the teachers had to examine each of the standards in depth to determine the outcomes they desired, allowing the teachers to enhance their understanding of those standards. At first, Judith was worried that all the standards would be combined and would be difficult to delineate in the gradebook and for the students. I suggested that we create a section of the rubric for each standard being assessed. This produced confusion for both Harriet and Judith, who were examining the standards while we

were developing the rubric. This allowed us to reexamine the standards together, which deepened our collective understanding of those standards (ELA content) and of how to assess them. When the teachers were satisfied that we had created a system of assessment that would adequately represent what our students had learned during this project, we turned the discussion to the resources we would use for instruction.

Each teacher contributed suggestions to this aspect of developing the curriculum. Having taught a similar unit in the past, I had collected a stack of trade books on the thirteen colonies. Anna had already browsed a new classroom library that was purchased by the district and separated relevant literature for use in her classroom. Judith and Harriet located useful websites that the students could access without having to search on their own (a process which was discovered to take a lot of time in previous units, based on students' limited prior use of internet search engines). At the close of the PLC session, teachers reviewed their expectations and agreed to deliver the curriculum that was created.

Of course, the process was not complete at the close of the PLC session. The nature of this work requires that teachers maintain dialogue throughout the implementation of the curriculum. Because these conversations often took place informally, such as at lunch or after school, they were not recorded as data sources. However, it must be noted that in every unit, creating effective curriculum could not have been accomplished had it simply been drawn up in the PLC and never referred to during the actual teaching of the unit. As an example, during the brochures unit, teachers would visit one another's classroom to informally observe the students' progress in research and translating that research into the final product. This allowed teachers to observe each other's unique approaches to their own classroom instruction. Furthermore, it

allowed them to share pedagogical strategies that would help the students connect to the curriculum.

Video data of lessons in each classroom demonstrate the implementation of the curriculum that was created in the PLC. In a lesson taped in Anna's room, the students are observed working in small groups creating their posters while the teacher circulates throughout the room helping individual groups. Anna has a discussion with one group of students about how they are organizing their brochures. The students used a research "packet" that was designed by the teacher to help scaffold the organization of information. Each section in the packet contained prompts about each necessary component of the research (e.g. Describe the geography of the region; describe daily life such as jobs and schooling, etc.) that the students had used to take notes during the research component done on a previous day. For two days before the day of the taping, the teacher had already delivered lessons on the ELA standards (researching content, analyzing accounts for validity, integrating information). Now the students were given time to work in their groups to create their brochures. The finished brochures demonstrate the outcomes of these lessons. Though they were of varying quality and proficiency, the final brochures, created on tri-folded poster board, display both the ELA and social studies content standards that the teachers agreed upon in the PLC.

Similarly, video data from Judith's and my own classroom demonstrate delivery of instruction based on what was created in the PLC. In Judith's lesson, she works with small groups to help them read and evaluate the social studies content that they will include in their projects. She is seen directing students to sources other than their textbooks when they finish their group session with her. She is also seen examining their notes to help them determine which information is useful for their projects and how to organize their information to create a

well-structured brochure. The lesson recorded in my room is of me delivering a whole group lesson on researching using multiple sources and determining what information to use. I open the lesson by activating students' prior knowledge of the research process, based on lessons taught previously in the week. Students are chosen to use the week's vocabulary words, taken from the social studies content, in original sentences. Next, students discuss their research process with other students outside of their research group. After the whole group lesson, students join their groups to practice what was taught in the lesson by researching using their social studies textbook, trade books, and the internet.

Connecting the curriculum. The students' final products, which were used to assess the ELA standards and the social studies content, offer insight into the ways students and teachers connected the two curriculum areas. Using the scoring rubrics as a guide (Appendix G), one can clearly identify the components of all three ELA standards represented by the work of the students. The information displayed in the brochures, menus, and in the plays, was located by the students after teachers delivered lessons on the informational text standards. The social studies content is also represented logically and thoroughly, with information grouped into related categories, and without any unrelated information. Students used social studies content-area vocabulary throughout their projects. Although each brochure, menu, and play contained the components specified on the scoring rubric, no two were alike. The students who created them were free to reflect their personalities and their perceptions of the content in their final product.

It can also be seen that the students were able to connect themselves to the project, to "dwell" in the curriculum. Observing the video recordings of my classroom and Judith's, there is little off-task behavior and much conversation about research ("Where did you find that?") and design of the project ("That's a cool idea!"). The video from Anna's classroom shows that the

students begin independent work a bit chaotically, some examining the camera, some neglecting their work, but as she visits groups, the enthusiasm grows and students tend to the task at hand.

In order to teach their students how to connect ELA with social studies through the authentic curriculum, the teachers had to realize the connections themselves. In the initial interviews, teachers reported that they wanted to help their students make those connections. For example, Judith mentioned explicitly that "...by doing this [integrating the curriculum], we're relating it back to their experiences and now they can see that, 'Ah, this has something to do with all of these [subjects]' and they're beginning to comprehend." Anna, in her initial interview, noted that integration is a more accurate representation of what our students would encounter in real life. Harriet, who noted that her expertise was with math rather than ELA, discussed a desire to understand the connections that could be made between ELA and social studies: "So coming in teaching social studies for pretty much the first time, not very experienced with projects or teaching the curriculum or anything like that." Following up on this comment in her member check interview, Harriet noted that she had struggled to incorporate the ELA standards in a meaningful way into the curriculum. She also said that, "The two subjects complement each other well." For Harriet, the process of creating integrated curriculum and teaching it seems to have helped her to create some connections between the subject areas that she had not realized in the past.

In contrast to the findings from the observations and initial interviews, Judith and Harriet reported in the focus group interview that they did not perceive that their students connected ELA to social studies in meaningful ways. That was contrary to my perception, based on the work they did to complete research projects, that students had understood how research is connected to history. Harriet's comments are illustrative: "Between reading and social studies?

Basically none. They didn't connect it at all." Judith echoed this sentiment, with the qualifier that unless she specifically told the students the two are connected, the students did not demonstrate to her that they connected ELA with social studies. When prodded for their explanation of this phenomenon, the teachers cited the school's master schedule as the reason for the students' inability to connect subject areas. Judith says, "Personally, I think it's because everything is so compartmentalized. I've come in from, you know, a different system, so being here now for the year, it just feels like everything was...in its little block." She's referring to the school's color-coded blocks (red for intervention block, yellow for ELA, blue for math, purple for writing) in which teachers must only teach the subjects within their specified time frames. Therefore, students saw each subject represented in its color-coded block, and that is where it belonged, not to be connected to other subjects. For Judith and Harriet, the fact that the school schedule was compartmentalized became a major obstacle to allowing students to draw connections between subjects.

Difficulty in creating authentic curriculum. Another major finding is that the process of developing authentic units and assessments unique to the grade level is difficult and time consuming. This finding corroborates the findings of other studies of curriculum creation cited in Chapter Two (Hinde, 2005; Richards & Bennett, 2011). As was already noted above, the "creation" of curriculum did not occur simply in the PLC sessions. Extra time and conversation was required throughout the implementation of the units that were created in those sessions. While teaching the units, the teachers modified the curriculum they envisioned in the PLC based on informal conversations and sharing student work outside of the formal PLC sessions. For example, my classroom door is directly next to Judith's, so we engage in conversation at dismissal time. After bidding goodbye to our students as they left, we would engage in

conversations that ranged in topics from navigating the bureaucracy of a large school district to comparing our system to that in Australia. Among these conversations were many that focused on our progress through each integrated unit. Because the lessons and activities of the day were fresh in our minds, it allowed us to address concerns that may not have been addressed had we waited for the next PLC session. Through these conversations, we were able to adapt the curriculum to meet the needs of our students and ourselves.

The collected data show the complexity and time issue as well. For instance, in the third PLC that was recorded for this study, we worked to create a unit focused on the causes of the Revolutionary War in which students would choose tasks from a differentiated “menu” that would meet the ELA and social studies standards that we identified (Appendix H). Because of conflict over what tasks to include on the menu and whether to integrate technology, we were unable to complete the planning in a single PLC session. We continued the session the next morning during our preparation period. The process of creating this unit engaged us in a discussion of assessment, student choice, and technology.

When we first decided on a menu, it was not unanimously understood that we would use the menu to assess the standards. Judith was working under the assumption that the projects would be a tool for students to navigate the information and that they would be given an essay or multiple choice test at the end of the unit. Harriet clarified, “The menu would be the assessment, is what I understand.”

After clarifying that we would use the menu as the assessment, Harriet noted her confusion about what kinds of tasks would be required on the menu. As we began to discuss the standards in order to develop the tasks, I suggested that we finish this task on the next day. As I

was expressing my exasperation, the fire alarm went off, which hastened an end to our PLC, much to my satisfaction!

Upon continuing the discussion the next day, all four teachers contributed tasks to the menu. At first, Harriet was insistent upon including technology in the tasks she developed, noting that a goal of hers was to familiarize students with technology whenever possible. We had noted that in a previous project, we taught and assessed the standard that required students to use technology, and that it was not necessary to include it on this one. We also decided that some of the tasks could actually be completed by using technology without needing to assess its use, which led us to a discussion of student choice.

For one of the tasks on the menu, students were required to illustrate a main idea by using two texts that discuss the same topic. Harriet was concerned that students would not be able to locate another text at home and would not have time to use the internet or school library. I noted that the students could choose other tasks instead, which is a feature of the menu that we intended when we created it. As our dialogue continued, we created several tasks on our own (e.g. creating a crossword puzzle that uses the vocabulary list), some tasks that were modified from activities already in the textbook (e.g. creating a journal entry), along with a few that had already existed in the social studies textbook (e.g. cause and effect writing activity). The dialogue surrounding each of these menu items begins with a discussion of an activity, and then of what ELA standard we would teach to help students complete the activity. For example, when we decided to use an activity straight from the book, we realized we would have to teach the standard R.I. 5.5 (Compare and contrast the overall structure of events, ideas, concepts, or information in two or more texts). The reciprocal process of creating tasks and discussing the ELA standards required to complete them was an exercise that led us to a sufficient

understanding of content and reflection of pedagogy. But that process was extremely complex and difficult.

Of course, though we created the tasks on the menu, the curriculum was not complete. Before sending the students home for spring break with their menus, we discussed informally how we would scaffold the completion of these projects for the students. We decided on reading the chapter together and discussing the tasks on the menus with the students for two or three days before the break. We also decided to give students time to begin their work in class so they could have something to build on during their break. Though the data collected show that this unit was created in two PLC sessions, we also dedicated much more time informally to conceptualizing, discussing, and changing the unit as we taught it.

In the focus group, teachers cited another difficulty: they had a desire to connect all aspects of the curriculum, not just informational text standards and social studies. For example, Harriet discussed how we were able to include writing and language standards informally in our projects, but we did not assess those standards as part of the assessment pieces. We simply did not have enough time to deeply explore connections to the writing and language standards, as our time was consumed by creating projects and aligning them to informational text and speaking and listening standards. All teachers expressed hope that as we continue this process next year, we will increase the level and breadth of integration to include writing, language, and speaking and listening standards. Judith and Harriet also expressed that since their content knowledge in social studies grew immensely this year, they would be more prepared to connect those areas of the curriculum in the future.

Summary. Creating integrated curriculum, though difficult and time consuming, gave teachers the opportunity to connect social studies and ELA in ways they previously had not. Our students may have also connected the two subject areas implicitly, though two teachers reported that they did not observe that their students explicitly made those connections. Data from interviews and PLC sessions show the connections the teachers made between the two curriculum areas. As teachers created integrated units, they discovered how ELA standards could be taught and assessed using social studies content materials. In video recordings, teachers are seen delivering instruction on the ELA standards using social studies projects that they created in the PLCs, demonstrating the connections they made by modeling research in history and responding to student inquiry about history research.

Though teachers reported that they did not notice students making similar connections, data from videotaped lessons and completed projects indicate that students applied ELA content area skills such as researching and vocabulary acquisition. The students also demonstrated dwelling in the curriculum in their interactions with the texts, their projects, and each other in creating the brochures. Teachers cited the school's policy of color-coded subject-specific scheduling as impeding students' ability to connect areas of the curriculum because the schedule explicitly separates them. The block scheduling creates the image in the minds of teachers and students that each subject is separate from the others and should be taught in different ways.

Finally, creating authentic integrated curriculum is difficult and time consuming. Two of the teachers (Judith and Harriet) reported that they began with very limited knowledge of the social studies content. Anna's and my deeper knowledge of the social studies content was extended by the opportunity to share that knowledge with our colleagues. Instances of sharing and learning content knowledge were recorded several times during each PLC, as shown in the

transcriptions, which took time away from work on developing the lessons and projects. The process of creating and implementing the curriculum did not stop upon completion of the PLC sessions. Teachers used informal conversations at lunch and after school to refine their pedagogy, to clarify decisions made at the PLC, to discuss student reactions to the units, and to compare their current teaching to teaching they had done in the past. The teachers also expressed a desire to create units in the future that would allow them to make better connections between content areas by deepening their knowledge of the standards and how they could be used to create curriculum that integrated not only informational text and social studies, but also language, speaking and listening, writing, and even math.

Complexity in Teacher Knowledge

It was found that in creating authentic integrated curriculum, the complexity of pedagogical content knowledge (PCK) was a major factor. In coding the data, instances of pedagogical knowledge, content knowledge, and PCK as conceptualized in the theoretical framework in Chapter Two appeared frequently. In analyzing and sub-coding these instances, the theme of PCK can be divided into three subthemes to address the research question. The first is that teachers actively examined their content knowledge in both subjects simultaneously. The second is that development of integrated curriculum required that teachers connect their content knowledge of ELA with that of American History, and to demonstrate those connections for their students. Third, it was found that because of varying degrees of comfort with each content area, teachers relied on formal and informal discussions to drive growth in their PCK.

Content knowledge. Integrating ELA and social studies was a vehicle for teachers to explore and develop their content knowledge in each subject. At the outset of the study, the teachers generally seemed to have similar conceptions of ELA content and very different

conceptions of social studies. This section will proceed with the findings related to ELA content knowledge first, followed by the findings related to social studies content knowledge. Bearing in mind that these topics were explored simultaneously, these findings demonstrate that the process of creating integrated curriculum allowed teachers to examine content knowledge in two subjects simultaneously. This leads to the next section, which presents findings on how the teachers translated the connections they drew between the content areas into instruction that allowed their students to draw similar connections. The final section presents findings on complexity in PCK as discussed by the participants.

ELA content knowledge. The process of creating curriculum gave us an opportunity to examine our content knowledge in ELA. Each of us had different conceptions of fifth grade ELA content related to the units being studied based on our prior teaching experience. Through conversations in PLC sessions about standards, developing units, teaching them, and reflecting on them, we were able to explore our knowledge of ELA content deeply. It was found that a general progression of project->standards->content was followed in order to create the units. For example, in the causes of the Revolution unit, we chose to create a menu first. Then we discussed which standards would suit that kind of project. Through discussing the standards, we examined and expanded our content knowledge of ELA. This section describes our process of examining our ELA content knowledge.

In the initial interviews, we discussed the resources we had used to teach ELA in the past. It was evident that teachers connected the ELA content they taught to the resources they employed, though none explicitly discussed the actual ELA content that they taught. Every teacher mentioned that they culled resources from areas as varied as textbooks, videos, multimedia, anthologies, and the internet. Their language in answering the question, “What

resources or curriculum have you used to teach ELA in the past?” demonstrated comfort and ease with the content in this subject area. For example, Judith was eager to share her experience in Australia: “So, with the ELA, we’ve used everything... We’ve used the books, we’ve used videos, multimedia, yeah.” Though her inflection does not appear in the transcribed notes, Judith’s tone in the recording was excited and eager. Harriet, who had less experience teaching ELA, still demonstrated that she had sufficient knowledge of the content to locate curriculum materials when none were provided by her school. Anna’s remarks indicated that based on her experience, she was familiar with many curriculum materials, and that she prefers using “actual literature” over “short pieces out of the anthologies.” As for myself, I find that my knowledge of ELA content grows as I examine the CCSS and those standards’ relationship to ELA content. I have had opportunities to “unpack” the standards as a participant in the Southern Nevada Writing Project and in my work settings. Discussion with my colleagues has primarily driven my knowledge of ELA content and the standards, which I viewed as reciprocal. I also drew on content from courses I took in my Masters and Doctoral studies as well as research in the field.

It is interesting to note that there was no discussion in the interviews about familiarity with standards or specific ELA content. This may be because the other teachers, like me, perceived a link between the standards and the disciplinary content. Data from the focus group show that this is not entirely the case: Judith, being new to the country and to its educational policies, made the assumption that the standards were a direct reflection of the content she was expected to teach. She says, “That’s how they gave it to me this year.” She had come to our school ten weeks after the beginning of the school year and was handed a flip-book of the CCSS for fifth grade. She was told that the content she would teach would come directly from the standards. Harriet had a different conception of the content. She believed, “You’re basing your

content off the standards, but the standard isn't the content." When asked to elaborate, she had thoughtful insight on school and district norms, in which teachers are provided with content materials (as we were for the literature standards) and told that those materials are the content that is aligned to the standards. When we created the materials ourselves, we used the standards as a guide to determine the content that we taught. Exploring our conceptions of what ELA content means turns out to be a major part of our process in creating curriculum, though we never explicitly discussed that topic until the focus group.

In our PLC sessions, we had several opportunities to discuss the standards before developing our own materials to align our instruction with them. It was found that in examining the standards, we had different conceptions, but were able to share one another's ideas to develop a coherent, unified concept of ELA content based on the standards. For example, when developing the menu project, we discussed the ELA standard R.I. 5.5 (Compare and contrast the overall structure of events, ideas, concepts, or information in two or more texts). At first, we perceived this standard to reflect the disciplinary skill of comparing and contrasting ideas. However, a closer examination reveals that the standard resides in the "text structures" domain, which led Anna to say, "I know it's in the text structures...the one that says structures." From this, we determined that we would require the students to not only compare and contrast the *ideas* in the texts, but the *structures* of the texts as well. Throughout the course of this study we followed a similar process of creating a project, aligning it to standards, then examining the ELA content; though we did not explicitly set that as an official curriculum creation method to be followed for each unit. The findings in the next section highlight specific instances in that process in which we examined our ELA content knowledge through creating projects and examining the ELA standards.

In the first PLC session, we began developing the brochure project by discussing how to scaffold the project, but immediately turned to a discussion of the standards. This happened because we implicitly agreed that the project lacked direction. This discussion was mentioned in the previous section on curriculum design: we were attempting to create a rubric before we had adequate understanding of our expectations relative to the standards. At first, Harriet expressed a desire to make the brochures a multimedia project (something we had done with the unit on explorers). I had mentioned that we had already “covered that standard.” Harriet continued that she thought a multimedia project would provide more choice for the students. As we continued to discuss the standards, we discovered that the standards in the category of “Integration of Knowledge and Ideas” (R.I. 5.7, 5.8, and 5.9) were best suited for this project. Following that decision, we began a discussion about what the writers of the standards intended. We decided that R.I. 5.8 did not actually belong with the project, with Harriet’s remarking, “That has nothing to do with it,” and my response, “That should be in craft and structure.” Towards the end of the PLC session, we turned our dialogue to assessment. We decided to grade using a rubric that reflected the criteria included in the standards we chose. This process of collaborating about the meaning of the standards and how to assess them helped us to deepen our understanding of ELA content.

This finding is supported by data from the other PLC sessions. As we continued to develop curriculum, we became more comfortable with tying the standards to the projects and to assessment, and with using the standards to expand our knowledge of ELA content. In creating the unit on the causes of the Revolution (menu unit), we were more systematic about developing the assessment pieces. We discovered that each of us had been delivering instruction differently in route to the same project (the brochures). For example, Anna relied heavily on the worksheets

that were provided with the social studies textbook and supplemental worksheets to help students understand the content. Harriet (whose class includes all the fifth grade students with Individual Education Plans) used scaffolding materials that she created or modified those from the texts and taught almost exclusively in small groups. Judith and I relied on whole group instruction followed by meeting with small groups to enrich or remediate the content. Despite differences in instructional styles, we created common assessments for the grade level. Developing common assessments helped us create a common grounding of knowledge of ELA content. We wanted to be sure that we expected all of our students to learn the same content no matter how it was taught to them.

In subsequent PLCs, we saw more occurrences of explanation of PCK than in our earlier sessions. The coded transcriptions of PLC sessions four through six show more instances of discussion of content pedagogy (n=166) and fewer instances of discussion of beliefs of students (n=27) and the PLC development (n=61). These data are supported by data from the member check interviews. Harriet's insight about her content knowledge is particularly telling: "I wouldn't say it [participating in the PLC] has changed it [content knowledge], rather, it has enhanced my knowledge. It is as if I am learning/teaching with four brains instead of one." Anna stated that she not only gained knowledge of the content from her colleagues, but she also expanded her knowledge of the content based on "what each class picked up on." Judith expressed that she gained a lot of knowledge about U.S. policy issues by examining the ELA standards.

Social studies content knowledge. Each teacher in the study approached developing the curriculum units with varied knowledge of social studies content. As for myself, I had been teaching American History for several years, and felt very comfortable with my knowledge of

the content. In the initial interviews, the only teacher who discussed her knowledge of social studies was Harriet. She expressed a desire to learn about the content from participating in the PLC: “So coming in teaching social studies for pretty much the first time, not very experienced with projects or teaching the curriculum or anything like that.” The data from the PLC sessions offer much more insight into this subtheme.

After the unit on the British colonies (brochures), we created a unit on the causes of the American Revolution (menus). At the beginning of the third PLC session, we began to plan this unit. Harriet opened the session by asking what the next unit would be. Judith began to say it was on the Civil War (which began in 1861), but I had to correct her that it was the American Revolution. Harriet, having never taught American history, and Judith, being from Australia, were understandably less knowledgeable about the chronology of American history. When the conversation continued the next day, Harriet said explicitly, “Now I don’t know anything about the Revolutionary War, so until I read the chapter, I can’t help you.” This gave Anna and me an opportunity to fill in some basic content knowledge through discussion, while Harriet could do further research on her own as well. As we discussed what kind of tasks to include on the menu, more clarification was needed about the content. During this PLC, we discussed cause and effect relative to the Intolerable Acts, the Sons of Liberty, the Boston Tea Party, Paul Revere’s ride (Anna interjected her familiarity with Longfellow’s poem, “Paul Revere’s Ride” by actually reciting the opening lines), King George III, and the vocabulary associated with the causes of the revolution (taxation, massacre, patriot, loyalist, boycott).

Growth in social studies content knowledge was self-reported by the teachers in the member check interviews. Anna remarked that she learned about both (ELA and social studies) content by what her classes “picked up” and that, “...that reminds me to review it [content].”

Judith stated directly that she learned American history content through her colleagues, and that she “would have just read the book and done the lessons, but learning from colleagues is better.” She went on to explain that she learned from our collective prior knowledge. Harriet, also never having taught social studies, echoed Judith’s sentiments. She also mentioned that she had had a good mentor in social studies, but she had never taught it, implying that she learned more from actively teaching the units than she did passively from her mentor. Those teachers who felt they had beginning content knowledge in social studies reported that their knowledge also grew from participating in the PLC, as Anna and Judith reported, and as is confirmed by the data from the PLC transcripts discussed above. Judith and Harriet also confirmed this finding in the focus group interview. Harriet repeated that she gained “...a whole content knowledge from scratch.” Judith reported that, though she was born in America, her time in Australia (she moved there as a young child) had made her forget what she may have learned about American history, especially about how America came to be an independent nation.

In summary, developing integrated units gave teachers an opportunity to examine their content knowledge in ELA and in social studies simultaneously. The teachers self-reported growth in their knowledge of each subject’s content. This growth was primarily driven by collaborative conversations in the PLC sessions and supported by work done independently by the teachers to prepare for the units. As their content knowledge grew, teachers were able to demonstrate the connections they made themselves between both content areas for their students.

Connection between subjects. The second subtheme for this research question is that by discovering connections between the content themselves, teachers were able to convey those connections to their students. It should be noted that this subtheme overlaps with the “Beliefs about Students” code significantly. Much of the data used to determine this subtheme comes

from the initial interviews and transcriptions of the PLC sessions in which teachers report about classroom activity and their perceptions of students. Data from the taped lessons confirm the teachers' self-reports that their classroom practices are influenced by how they connect the subjects for themselves. Finally, artifactual data from the students' finished projects demonstrate that the students had connected the ELA standards with the social studies content by producing projects that could be used to assess the acquisition of skills in both subject areas. Much of the findings for this session echo those for the subthemes of connection (subject areas and students-selves) from the first question. Unlike the reporting in that section, reporting of these findings will focus on the teachers' behavior (self-reported and videotaped) and how they taught these connections.

In the initial interview, teachers were asked about their interest in designing integrated curriculum. Judith's response included a desire to demonstrate connections between the content for her students: "...if we can have an integrated curriculum, then, you know, they're [students] seeing that one thing can be transposed into a number of different areas." From this it can be inferred that Judith had a conception of connecting the content areas from the beginning of implementing the integrated curriculum. Anna, in her initial interview, discussed how integration mimics real life. Her desire was for her students to be able to understand these connections as they operate in real life outside of school by learning about them in class. Harriet was silent about these kinds of connections in the initial interviews, but her input in the PLC sessions offers insight into how she created connections for her students between the content areas.

During the first PLC meeting to be transcribed (in which we created the colonies brochure unit), we were discussing student achievement in social studies, and Harriet immediately connected low student achievement in social studies content to their need to

understand ELA standard R.I. 5.7 (Draw on information from multiple print or digital sources demonstrating the ability to locate an answer to a question quickly or solve a problem). Her concern shows that she had had a conceptualization of how this standard connects to social studies content, but that her students did not yet. This conceptualization drove the remainder of our discussion as we created the brochures unit. Based on our understanding of how the standard connected to the social studies content, we created a unit in which we could scaffold the ELA content (research and problem solving) through a project that required students to learn and report on social studies content. The artifactual data from the final brochures show that students did, in fact, connect these subjects. The social studies content is accurately represented in their brochures, having been attained through a process of research that followed the ELA standard.

In the videotaped lessons, all teachers are seen facilitating either the research process or the process of transferring information learned from research into the final project of the brochures. At the opening of Judith's lesson, children are seen retrieving research materials and searching for information on the computers while Judith visits with groups to ensure on-task behavior and to help them locate information. As the lesson proceeds, she invites groups to her kidney-shaped table and discusses the research standard. She helps students who are not proficient readers to decode the text, facilitating their understanding of the social studies content. The students are seen using a research packet that Harriet contributed during the PLC to help scaffold the research process.

In the video data of my own lesson, I open the session with a whole group lesson on the research process. I activate the students' prior knowledge of the research process by having them discuss their process with others who are not in their group. Then the students take out the checklist that was provided at the beginning of the lesson (Appendix I). They use this checklist

to confirm that they have located all of the information required in the project (brochures on colonial regions). We review each point on the checklist, and discuss the research process. For example, I ask a student, “How will you know when you have found what you need?” The students discuss how to locate correct information and when they know they’ve collected enough to complete the project. My focus for this lesson was decision-making while researching, while the information being located by the students was social studies content. This lesson was planned as a reaction to the students’ research process from the previous day, when I had noticed that they were struggling in deciding whether they had enough information to begin working on their brochure. When the students broke into groups, they were able to research more comfortably using the checklist and the ELA content that was taught in the whole group lesson.

In the video recorded in Anna’s class, the students are farther along in the research process than my class was in the recording of my lesson. She had already delivered lessons on the ELA content (researching, collecting information from several sources, using information to solve a problem) and the students were working in their groups to collect more information. Anna is seen working with small groups to determine whether they had enough information to create their brochures. Students are seen traversing the room from their groups to the computers in the back in order to share information that they had collected with their groups. When students encounter a problem, they approach the teacher, who is posted at her kidney table for that purpose. Because the camera did not pick up the sound from her conversations with students, when we reviewed this videotape, I asked Anna about her conversations. She confirmed that most of her discussions with students revolved around how to connect the research they were doing in books and on computers (ELA content) with the social studies content they were required to include on the brochures. She helped students determine the relevance of the

information they collected and how to use it in creating their brochure. The students, in turn, connected the ELA content skills to the social studies content on the British colonies by helping each other decide which information to include in their brochures and how to organize the presentation of that information.

The artifactual data show several connections between the ELA and social studies content as well. In all of the units that were created, the students had to act as historians to gather data and report it. Several ELA content skills were required to create projects that would demonstrate their understanding of the social studies content. In creating the brochures, students used the research process, including gathering data from several sources, determining usefulness and adequacy of the data, and reporting the data they located. On the menu projects, students analyzed multiple reports of incidents that occurred that led to the American Revolution and critically determined which information was valuable in reporting the social studies content for the menu project.

Data from the focus group contradict these findings. When asked about how their students connected ELA and social studies, Judith and Harriet reported that they did not observe students connecting the content areas explicitly. I was initially surprised at their observations, but their explanations clarified and refined my thinking. They attributed students' perceptions of the separation of content areas to the schedule strictly followed at the school. They believe that because the school's policy of creating blocks of time in which each subject is taught is an impediment to children's perception of how the different subjects are connected. In her response, Anna noted that students, "had more difficulty being creative and doing the projects, even though they liked the projects more," but did not comment on her perceptions of how the students connected ELA to social studies, if they did.

Integrating social studies with ELA allowed teachers the opportunity to create conditions for their students to make connections between the two content areas that the students may not have realized in the past. As the teachers developed the units, they discovered for themselves that there were connections that could be easily demonstrated for the students. The process of research that drives historical knowledge and understanding is indeed an ELA content skill. The students, acting as historians, were able to discover those connections for themselves thanks to lessons developed by teachers that connected ELA content to social studies content, such as lessons in content vocabulary acquisition and in the research process. Contrasting the observational data of students implicitly connecting the two content areas, two teachers reported that they did not perceive their students explicitly connecting the content areas at all.

Complexity in PCK. The third subtheme that addresses this research question is that teachers relied on formal and informal discussions to drive growth in their PCK related to teaching integrated curriculum. Both types of discussions have been identified already in the findings section. Formal discussions of PCK occurred in PLC sessions and interviews, while informal discussions took place before and after school, during preparation periods, and at lunch. From these discussions, teachers examined the complexity of PCK in creating and teaching integrated units and refined their conceptions of their own PCK.

Data from the initial interviews show a desire on the part of all teachers to grow their PCK in ELA, social studies, and integrating the two. Judith discussed how she had taught ELA in Australia and indicated that, "...what I'm finding from here is that I'm getting some new ideas. Obviously, things everywhere around the world are different." She went on to explain that she expected to get new ideas from designing integrated curriculum in our PLC. Anna expressed a desire to become a better teacher: "To reflect on my own teaching and make sure I

am...implementing whatever changes [that we create in our PLC].” Harriet also emphasized that changes in her PCK would occur based on what we did in the PLC. “So it allows you to reflect on what you’ve been doing and how you can incorporate some of those things that are being suggested or that have worked in others’ classrooms and to incorporate those into your own classroom.” She also indicated a desire to improve and strengthen her practice, acknowledging that improvement comes from transferring what we do in the PLC to her classroom.

It appears from the PLC transcripts that discussions of PCK occurred more frequently in the later sessions. This may be attributed to growing comfort with the PLC development and the curriculum creation process, which we struggled with earlier in the semester. Instances of phrases that fit the “PCK” code occurred a cumulative 57 times in the first four PLCs, while those instances skyrocketed to 145 for the final two sessions recorded. In the early sessions, the PCK coded phrases focused on problem solving. For example, in our first session, we struggled with creating an assessment for the Speaking and Listening content/standards. We had a discussion on what assessment practices would be most effective for assessing students’ ability to learn from the presentations their classmates presented. Our concern was that we wanted to assess their assimilation of the social studies content, but if that content had been left out of a presentation, we could not downgrade a student for not hearing it. We decided the best practice to assess listening was to have a more open-ended written assessment of their listening skills. However, that discussion never led to the creation of an assessment, as the conversation turned back to a discussion of quality of student work.

To contrast the limited exploration of PCK in early PLC sessions, the last two PLC sessions are rich with phrases related to growth and change in PCK. For example, in the fifth PLC session, we worked to design a unit in which the students would create a play depicting an

event from the American Revolution. In the course of creating that unit, Harriet and Anna shared their experiences with learning history in their own lives to help us conceptualize how we would teach play writing that would integrate the ELA and social studies content into a coherent performance. Each shared how they had observed other plays being created in the past, allowing us to plan our pedagogical strategies for this unit. They also shared experiences from their childhoods when they learned about similar events (Anna shared her experience with Pickett's Charge at Gettysburg, but had to be reminded that was part of the Civil War, not the American Revolution). Harriet shared her excitement when she learned about the Boston Tea Party as a child and how her school had visited some important historical sites in Virginia.

After using these examples to help us create a pedagogical strategy to generate interest and enthusiasm on the part of our own students, we had to choose which events we would want to focus on for the social studies content. Harriet, indicating a deficit in her own content knowledge, leafed through the chapter in the social studies book, saying, "I'm just gonna throw some stuff out that's in here." This gave us an opportunity to explore our differences in knowledge of the social studies content. As Harriet "threw ideas out there," we worked together to determine which of those ideas would work well pedagogically. Judith contributed a wealth of pedagogical strategy by suggesting ideas for structuring the plays. For example, she shared an idea of how to structure a play on Bunker Hill: "You've got two different sides, and then you've got at least five to six people on each side. That, you know, I mean, to me would be exciting seeing that come to life." Her suggestion led us to decide how to help students cast the plays.

We also discussed a timetable for the project. Judith's contribution is a telling example of how, in these later sessions, we focused more heavily on PCK than on procedures and beliefs about students. She suggested that we take two weeks to complete the project, teaching the ELA

and social studies content the first week, then having the students write, rehearse, and perform the plays the second week. This pedagogical strategy would provide explicit instruction in the standards the first week of the unit, while freeing us to target specific needs of students during the second week. Judith also expressed a desire to read the social studies chapter with her students, rather than assigning it to be read independently: “Because they get more out of it when we read together and discuss it than if we let them go by themselves.” I agreed with this pedagogical strategy: “That was my assumption... They would probably need a lot more support from us.” Contrasting these discussions with those in the first few PLCs, there is much more talk about basic procedures in the PLC development, curriculum design process, and beliefs about student learning in the early sessions; while in the later PLCs our discussions revolved around pedagogical strategies for delivering ELA and social studies content.

Data from the member check interviews confirm this assertion. Harriet noted that she had struggled to incorporate ELA standards meaningfully into the integrated curriculum, but that she thinks the two subjects complement each other well. She explicitly said that participating in the PLC “...has enhanced my pedagogical knowledge.” Anna indicated that she learned about both ELA and social studies content, not only by participating in the PLC, but by observing what each class “picked up on.” She explains: “When I see different things being picked up on by different classes, it reminds me to review it.” The opportunity to see completed projects from other classes, watch performances by other classes, and hear her colleagues’ reporting of those results allowed Anna to add to her own PCK. Judith had an interesting conception of the word pedagogy. She discussed that, in Australia, that word was a buzz term that was overused by administrators and misunderstood by teachers. Having participated in our PLC, she now understood its meaning and indicated that her own pedagogical knowledge was “solidified.” She

also indicated a desire to continue to improve: “We’re doing better than other grades, but I don’t think we’re there yet. Next year could be amazing.” This remark is a telling observation of the nature of PCK. Judith believes that although our collective PCK has grown through collaborating on the integrated units, there is no such thing as finished. As the process continues, even into next year, we will have opportunities to continue to grow and improve.

In the focus group interviews, the teachers looked towards the future as well. Harriet said, “This was new for me and I learned a lot this year that I incorporated this year, and I learned a lot that I’ll incorporate next year: things that work and things that didn’t work.” I cited the fact that the unit in which students wrote and performed plays was my first time in teaching those skills, which allowed me to generate PCK in that area. Judith said, “I think coming to the PLCs, I listened to what everybody else was doing in their class, and then I adapted some of those things, you know, to make it run smoother in my class.” Growing PCK is naturally a continuous dynamic process. Teachers in this study used the PLC and the curriculum creation process to explore and grow their PCK.

Summary. The teachers in this study used their PLC to increase their content knowledge of both ELA and social studies. They explored the difference between standards, materials, and content and discovered that they had differing conceptions of how the three were related. Each teacher noted that they plan to build on this work in the future. Two of the teachers, Judith and Harriet, reported that their content knowledge in social studies grew from almost nil. Anna also reported growth in her social studies content knowledge as a result of participating in the PLC and creating authentic curriculum. Teachers also report that they drew connections for themselves between the content areas of ELA and social studies, but that they did not notice students drawing explicit connections. Observational and artifactual data demonstrate implicit

connections on the part of the students that may contradict the observations of their teachers. Finally, teachers reported growth in PCK as a result of creating integrated curriculum in the PLC. They used the support system provided by the PLC to increase their knowledge of practices in ELA, social studies, and integrated curriculum to improve the knowledge of those subjects and the strategies they used to teach those subjects together.

PLC Development

The findings for this section explore the idea that participating in a PLC 1) helps teachers learn about the practices of other teachers, 2) helps teachers comfortably change their practices and rely less on routines, and 3) helps teachers examine and develop their professional identities. The theme of changing teacher practice has already been discussed in the curriculum section, with a focus on how teachers changed based on the curriculum that was created. To avoid redundancy, this section will focus on that theme in light of teachers' participation in the PLC and how that participation contributed to teacher change. Because it was stated in previous findings that teachers changed their practices and examined their beliefs about students' connection to the curriculum, those findings are used to justify that participating in the PLC contributed to those themes. Data from interviews support this assertion.

Collaborative learning. The findings for this theme corroborate those of studies examined in the empirical framework (Chapter Two) in a new context. Data from the PLC sessions and interviews show that teachers used their time together in the PLC sessions to learn from one another. The personnel who participated in the PLC consisted of the four fifth grade teachers (Harriet, Anna, Judith, and me). We were occasionally visited by teachers from other grade levels, learning strategists and administrators, though their contributions to the PLCs were

usually observational and are not recorded and are not reflected in the transcripts. They were not consequential to the curriculum design process.

As a grade level team, we had no hierarchical personnel structure, despite my fear that my role as a researcher would influence the process. Similarly, we did not structure the PLC sessions with a strict agenda or protocol. Despite having no specified protocol, the transcripts show that we focused on the task of creating integrated curriculum with minimal deviation from the task at hand. That focus provided us an opportunity to learn from one another's practices through collaboration in the PLC.

In the initial interviews, each teacher was asked about their perception of how participating in a PLC will increase their knowledge. Judith, who had experience with PLCs and integrated curriculum in Australia, mentioned that she expected to, "...get new ideas." Anna's response was almost identical: "I think because of getting new ideas from the people [other teachers]." She elaborated much more than Judith. Continuing her response to the same question, Anna indicated that because this was her first year teaching fifth grade, she had expected to learn from me (I've taught fifth grade for eight years). She also expected to learn from Judith, who would bring ideas from her experiences in Australia, and from Harriet, who would bring ideas from her experiences in Chicago. Anna's summary of her response is particularly telling: "It's everyone's collection of ideas and we can bounce ideas off each other. And with that the ideas grow." Harriet was more succinct: "So, whatever my weaknesses are, I'm sure that there's someone in that PLC that that is a strength for them." She elaborates this idea in her response to the next question, about what she expected from the PLC: "I would say I would like to become a better teacher. To reflect on my own teaching and make sure I am, like, doing what we talk about in our PLC..."

The stated desire of the teachers to learn from one another is supported by their conversations in the PLC sessions. In the first session, I shared some examples of brochures that students of mine had completed in previous years. Those examples carried us from a loose discussion of our expectations for the social studies content to specifically designating a geographic region of the colonies to each group of students. Later in that session, Harriet expressed a desire to do, “more than a brochure.” Though we initially agreed that she could give other options, she had decided that she would require all students to do a brochure, but would allow some students to create one using Microsoft Publisher if they desired. This minor compromise early in the course of our curriculum design process gave us a scaffold for greater compromises in later units and gave us a chance to experience how we could learn from each other, a process which would continue to develop in later sessions.

At the beginning of the second session, we discussed how students’ work on the brochures was progressing. Judith immediately admitted to borrowing our ideas: “So I took a leaf out of everyone else’s books, and gave them leaders...” She refers here to assigning group leaders, which is something we discussed informally at lunch. Judith used ideas from Harriet and grouped her students by ability. Acknowledging her success, I offered an alternative that I had had success with in my classroom. This initial conversation initiated a strand of conversation based on the sharing of ideas. The next several pages of transcript are devoted to sharing strategies we used in each of our classrooms with one another, with a view of improving each other’s practices.

Further in the session, we had to agree on a listening assessment. Here we realized we needed a discussion of the assessment. After sharing several ideas, we discovered we were each doing completely different things in terms of scaffolding instruction (Harriet and Anna were

informally assessing each lesson using the quizzes from the textbook, while Judith and I were only requiring students to read the lesson that corresponded to their brochure projects). Things were complicated even more by Harriet's absence from this PLC.

Rather than causing strife, this setback allowed us to examine our practices. I interjected, "It's not a problem to change them [teaching materials], but to see how we change it. You know what I mean?" We discussed the way Harriet modified her classroom materials to align with the lesson tests and decided to create a new original assessment. I admittedly turned "researcher" at this juncture by making an observation on our process: "Yeah it's funny, I like seeing the variations...So it's a relief being able to read and write in the research about how we have an idea, but each one of us has our own." Judith recalled her experiences in Australia: "...my principal, when we started doing the PLCs years ago, she had a big huge umbrella there...Everything we hung up under the umbrella were all of our different ideas, how we teach, all the rest of it. But this umbrella was the big picture."

This discussion, though a temporary diversion from the work of creating curriculum, was an important one in helping us solidify our conception of our roles in the PLC. Indeed, as this session continued, we decided to share all of the materials that each of us was using so that we could each choose those which suited our particular pedagogical strategies. This strategy contributed to our collective sense of efficacy, both with our effectiveness in the PLC and with our comfort in teaching the integrated units. Furthermore, this session, having the most instances of PLC-coded phrases, likely contributed to enhancing our collegiality and allowed us to transition from focusing on PLC development issues to the more important work of creating curriculum.

In subsequent PLC sessions, our focus was less on each other and more on the curriculum and our students. This allowed us to use the PLC to learn even more from each other's practices. At the beginning of the third session, we were trying to decide on a project for the American Revolution. I launched right into what I had done in the past, probably a little too enthusiastically, causing Harriet to ask, "Are you always talkin' [about projects]?" After acknowledging that I supposed I am, we continued with our task of designing the project. We decided on doing the menu project (described above), which I had done with past classes. Choosing this project allowed me to share curriculum materials that I was already familiar with and it allowed me to learn how teachers who were not familiar with menus would approach the project for their first time.

Because of a fire alarm, we had to continue our session the next day during our prep period. In this session, we shared a plentitude of content knowledge with one another. In addition to sharing content knowledge, each teacher contributed ideas of how to create differentiated tasks for the menu. We each took a different approach to designing those tasks. Harriet opened the social studies textbook and searched for activities that existed therein. Judith scanned the text of the social studies textbook and suggested ideas that she had generated from her reading. Anna analyzed the ideas we presented and determined their alignment with the ELA standards. Interestingly, the roles we adopted were not predetermined. Each of us, internally reflecting on our strengths and weaknesses, chose to contribute within our zone of comfort: me with social studies content knowledge, Harriet with remediation, Judith with adaptation and originality, and Anna with expertise on the standards. Working within our areas of strength did not threaten the efficacy of any individual teacher and contributed to our collective efficacy when we had completed our task. Because we were confident that each of us had designed a portion of the

project based on what we knew best, we were able to approach instruction comfortably and enthusiastically.

We followed a similar course in the final two PLCs that were transcribed. Judith suggested that we create the project in which the students wrote and performed plays. By this time, our collective efficacy had enabled us to produce a project much more efficiently. Again, each of us contributed to the project via our strengths. This time, I was the one who had little experience with the ELA content. In eight years of teaching, my students had never composed and performed an original play (shame on me!). I had to rely on the expertise of my colleagues to help me conceptualize my approach to teaching this unit. In that session, my contribution was fairly limited to social studies content, while the other teachers took on the ELA content. Again we each used our individual strengths to grow our collective knowledge of teaching.

In the final PLC session, we began by discussing how we assessed the menus. Here I was able to share how to quantify what appeared to be a subjective process for the teachers. After explaining how I judged how students demonstrated mastery, I showed how I calculated their grade based on their completion of the menu's requirements. I shared examples of students' menus that were above, on, and below grade level and how I determined that qualification. It should be noted, however, that I did not dominate the conversation. Reviewing the transcript, it was clear that the other three teachers contributed to explaining the grading process by asking me questions about why I gave the grades I gave. Judith was particularly conversant. She vocalizes her interpretations of my thought process in grading with remarks like, "Right, she's missed out this time, and she doesn't have a start to finish [discussing a timeline]."

As we progressed through the year and grew more comfortable with our own and each other's strengths, weaknesses, and approaches to the PLC, we were able to focus on learning from one another rather than ensuring we were following a PLC protocol or "doing a PLC right." That progression increased our collective efficacy, as well as the efficacy of each of us as individuals. That is why we did not need to follow the protocol assigned on our school site's PLC form, and even completed the form after the PLC had ended in some instances. Collaborating allowed us to use each other's strengths to strengthen our own practices, because those practices were deprivatized.

Data from the member check interviews confirm this assertion. Judith credits the PLC for helping her learn U.S. policy and standards as well as history and ELA content. She explicitly said that she "...learned from the other teachers' prior knowledge." She also said that participating in the PLC had solidified her pedagogical knowledge (see above discussion about her concept of "pedagogy" as a buzz term). Most importantly for this subtheme, Judith was surprised that our grade level did not compartmentalize, and that she was able to learn about integration practices from the PLC. She expressed excitement that, though she expected to teach from a basal, "This is waaaaay better" [emphasis in the original]. In response to how the PLC changed her practices, Harriet said, "I have taken these practices and strategies and used them to improve my instruction." Here is direct evidence of increased individual efficacy in teaching. When asked to elaborate, she explained that she had always believed that collaboration improves practice and that she likes to listen to new ideas. She added that there was conflict between individual versus collective conceptions of teaching, but that there was not as much here as she had previously experienced. Anna confirmed, "I think I have become a better teacher by participating in our PLC because I am now constantly comparing and contrasting my teaching,

resources, etc. with my colleagues.” Again, we see increased individual efficacy. From my standpoint, collaboration with my colleagues helped me make up for my weaknesses (as in teaching playwriting). I was able to teach something completely new to me and to my students thanks to the ideas shared in our PLC. Furthermore, I was able to teach it confidently as my individual efficacy had increased.

Teachers expressed similar views in the focus group interview. Harriet and Judith both expressed that they gained content knowledge in both subjects (ELA and social studies) by participating in the PLC. Our discussion also showed, through their discussion of ELA content, that more work needs to be done in conceptualizing our collective understanding of content, materials, and standards. The acknowledgment that we need to learn more provides evidence for collective efficacy. Through that acknowledgement, we admit that our efficacy in collectively growing our knowledge of teaching in turn increases our individual abilities.

Participating in a PLC helped each teacher in this study examine and improve their practices and increase efficacy, as confirmed by each teacher in their interviews and in the final focus group interview. In the early PLCs, we had to work through minor process issues to become more comfortable in sharing ideas about our practices. The tension between individual versus group conceptions of teaching existed throughout the process. Despite that conflict, as we grew as a learning community, we were able to learn about each other’s practices and use that knowledge to reflect on and improve our own.

Routine vs. change. Participating in the PLC allowed the teachers in this study to rely more heavily on each other’s ideas and less heavily on their own established routines. This section demonstrates that one effect of developing the PLC is that teachers have a support

network in their colleagues that helps them feel more comfortable about changing routines that they may have relied on in the past.

Developing authentic curriculum demanded that we veer from routines that some of us had established and relied upon in prior teaching experiences. In my prior experience teaching American History, I relied heavily on my content knowledge of that subject and less heavily on the ELA standards that I had tied to the projects. I had also relied on projects that I developed over the course of several years, without altering them much. Working with this PLC forced me to abandon some of those routines. Judith had an entirely new experience in a new country, and relied heavily on the PLC to help her establish new routines for her American classroom. Anna used the PLC to help her achieve her goal of using materials outside of basal scripts and multiple choice tests. Harriet learned new teaching practices and strategies, in spite of the conflict between individual freedom and group dynamics.

The organization of this section differs from the organization of the other subthemes. In this section, data will be presented for each teacher and their relation to this subtheme. It will begin with an autobiographical account of my own conception of routine vs. change. Data for Judith will come next, followed by Anna, then Harriet. The final section will summarize the theme of routine vs. change as a synthesis of data from all four teachers. The findings are presented in this way in order to show how each teacher's identity was affected by their participation in the PLC. The data from this section comes primarily from the interviews and is confirmed by evidence from the PLC session transcripts.

Developing Identity. This section addresses the ways in which each teacher developed his or her professional identity through the PLC process.

Derek (the researcher). As I discussed in the introduction to this project, I have been interested in integration nearly my entire teaching career and have been integrating social studies with ELA for several years. I even created a dissertation project out of it. However, all of my creation was done in isolation. At my former school site, I had tried to share my ideas with colleagues, but teachers preferred their routines and I had established my own (not to mention common routines strictly mandated by administration). I brought those routines with me to my new site. I knew I would be asking my colleagues to examine and change practices that they may have been comfortable with; to change their own routines. Having read the literature on teacher change, I was naturally apprehensive.

What I didn't realize was how much of my own routines would change. I had grown accustomed to creating projects in which I mainly taught social studies content and loosely aligned projects to ELA standards that fit the grade book. I was also accustomed to relying on myself for ideas about teaching. The opportunity to join a PLC that included teachers of the caliber of Anna, Judith, and Harriet forced me to change those routines. These teachers each had plenty to offer and often what they offered helped me to overcome my own weaknesses. The playwriting project is a perfect example. The idea to have students create something they could perform had never occurred to me. I also had no idea how to teach it. With the help of my colleagues, I was able to help create a unit that, in my opinion, was the best one of the year. Then I got to watch all four classes perform it! Before this year, I had thought the projects I created generated student interest, but the plays showed me I was only scratching the surface.

I also could not rely on covertly assigning loosely fitting ELA standards to social studies projects as I had done at my previous school. Our discussions about ELA content and standards helped me contribute to creating a genuinely integrated curriculum with my colleagues. At the

end of the research process for this project, I was still discovering that each teacher in the PLC had a different conception of ELA content. I found in the focus group interview that Harriet's conception of ELA content as being independent of the standards differed from my own. I had perceived the content as being entirely driven by the standards. I used my colleagues' expertise to inform my conception of ELA content and standards. Because I was able to abandon comfortable routines, I was able to contribute to creating projects that would be more beneficial to student learning by truly integrating ELA with social studies.

For me, participating in our PLC helped me to examine routines I had established in my teaching practices and to abandon some of those routines in favor of changes that would increase student motivation and learning. Sacrificing routines that I had built into my practice as a teacher made me apprehensive about trying something new, but ultimately led to enhancing my knowledge of content, standards, and practices. Furthermore, abandoning routines felt safer when I knew I could rely on my colleagues for support when I encountered problems in the changes I made. The strengths of my colleagues could overcome my weaknesses because I relied on their expertise as much as my own.

Judith. In Australia, Judith had worked at a school that adopted the PLC model several years ago. She brought experience with PLC development and a wealth of ELA content knowledge and pedagogical knowledge to our community. In her initial interview, she had noted that she was already learning new ideas from us. She also mentioned in her initial interview that she wanted to explore learning centers. "It's one thing that was a huge part of the classrooms back home. So I'm hoping to be able to add to the ones that are possibly already in place or, you know, grow that." We did not create or implement a single learning center in the course of this research project. Judging from her early statements, Judith was forced to change a major part of

her teaching practices. It can only be inferred that she had established routines with centers back in Australia and that she changed upon joining our team, as she does not mention centers either in the PLC transcripts or in her member check interviews.

She did note significant changes in her practices in her initial member check. One was that our integration was, in her conception, incomplete. She explains: “In the states, curriculum is compartmentalized so it’s like it’s brand new again, like starting over, like I’m learning to tie my shoes again.” She reported that in Australia, the curriculum was “truly integrated,” with the standards being “embedded in all subjects.” To her, it seemed that we were only taking the first steps toward integration. She even expressed a desire to continue the process next year by concentrating on how to integrate all subjects. Though she did not discuss her practices in Australia, it is apparent that she had to abandon routines related to integration and centers that she was been comfortable with. In the focus group interview, Judith confirms this assertion: “You can’t do anything in yellow block except for this [teaching reading]...I’m not used to that at all.” Judith had to adjust her practices, which caused a conflict with her conception of integration.

In the second PLC session, Judith borrowed the idea of ability grouping from Harriet. When we discussed group work in informal conversations at lunch or after school, Judith always mentioned vast difference between group dynamics here and in Australia. She was surprised at our students’ inability to work without oversight and consistent input from the teacher. When she had first tried grouping students, she had expected them to know what to do without oversight and consistent input, so she relied on the routines for group work that she had been familiar with. When her familiar routines did not work, she found support from her PLC, and was able to change her practices when she wanted students to work in groups. She structured group work

much more heavily and grouped students by ability so that the more proficient students could help the less proficient ones. Responding to our inquiry about how that change worked for her, she replied, “So finally, the kids are almost working as a team instead of individual...” She noticed that it also motivated the students who performed better in that setting.

Another major change for Judith was for her to gain familiarity with policies and processes unique to America, our district, and our school site. When Harriet suggested that we allow the students to take the menu projects home over spring break, Judith expressed surprise that they were allowed to take the textbooks home with them. She also expressed surprise that we would use the menu as the assessment for the unit instead of a written test (this was before we had created it and aligned it with the standards). She remarked, “I like that. So we’re gonna have an assessment. Wow.” In the fifth PLC session, we were checking the school calendar to determine how many more units we could create before the end of the year. In addition to the integrated curriculum we created for the informational text standards, our district provided us with scripted novel studies that “covered” the literature standards. Judith was exasperated at the quantity of content left to teach and the dearth of time in which to do so. When we decided, based on student achievement data, not to teach the final novel unit and to focus on social studies, it eased Judith’s concern: “Ok. I’m happy to do that. I’m happy. I don’t even know what that book was about. I haven’t read it.” Though the rest of us were accustomed to trying to rectify the demands of district initiatives with the learning demands of our students, Judith needed us to justify eliminating the novel study as a group. The routines Judith had relied on in Australia (minimal district/political oversight) had changed when she got to America.

Anna. This was Anna’s first year teaching fifth grade. In her 22 years of prior teaching experience, she had established comfortable routines that would be changed via her participation

in our PLC. In her initial interview, she expressed a desire to change. She mentioned each of her colleagues explicitly and delineated strengths we could offer to help her improve. For example, “Judith is from Australia so she brings the things that she does...And Harriet is from Chicago, so again, that’s, you know ideas from all over, it’s just wonderful...” She viewed our PLC as “...everyone’s collection of ideas and we can bounce ideas off each other. And with that the ideas grow.” She elaborated in the next question about how she expected her classroom practices to change: “...if we’re trying something new, it’s like, ‘I would like to do that.’”

Anna’s desire to change is represented in her portion of conversations in the PLC sessions. In our second PLC session, there was a collective misunderstanding about how the brochure project was structured. Anna and Harriet were studying all of the colonial regions with their entire classes and quizzing them on the content, while Judith and I had assigned geographical regions to each group and only required those groups to read the section about their region. When we discovered this at the PLC, Anna remarked, “It must have been my fault then, because the rest of you got it, so...” She had been relying on a routine that she had established: read the lesson, assess the content. Although her routine was not detrimental to student learning, Anna decided she would change her practice to align her instruction with what we decided on in the PLC. “OK I’ll hold off on those tests...” The video data from her classroom confirm her decision to change. In the video, rather than teaching a whole group lesson using only the social studies textbook and quiz materials, Anna is seen facilitating small groups. Each group was working to learn about their geographical region and to create their brochures. The brochures, rather than the quizzes, were used to assess the content.

In the fifth PLC, Anna seems to still rely on tests, but not entirely. She mentions that she was going to give her students the chapter test on causes of the American Revolution (while we

planned to assess using the menu), but she decided to do so because she would be out of school and the students would have a substitute teacher. She elaborates, “I figured they could do the test itself and they could start on the menus and I could go between those two.” Even though she’s still relying on testing routines, it appears that Anna had embraced learning how to use alternative assessment measures. This assertion rings true when Judith suggests playwriting for the next unit. Anna interjects several sentences that connote her enthusiasm for this project/assessment. She is also more active vocally in this PLC session than she had been in all previous ones, contributing several ideas beyond her usual helpful knowledge of the standards, such as sharing her experiences with the social studies content and suggestions of how to create the costumes and sets for the plays.

Anna self-reported these changes in her member check interview. She said, “I think I have become a better teacher by participating in our PLC because I am now constantly comparing and contrasting my teaching, resources, etc. with my colleagues.” It is evident from this statement that the opportunity to work collaboratively in developing projects and assessments allowed Anna to reflect on her teaching, changing routines that she had previously relied on when she did not have a team that collaborated in the ways that we did.

Harriet. Having taught middle school mathematics prior to joining our PLC, Harriet did not have many established routines in elementary teaching practices. In her response to the initial interview question about how the PLC would change her practices, she did express an expectation that she would reflect on her practice: “Um, a lot of reflection will happen. So we’ll sit in a PLC and we’ll have discussions about what we’re doing in our classrooms, what’s working and what’s not working.” Her desire to learn from others’ practices is analogous to the

ways in with the three other teachers changed their practices from routines that we had established.

Data from the PLC sessions demonstrate that Harriet had, in fact, relied on some routines. Harriet was unable to attend our second PLC session, and we had discovered in her absence that she had, like Anna, been teaching the entire social studies chapter on the colonies to her whole class, rather than assigning portions to each group. When we were discussing the changes that she made, I remarked that I wished she was present so she could share those changes. “It’s not a problem at all to change them, but to see how we change it. You know what I mean?” In making the changes she made to the unit, Harriet had relied on her own strategies that she deemed best for her students. Keeping those strategies within her own classroom instead of sharing them with the PLC is illustrative of how Harriet had relied on routines. In fact, later in that PLC session, we were able to find the materials she used with her class, examine them, and change them to suit the needs of each of our classes, allowing her to contribute her knowledge in absentia.

In the focus group, Harriet drove our discussion of ELA content vs. ELA standards. She demonstrated a deep understanding of the difference between the two: “I didn’t do very well at that this year, I think that’s because we were focused on this [the standards instead of the content].” Through this statement, she expressed a desire to improve on what we did this year by changing some routines next year. She also recognized that she did not need to rely on routines to be effective: “You can’t force your routine where it doesn’t fit. And I just think we didn’t.” That she used the pronoun “we” instead of “I” shows Harriet’s immersion in the PLC and our collective willingness to abandon routines that were less effective than changes we made throughout the semester.

Chapter Summary

The findings presented in this chapter make a case for studying the phenomenon of creating integrated curriculum (ELA/social studies) within the framework of the PLC process. The data contribute to understanding the curriculum creation process, connections between the subject areas, and PLC development. Data from interviews, transcribed PLC sessions, videotaped lessons, and artifacts of student work contributed to the findings presented in this chapter.

It was found that the process of creating integrated curriculum allows teachers to examine their content knowledge in two subjects simultaneously and to draw connections between the two. In the PLC sessions, teachers had to contribute their respective knowledge of ELA and social studies content to the creation of each unit. The teachers were then observed delivering lessons on ELA and social studies content in tandem, in such activities as whole group lessons on vocabulary and research skills, small group lessons on selecting information for inclusion in final projects, and creating coherent brochures for presentation. These data offer evidence that students connected the subject areas as well, though this finding is contradicted by teachers' perceptions in the focus group interview.

It was also found that teachers and students connect the curriculum to themselves by personalizing the content. The teachers had to realize connections between the curriculum areas for themselves before teaching those connections to the students. They did this through discussion in the PLC sessions, as demonstrated in the transcripts, and through self-analysis and reflection, as demonstrated by their comments in the interviews.

The process of creating authentic integrated curriculum is difficult and time consuming. Teachers often continued the creation process outside of the PLC sessions with informal discussions. The PLC sessions themselves, though efficient, did not provide the teachers with sufficient time to create units to their satisfaction. The curriculum was constantly being modified in the classroom before and during instruction and through the conversations teachers had outside of the PLC sessions. Teachers expressed a desire to connect the curriculum areas more deeply in the future, based on the work they began during the period of this study.

Creating authentic curriculum also allowed teachers to examine their PCK in the two content areas simultaneously. In PLC sessions, the standards drove conversations of ELA content. However, in the focus group interview, teachers differed on their understanding of ELA content. As an example, the discussions that occurred late in this study allowed me to examine my conception of ELA content. I had previously connected the standards and materials used for instruction directly to the content, which may have driven our process of creating curriculum. When Harriet discussed her conception of ELA content as being separate from the standards (but still driven by them), it caused me to examine my own conceptions. Teachers also increased their content knowledge in social studies (primarily in American History), especially those teachers who had never taught it before. PLC transcripts show, and interview transcripts confirm, that teachers learned the social studies content from the process of creating the integrated curriculum.

Teachers also discovered innate connections between the two subject areas by creating curriculum that integrated them. The teachers readily recognized connections between the informational text standards of researching and problem solving and how historians create written histories. They used the knowledge of this connection to facilitate students' reporting of historical events and concepts in American history. The teachers were skeptical of how deeply

students drew the same connections, in spite of the integrated lessons. They cited the school's policy of isolating the subjects into blocks of time, creating a perception in the students' minds that the subjects themselves were similarly isolated. Student work demonstrated implicit connections between research, vocabulary, and social studies content. The students used ELA content skills (research, vocabulary acquisition, problem solving) to create their finished projects (brochures, menus, plays).

Data from the interviews and PLC sessions show that teachers relied on discussions to drive growth in their PCK. In addition to examining their content knowledge in each subject, teachers also had to examine the most efficient and effective ways to teach the content. The teachers reported that the PLC process and the curriculum design process contributed to growth in their PCK. The PLC allowed teachers to identify their weaknesses and build on the strengths of others. In the final focus group, the teachers indicated a desire to continue growing their PCK as they progress in their careers.

The teachers in this study also worked collaboratively to develop their PLC. Early in the semester, transcripts of PLC sessions showed more instances of discussion of the PLC process and of beliefs about students. In later sessions, the transcripts show more discussion of the curriculum and of professional growth. The evolution of this PLC shows that teachers used it to increase their knowledge by relying on collaboration and collegiality. No hierarchy was established and no specific protocol was followed. They were not necessary to accommodate the work done by the teachers in collaboratively creating curriculum and, in turn, learning about teaching from each other. Though there were occasional disagreements among PLC members, those disagreements were used to challenge each other's thinking and to improve the practices of

the teachers involved. In this way, conflict was an advantage to the PLC rather than an inhibitor to the process.

Finally, developing the PLC challenged teachers to change or abandon routines that they had established prior to this study. In relying on the ideas of other teachers presented in the PLC sessions, teachers did not do their work in isolation. Each teacher showed a different approach to this theme, as some teachers had not established routines specific to social studies or ELA. However in interviews and in the focus group, each teacher did express that they felt safe abandoning routines if something better was suggested by a colleague. They relied more heavily on the ideas of their colleagues and they trusted their own ideas more when they were developed collectively through the PLC.

The findings presented in this chapter contribute to knowledge of integrated curriculum, teacher learning, and PLC development. The findings on integration show how teachers conceptualize and create units of study that integrate ELA with social studies. They also show how a group of teachers developed a constructivist process of creating integrated curriculum that allowed the teachers to examine their own knowledge of teaching in order to help facilitate student understanding of the connection between the two subjects. This process was difficult and time consuming, causing the teachers to express a desire to continue to build on the work they began during this study. The teachers plan to build on their work by continuing PLC development in the next school year. The PLC studied here did not rely on hierarchical structure or strict meeting protocols to successfully create curriculum and grow teacher knowledge. The teachers learned from each other's practices and comfortably changed their own practices based on what they learned from each other.

Chapter Five: Discussion

This case study was designed to examine teacher learning and PLC development among a team of fifth grade teachers who worked in a PLC to create authentic curriculum that integrates ELA and social studies. The goal of the study was to answer the questions about the process of creating and implementing integrated curriculum, how that process contributes to change in teacher knowledge, and about PLC development. The analysis of the data offers insight into several areas of teaching: creating curriculum, teacher learning, and PLC development. This chapter will provide a discussion of how the findings in those subthemes contributes to existing knowledge in the fields of curriculum, teacher learning, and PLC development.

Creating Curriculum

This section presents a discussion of the implications of the findings in the area of curriculum creation related to the first research question. The contribution of this study to existing knowledge in the field of curriculum will be shown by situating the findings in the context of relevant literature that was presented in chapter two. This section addresses the finding that in creating curriculum, teachers had different conceptions of how ELA content related to ELA standards and curriculum materials. The discussion proceeds by showing how the process of creating integrated curriculum aligns with the theories of constructivism and transdisciplinarity, deepening understanding of those theories. As in other studies of integrated curriculum (Curwen, Miller, White-Smith & Calfee, 2010; Richards & Bennett, 2011), this study's findings show that the creation and implementation process is difficult and time consuming.

Integrated content, standards, and curriculum. This section is a discussion of the implications of the findings related to creating integrated curriculum.

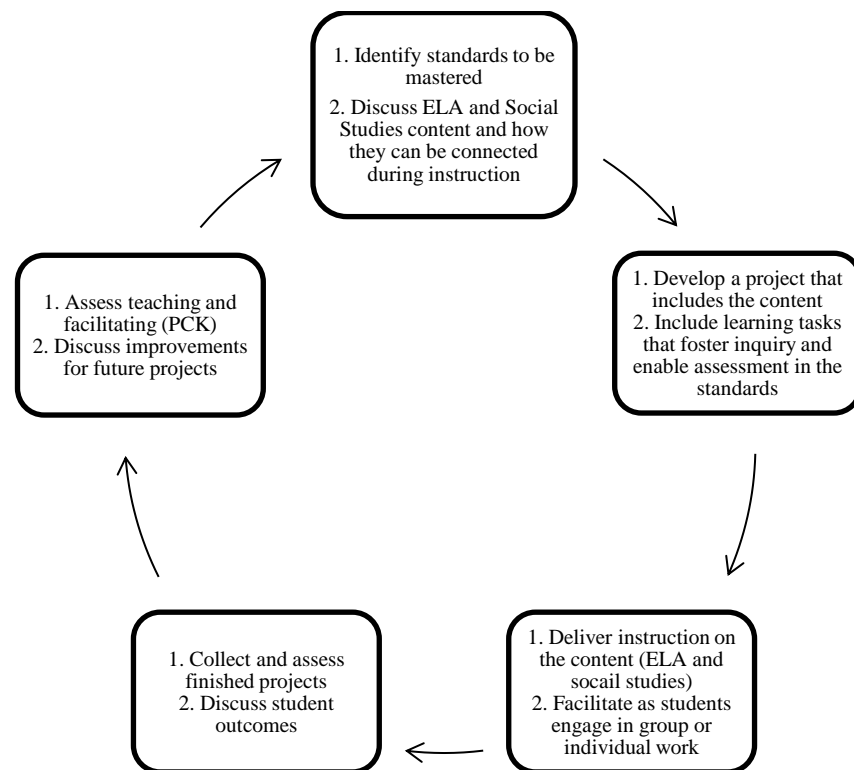
Teacher experiences. The findings from this study indicate that teachers experienced conflict in being driven by the ELA standards rather than the content to create integrated curriculum. Late in the study, a conflict was observed among teachers' understanding of ELA content. It appears that the teachers were primarily driven by district policy in strictly aligning curriculum to the CCSS. However, when asked about the process, the teachers expressed a desire to focus on ELA content instead of ELA standards in the future. Despite their conflicting conceptions of ELA content, teachers developed an integrated curriculum that did not eliminate content from ELA or social studies, but included both content areas in each unit (Parker, 2005). Furthermore, the units of instruction were created authentically by the teachers (Hinde, 2005), with ideas generated collaboratively in the PLC (DuFour & Eaker, 1998; Griffiths, 2014). This finding illustrates the need for professional development in aligning teachers' understanding of how content, standards, and curriculum materials are related. Developing pre-service and in-service teachers' conceptions of how standards, content, and instructional materials are related will ease the process of creating integrated curriculum as well as deepen teachers' understanding of how the content is related to the standards.

The theories of constructivism were evident in the curriculum creation process studied. The teachers reported in their initial interviews that their primary desire in creating integrated curriculum was to demonstrate connections for the students. They aimed to provide students with opportunities to dwell in the curriculum (Ross & Mannion, 2012) by creating projects that were facilitated by instruction in ELA and social studies content, rather than read from a basal or script. Data from the videotaped lessons confirm that teachers tailored their instruction to the specific needs of the students based on their progress in the projects (Lewis, 2004). Integrating two subject areas was a way for teachers to enact their desire to demonstrate the connectedness

of those subjects for their students and to increase student knowledge in two subjects simultaneously (Moss, 2005). Exploring and creating integrated curriculum is one way teachers can change their practices and explore their theoretical stances in a time when core subjects are being eliminated from the elementary curriculum (Milosovic, 2007). The way teachers in this study created integrated curriculum is a model for teachers who desire to incorporate lost subjects in their curriculum or depart from using scripted or basal ELA curriculum.

The following graphic operates as an adaptation of the graphic in chapter two that displays the PLC process. This graphic was designed to show how the teachers in this study created projects that integrated ELA and social studies, delivered instruction, assessed student learning, and analyzed student learning to improve subsequent projects.

Figure 3. PLC process at school site.



The box on the top of the graphic represents the initial PLC session in which teachers worked to create a unit that integrates ELA and social studies. During that session, the major goals were to identify the standards to be mastered by the students and to plan how the instruction could be structured to connect the two content areas. After identifying standards and discussing pedagogical strategies, the teachers worked to develop a project that would include the integrated content and could be used to assess student learning in the identified standards. Next, the teachers deliver instruction on the content. Instruction early in the unit consisted of familiarizing the students with the ELA content (such as using multiple texts to research) and the social studies content (such as the geographic location and historical importance of the thirteen colonies). After direct instruction, the students worked in groups or individually to complete the project, while the teachers facilitated by fostering inquiry, responding to student needs, and remediating instruction in the content areas as needed. The next step for the teachers was to collect and assess the projects and reflect on them in their PLC. It must be noted that these two steps are reciprocal: as teachers informally assessed student progress throughout each unit, they changed instruction and discussed those changes in informal discussions. Finally, the teachers formally assessed their own teaching in the next PLC session and planned the next unit. These discussions contributed much to the development of the teachers' PCK.

Student experiences. The style of the projects created by the teachers fostered inquiry among their students (Curwen, Miller, White-Smith, & Calfee, 2010). This is shown in the video data, as students are seen independently conducting research and using the teachers as a resource to aid their process, rather than relying on teachers to provide them with information through lectures or scripted lessons. It is also reported by the teachers in their discussions of students in the PLC transcripts. In this way, teachers and students worked together to solve problems, a

primary aspect of the theory of transdisciplinarity (Richards & Bennett, 2011). The students did not, however, raise their own questions that drove their research or speculate on historical situations to create their own modes of inquiry. Instead, questions were posed by the projects created by the teachers. This contrasts with other research on problem-posing in integrated curriculum (Richards & Bennett, 2011; Rosler, 2008). The findings of this study offer an alternative to the theory of transdisciplinarity as explained in chapter two. The theory as discussed earlier focuses on curriculum that invites students first to speculate on an issue, then to raise their own questions to explore. In the case of this study, student choice and inquiry increased participation of the students, but they were driven by teacher-created projects instead of student-generated inquiry. Providing students with teacher-generated inquiry projects delayed student inquiry until after instruction in the content.

Given the reports of the teachers that their students were wanting in areas of creativity and efficiency, creating projects is a way to introduce transdisciplinarity to students who are not prepared to generate thoughtful lines of inquiry into a subject due to past educational experiences that may not have encouraged creativity or critical thinking. This finding suggests that the teachers in this study used the PLC not simply to analyze student performance data and change practices accordingly, but that there was an underlying moral deliberation (Servage, 2009). A question of social justice is raised here: are children in Title-1 schools well prepared to think creatively or are they shackled by uninspiring curricula that is often scripted or over-remediated? There is a need for more research into the nature and structure of curriculum in Title-1 schools and whether the curriculum restricts critical thinking and creativity. There is also a need to examine how teachers respond when they perceive deficits in student creativity and critical thinking.

It was found that students drew connections between the content areas of ELA and social studies, despite Judith's and Harriet's perceptions that their students did not. Although Judith and Harriet reported that they did not perceive students explicitly connecting the content areas, evidence from videotapes and from the students' finished projects demonstrates implicit connections. Students were observed in the videotapes dwelling in the curriculum by posing questions to the teachers and demonstrating proficiency in research skills that integrated ELA and social studies, such as the dialogue between Judith and her students when they were selecting information to include on their brochures. This observation contributes to the research on constructivism (Ross & Mannion, 2012). It also confirms previous findings on engagement and motivation through embodying curriculum in students' experiences (Curwen, Miller, White-Smith & Calfee, 2010; Moley, Bandr, & George, 2011; Richards & Bennett, 2011). A student learning goal was met by creating an authentic integrated curriculum that allowed students to complete projects independently and in groups using their teacher as a guide and mentor. The students' roles as dwellers in the curriculum and problem solvers allowed the teachers to act as knowledgeable experts, transmitting knowledge in response to student needs rather than targeting student needs based on *a priori* assumptions (Ross & Mannion, 2012).

Difficulty and complexity. There were difficulties in creating authentic integrated curriculum. One difficulty resulted from scheduling policy at the school site. Teachers reported that because the school's master schedule was created to allow for specific blocks of time for each subject, the students had difficulty recognizing connections between the subjects. School policy inhibits the deeper study of ideas by creating the perception among the students that each subject exists in isolation. This finding indicates that teachers who desire to create integrated

curriculum should work together with their administrators to examine how school policy influences the curriculum.

Another difficulty teachers experienced in creating authentic curriculum was with time management. This finding corroborates findings in other studies of authentic curriculum design (Richards & Bennett, 2011), in which teachers reported time constraints as being a major factor in inhibiting their ability to create inquiry-based curriculum. The teachers in this study used conversation during lunches and after school outside of the official PLC meetings to examine and enhance the strategies they developed in the PLC (an example of teachers dwelling in the curriculum). There was simply not enough time in the PLC session to completely accomplish the goal of creating fully integrated, project-based units.

This finding contributes to literature on PLC development. Early PLC research simply defined PLCs as common planning time (Hopkins & Spillane, 2014), or a group of professionals (Harris & Jones, 2010). The finding that teachers spent extra time outside of their allotted PLC sessions demonstrates that a PLC, when viewed as a community of teachers who are actively involved, means much more than what teachers do when they meet for an hour each week. Active involvement in the PLC requires that teachers continue to assess their practices, discuss those practices with colleagues, and learn from each other, even outside of scheduled meetings of the PLC. This finding offers evidence that building a PLC or designing community-based professional development contributes to student and teacher learning outcomes because of how the community continued to develop outside of formal PLC sessions.

Furthermore, findings from this study illuminate connections between research on PLC development and on curriculum creation. Because the teachers in this study used their PLC to

create curriculum, the findings presented here contribute new understandings to both processes. The next section will address discussions based on the findings in the theme of teacher learning in the context of creating integrated curriculum in the PLC.

Teacher learning and PCK. The activity of creating authentic curriculum in the setting of the PLC presented a unique opportunity to draw important connections between creating curriculum and PLC development. Studies in PLC research have shown that teachers feel empowered by the collaborative nature of the PLC (Song, 2012; Webb, Vulliamy, Sarja, Hamalainen, & Poikonen, 2009) and that teachers are comfortable exploring new theories (Brodie, 2014; Pella, 2010) and pedagogical beliefs (Brodie, 2014; Graham, 2007). It is more difficult to locate empirical evidence on the ways teachers change actual classroom practices as a result of the PLC. The data collected for this study showed that teachers self-reported change, but also confirmed that change with data from videotaped lessons.

To begin, teachers reported that the PLC offered them an opportunity to examine their content knowledge in both ELA and in social studies. As was already discussed, teachers discovered a discrepancy in their understanding of ELA content that they intend to explore in the future. Indicating their desire to explore that discrepancy through inquiry as a team is evidence of how the PLC operates as a site for examination of content knowledge. The teachers also reported varying levels of gains in social studies content knowledge. Whether they would have made the same discoveries for themselves outside of their work in the PLC is doubtful, as the PLC provided them with the opportunity to examine their content knowledge in those subjects together. Findings from other studies of PLCs (Poekert, 2012) where participants in PLCs changed their practices while teachers in the control group did not; and of teachers learning in non-collaborative settings (Theriot & Tice, 2009; Valencia, Place, Martin, & Grossman, 2006)

where they resisted change after passive professional development settings, lend credence to this assertion.

The act of creating curriculum also contributed to teachers' examination of their content knowledge, as they had to be sure they had sufficient knowledge of both content areas in order to respond to the needs of their students. This assertion is supported by research on curriculum creation (Gwekwerere & Buley, 2011) that showed pre-service teachers adjusting practices after responding to student needs in science content. This finding contributes similar knowledge about in-service teachers creating curriculum in ELA and social studies. Creating curriculum in a PLC setting gives teachers ongoing opportunities to examine their knowledge, an implication for practices in teacher development and possibly in pre-service teacher education.

As teachers examined and expanded their content knowledge, they were preparing themselves to convey that knowledge to their students. Each teacher contributed his or her experience to the process (Griffiths, 2014). The process of teacher learning leading to student learning described in the findings echoes the suggestion by DuFour and Eaker (1998) that the PLC provides, "...its students with a curriculum that has been developed by the faculty through a collaborative process..." (p. 152). Because the aim of the PLC is to increase student learning, the participants in this study were focused on that goal by using collaboration to increase their content knowledge. This finding supports those by Saunders and Gallimore (2009) that the inquiry done in a PLC should be consistent and coherent and that its primary focus should be meeting students' academic needs. Although there is no data on the performance of the students of the teachers in this study, the teachers remained true to their goal of increasing student learning by increasing their own content knowledge.

In addition to increasing their content knowledge, the participants thoroughly examined their PCK. It should be restated that discussions about PCK became more frequent as time elapsed, as teachers became more familiar with the PLC process, the curriculum creation process, and with each other's strengths and weaknesses. The act of creating curriculum facilitated discussions in the PLC about PCK that ranged from incorporating standards in the curriculum to providing students with differentiated levels of support to assessing final projects. Additionally, informal discussions of PCK were held at lunch and after school. Teachers were consistently engaged with examining their abilities to dynamically combine their knowledge of content and pedagogy (Shulman, 1987).

The four principles of activity or agency, reflection, collaboration, and community identified by Shulman (2004) are present in the findings of this study. In addressing the principal of activity and agency, the teachers were clearly not passive learners. They used a system of inquiry to examine their practices throughout their creation and implementation of the curriculum. This was shown by their engagement with the curriculum on a daily basis in informal conversations, in their discussions about their own learning in the PLC sessions, and in how they reported growth in their PCK in the interviews. Their interactions also demonstrate the principle of reflection. The responses in the member check and focus group interviews demonstrated consistent reflection, even as the school year came to an end. The principles of collaboration and community are present as the participants supported each other's learning and worked collaboratively to use each other's strengths to make the whole of their work (the curriculum and student learning) greater than the sum of their respective parts. The teachers learned directly from their practices, combining knowledge of subject, teaching, and groups of

students (Little, 2001). This evidence supports the suggestion that an effective PLC is a site where teachers can work to grow their individual and collective PCK.

PLC Development and Identity Development

The PLC in this study was not conducted using a hierarchical personnel structure or a strict protocol. Instead, teachers relied on their professionalism and remained true to their primary aim of student learning in ELA and social studies through creating effective integrated curriculum and increasing their content knowledge and PCK. The democratic nature of the PLC in this study echoes the structure of those studied in other countries (Song, 2012; Webb, Vulliamy, Sarja, Hamalainen, & Poikonen, 2009). In previous studies, as in this one, teachers reported increased efficacy and empowerment because of the collaborative nature of their PLCs. In interviews, the teachers in this study reported increased efficacy, which corroborates quantitative findings made by Mintzes, Marcum, Messerschmidt-Yates, & Mark (2013) in which PLC teachers' self-efficacy increased compared to a control group.

The participants in this study also reported shifts in theory and pedagogy. Negotiating conflicts about understanding ELA content and standards was similar to the way participants in Pella (2010) reported transformation in perceptions and pedagogy. In that study, teachers reflected on their theoretical frameworks through lesson studies in a National Writing Project setting. In this study, teachers worked through conflicts in content knowledge in discussions about ELA standards vs. content and in sharing strengths and weaknesses in social studies content. The teachers also experienced conflict over their perceptions of student choice and ability, such as Harriet's desire to include multimedia aspects in the menu project and Judith's expectations for student creativity. These conflicts allowed the teachers to examine their own theoretical perspectives about content, curriculum, and student abilities. The ways teachers

explored theoretical and pedagogical approaches to ELA and social studies in this study are similar to the ways mathematics teachers examined their beliefs in Brodie's (2014) study about teachers' perceptions of student errors in math. This study contributes an ELA/social studies perspective to the findings existing about mathematics teachers. In addition to theoretical and pedagogical shifts, data from this study show teachers made shifts in their classroom practices.

Analyzing their performance in relation to their colleagues led the teachers in this study to change practices in their classrooms. This finding corroborates findings from studies of pre-service teachers (Barnhart & van Es, 2015; Gwekwerere & Buley, 2011), and adds that, through a culture of comfortable collaboration, experienced teachers can change their practices in ways similar to novices. Discussing and examining the practices of teachers who are trusted and professional members of a PLC allows all participants in that PLC to analyze and adjust their performance in the classroom. The culture of the PLC in this study was a comfortable setting for teachers to examine their own practices in light of the practices of their colleagues. That culture was extended beyond the scheduled PLC sessions as teachers used informal conversations to analyze and adjust their performance based on their colleagues' reports of successes and challenges in their classrooms.

Relying on collaboration made teachers more comfortable with change and less reliant on routines. This finding supports the assertion by Hammerness, Darling-Hammond, and Bransford (2005) that teachers do not change their routines based on passive teacher learning (e.g. facilitator teaching and teachers receiving information), and suggests a way to increase comfort with changing practices. The active involvement of teachers in creating and implementing curriculum and in collaborating to improve practices facilitated teacher change (Theriot & Tice, 2009). Deprivatizing practice (Vescio, Ross, & Adams, 2008) increased teachers' comfort with

change and reduced their reliance on routines. Teachers' comfort with sharing their pedagogical strategies, content knowledge, and PCK created a kind of social store-house of teaching information that could be accessed through collaboration. The collective knowledge of the four participants, stored in the "cloud" of their PLC, became a greater source of information about teaching than any individual participant could have achieved in isolation.

The community of practice created by the establishment of the PLC was a setting that allowed teachers to reflect on and develop their professional identities. Working wholly in isolation was not an option for the teachers in this study, though all four teachers modified curriculum materials and pedagogical practices to suit their professional identities. By creating their own research packets to scaffold the ELA content for her students, Harriet and Anna created a compromise between the curriculum and assessments created by the PLC and their perceptions of their students' needs. Understanding their relationships with their students and the needs of those students led them to make a professional decision (Hoffman-Kipp, 2008). Similarly, pedagogical differences between all four classes as shown in PLC discussions and videotapes of classroom interactions demonstrate the professional judgments made by each teacher as reflections of their identities.

Working in a PLC created many instances of conflict and compromise for the teachers (Correa, Martinez-Arbelaiz, & Gutierrez, 2014). In creating the menu project on the causes of the American Revolution, the teachers worked closely together, each using his or her strengths, to create the assessment tasks. The partnerships that the teachers established helped them to work professionally to develop the curriculum and assessment pieces. The teachers also assumed roles in the PLC based on their strengths and weakness rather than assigning roles at the outset. The professional behavior of the teachers that was rooted in their identities conflicts with suggestions

for practices in PLC development that prescribe strict structural rules (DuFour, 2004; Harris & Jones, 2010). It should be noted that DuFour has revised the structures he recommended for the PLC earlier in his research (DuFour, 2015) to make them less restrictive and more adaptive to varying needs of different PLCs.

Implications for Practice, Policy, and Theory

The findings from this study have important implications for practice, policy, and theory. Teacher practices are impacted by creating curriculum and working in PLCs. Teachers must have an adequate understanding of the relationship among standards, curriculum, and materials in order to create viable curriculum and to properly integrate content areas if they desire to do so. Collaborative systems of inquiry allow teachers to examine their PCK and improve their practices, as does the process of creating curriculum. School and district policies should be adjusted to allow teachers sufficient time to do work in collaborative inquiry groups so that they can deeply examine their practices and grow as professionals. Theoretical understanding of constructivism is deepened as findings demonstrate how this group of teachers created ontologies of dwelling for their students and each other. Similarly, theoretical understanding of PCK is expanded as shown in the participants' metacognitive examination of their PCK in the setting of their PLC and the context of creating curriculum. Finally, findings about identity development support the idea that teachers' professional identity is rooted in their experiences with students and teachers and can be developed in a community of practice such as a PLC.

Teacher learning and practices. The finding that teachers had different conceptions of ELA content and of its relation to standards illustrates a policy issue that may exist in other school sites. Teachers must align curriculum to allow students to master the standards, as dictated by district policy. However, teachers do not change practices solely based on policy

decisions that are dictated from afar (Wilson, 2003). Instead, the teachers in this study worked collaboratively to create curriculum that would align to district policy while fitting the realities of their classroom (Lieberman & Miller, 1984). Some teachers in this study considered ELA content to be a direct reflection of the standards and/or the materials used in instruction. This may be a result of an oppressive policy or simply a misunderstood one. The district policy reads as follows: "...instruction in the fifth grade in English language arts must be designed so that by the completion of the fifth grade, pupils meet the standards adopted..." (Nev. Admin. Code ch. 389 § 29435, 2013). Teachers in this study who had previously been given basal or scripted ELA programs that were aligned to district standards realized we had to align the authentic curriculum to the CCSS. Therefore, we used those standards to represent the ELA content we desired to teach. This finding shows that the district's policy of alignment to standards confounded teachers' understanding of how those standards relate to content. Fortunately, the collaboration encouraged by their PLC allowed the teachers to examine their misconceptions and plan to address them in the next school year.

The teachers' practices were affected by different views of ELA content. Because they created projects primarily by starting with the ELA standards rather than the content, student inquiry may not have been wholly fostered. It would be interesting to see whether the teachers, after examining their misconceptions about ELA content and how it relates to the standards, create projects in the future that allow students to pose problems and create their own inquiry projects (Curwen, Miller, White-Smith, & Calfee, 2010; Rosler, 2008) by dwelling in the curriculum (Ross & Mannion, 2012).

Another implication for teacher practice is the finding that as students dwelled in the curriculum, teachers could address specific questions about content (both ELA and social

studies), such as how Judith responded to student questions about what relevant information about the colonies to include on their brochure projects. This allowed teachers to directly and specifically target the needs of their students instead of making *a priori* assumptions about what those needs would be and delivering lessons that were not adaptable to students' emergent academic needs. Instead, teachers could work as expert mentors to the students rather than being transmitters to passive receivers (Curwen, Miller, White-Smith, & Calfee, 2010). Teachers were observed working alongside students, posing questions that allowed students to examine their work, and facilitating student inquiry instead of dictating courses of action. Examples of this are found in the analysis of the videotaped lessons, as each teacher worked alongside groups of students to facilitate the research process rather than to prescribe a course of action for research. This finding confirms research in constructivism (Dewey, 1916; Morris, 1966; Piaget, 1957; Ross & Mannion, 2012) that suggests students learn more effectively when they are in active pursuit of knowledge rather than in passive roles as information receivers. The ways teachers interacted with students as described in the findings of this study can inform teachers on how to create ontologies of dwelling that operate in their own classrooms.

There is also an implication for teacher education programs. Since pre-service teachers often do not know whether they will be provided with curriculum (such as in districts with adopted basal or scripted programs) or whether they will develop their own, teacher education programs have a responsibility to instill knowledge of content and its relationship to standards and curriculum materials. Teacher education curriculum could be designed from a constructivist standpoint in which the pre-service teachers work with standards, curriculum, and materials to construct their knowledge of the relationships among the three. With widespread adoption of the CCSS, those standards can be used as units of study in teacher education programs where

teachers examine the standards and their relationship to the content areas and materials used in teaching the content. Embedding pre-service teachers into real school contexts where teachers examine the relationships discussed here is another strategy to increase their understanding of those relationships before they enter the classroom. Pre-service teachers can construct their understandings of standards, content, and materials by working alongside teachers (not simply observing them) in a real school setting. Teacher education programs could also provide pre-service teachers with opportunities to design integrated curriculum that spans several subject areas (not only ELA and social studies). Such opportunities would allow pre-service teachers to examine the ways in which they connect the disciplines and how to demonstrate connections for students.

Pedagogical content knowledge. The teachers studied in this project examined their content knowledge and their PCK through the acts of participating in a PLC and designing integrated curriculum in that PLC. Another implication for practice is that teachers, given the opportunity to create curriculum, will use that opportunity to examine their theoretical and practical stances (again, constructing knowledge through inquiry). Allowing teachers the opportunity to create curriculum rather than to use materials pre-packaged and scripted gives them a chance to reflect thoughtfully on their theoretical stances and on their classroom practices. This also shows a theoretical implication: teachers who are able to examine their practices and make changes based on new knowledge are working as professionals; teachers who follow scripts are simply practitioners. Recognition of the professional status of teachers is a desire expressed explicitly in PLC research (Allen, 2013; DuFour, 2015) and research on teacher learning (Darling-Hammond, 2006; Ravitch, 2000). The teachers also used each other's expertise to grow their content knowledge and creativity (Griffiths, 2014). Focusing on examining content

knowledge, PCK, and creativity as secondary aims of the PLC leads to accomplishing the primary aim of student learning.

Examining their PCK became a habit among the participants in this study. Knowledge of content, pedagogy, and strategies for effective delivery of the content were continually discussed, even in informal conversations outside of the PLC sessions. Teachers' engagement with examining their PCK was a result of their desire to effectively implement the curriculum they had created and of the democratic nature of their PLC structure. Because conflicts that arose during PLCs were academic in nature, those conflicts were opportunities to examine practices and theoretical stances. This finding contributes to existing literature on the structure of the PLC. Without prescribing a protocol (Allen, 2013; Saunders & Gallimore, 2009) or adherence to a specific model (Harris & Jones, 2010; Lieberman & Miller, 2011), teachers were still able to focus on content, active learning, coherence, duration, and collective participation (Bausmith & Barry, 2011). Of course, caution must be taken to ensure that the work of the PLC is focused on student learning and norms and values should be related to that goal (Lieberman & Miller, 2011).

The finding that teachers habitually explored their PCK in the context of the PLC also contributes to theoretical knowledge of PCK and its relationship to constructivism. The participants in this study continually constructed meaning regarding their PCK, their relationship to the curriculum, and their relationship to the students. The processes of creating curriculum and developing the PLC aided the teachers in deeply examining their PCK. This finding could be what Shulman (2004) had in mind when he wrote, "What distinguishes mere craft from profession is the indeterminacy of rules when applied to particular cases" (p. 211). The teachers in this study displayed a metacognitive awareness in examining their PCK that showed they

understood its very nature: PCK is not a static thing to be learned, but is a growing, changing entity inside the mind of every professional teacher.

PLC and professional development. Findings about teacher change that resulted from collaboration contribute new knowledge in the field of professional development. The growth in content knowledge and PCK, and teachers' willingness to examine their practices in light of the practices of their colleagues show that professional growth occurs outside of the context of facilitated professional development sessions in which teachers are passive receivers of information (Theriot & Tice, 2009). Collaboration about curriculum permitted teachers to examine theoretical and pedagogical stances. In contrast, if the teachers had been given scripted basal programs, there would have been little need to examine those stances (Valencia, Place, Martin, & Grossman, 2006). Teachers who are motivated by collaborating with colleagues and creating curriculum will professionally develop themselves. The implications of these findings relate to teacher practices and school policy. Districts should adopt professional development policies that allow teachers to construct their knowledge of teaching through inquiry, not through passive reception of information. For example, staff development days could be used by teachers to work in PLCs or inquiry groups to examine their practices through video studies, (Barnhart & van Es, 2015; Rosler, 2008), curriculum development (Valencia, Place, Martin, & Grossman, 2006), or examining the relationships between standards, content, and materials.

Teachers were also motivated to change and to rely less on routines because of the learning done in collaboration with one another. They enacted what they learned from their colleagues in their own classrooms and embraced change instead of fearing it. School policy should be adjusted to allow teachers opportunities to learn from each other actively through collaboration. However, mandating collaboration through excessive paperwork, hierarchies, or

heavy-handed administrative control could be counter-productive to teacher learning. The teachers in this study relied on each other and a desire to improve, and did not need a protocol, hierarchy, or special oversight.

Teacher identity. The teachers in this study developed their professional identities through the community of practice they created in their PLC. Most telling was the teachers' conception of ELA standards and their relationship to the content and materials. Differing conceptions, revealed in the final focus group interviews, led the teachers to identify an aspect of their professional identity that they desire to explore together in the future. The act of defining their differences together in a focus group and their comfort with that conflict demonstrates that the community of practice they created helped them to revise their professional identities (DuFour, 2015; Vescio, Ross, & Adams, 2008). It also demonstrates that part of their collective professional identity is willingness to disagree when disagreement leads to increasing their knowledge of the profession (Correa, Martinez-Arbelaz, & Gutierrez, 2014; Hoffmann-Kipp, 2008).

The teachers' individual and collective senses of efficacy grew as they developed their PLC and their professional identities. Their comfort with the practices of creating curriculum together and developing an efficient, effective PLC throughout the course of this study shows that those practices contribute to teacher efficacy and gives them a sense of professional identity. Furthermore, the teachers appeared to situate their individual professional identities within the context of their roles as members of the PLC. This finding contributes to theoretical knowledge of teacher identity as situated in communities of practice.

Limitations

The first limitation to this study is its small sample size. The participants consisted of only one grade level team of four teachers. All of those teachers were experienced, which may have affected their professional stance regarding the work done in the PLC. More research needs to be done that examines other grade levels and PLCs that consist of teachers with wider ranges of experience. The study also took place in school where students (as it was reported by teachers) came to integrated units lacking basic skills such as teamwork and creativity. Further research should be conducted in schools with more diverse populations to verify or contradict the findings about student learning, motivation, and connection to the curriculum.

The integration aspect of this study focused only on social studies and ELA. The findings about creating integrated curriculum should be supported by more research in integrating other subjects such as science and mathematics. Studies should be conducted in schools with different schedules that may allow for differing levels of integration throughout the school day. This study also took place in the first year of creating and implementing integrated curriculum at the school/grade level. More research is needed to determine if similar findings would emerge in schools/grade levels that had an established integrated curriculum, such as Judith's former school in Australia.

Positive changes in teacher knowledge and practice may have been simply the result of engagement with the curriculum, rather than a direct result of their work in the PLC. This has been deemed the Hawthorne Effect by previous researchers (Saunders & Gallimore, 2009). This effect suggests that engaging teachers by any means, not just by the means described in this study, could have produced similar findings. To illustrate, if the teachers in this study had created aspects of the curriculum on their own and combined them without collaborating, they may have

reported similar engagement with content, pedagogy, and PCK. Suggesting that engagement resulted specifically from their participation in the PLC or from their actions in designing curriculum could be fallacious.

Another fallacy to note is the anecdotal fallacy, in which probabilities of types of events are judged by availability. My judgment that students connected ELA with social studies as a result of the integrated curriculum contradicted the judgment of two of my colleagues. I may have committed an anecdotal fallacy. It was easy for me to judge student connections based on the availability of artifactual evidence of those connections and direct experiences in the classroom. But when we were removed from those instances in the focus group and able to reflect on that possible theme, two teachers reported that they did not notice students making any connections whatsoever.

This study's focus was on teachers, using student data only in the form of completed projects. No connections could be made between student achievement and integrated curriculum, other than observations made by teachers. Findings about student learning and connections between content areas could have been supported by quantitative achievement data, had such been available. Future studies that desire to report findings about student achievement that results from integrated curriculum should include data of student performance and interviews with children about their thinking regarding the curriculum.

The act of quantifying sentences and phrases that indicated open codes for qualitative findings could have been elaborated. Document analysis techniques could have been implemented in the methodology of this study to elicit quantitative findings of teacher discussion topics and engagement with the themes identified by the researcher.

Finally, because I was the researcher and a participant in the study, my personal beliefs and assumptions may have influenced the findings. I took care in bracketing my assumptions in the methodology section and in explicitly informing the other participants when my role as researcher may have interfered with our work in the PLC or vice-versa. It is my desire to report the findings of this project as objectively as possible so that those findings contribute new knowledge in curriculum design, PLC development, and teacher learning. Furthermore, my subjective engagement with the unit of study may have contributed to my enthusiasm in reporting the findings, rather than diminishing its reliability.

Conclusion

This case study presented several findings in the disciplines of curriculum creation, teacher learning, and PLC development. The process of creating curriculum from a constructivist standpoint allowed teachers to examine their knowledge of ELA and social studies content, those content areas' relationship to each other, their theoretical stances regarding curriculum and integration, the effect of integration on students, and the difficulties involved in their work. Contributions were added to constructivist and transdisciplinarity theory. Suggestions for teacher practice in the area of curriculum development and implementation are discussed. Difficulties and pitfalls related to designing integrated curriculum are delineated. Also, issues of school and district policy that affect curriculum design and integration are presented.

Participating in a PLC gave teachers the opportunity to examine content knowledge in two subjects (ELA and social studies) collaboratively and to learn from one another. Discovering conflicts, such as differing understandings of ELA content, and identifying strengths and weaknesses helped teachers increase content knowledge, pedagogical knowledge, and PCK. Providing teachers with time to work collaboratively and opportunities to design curriculum

allows teachers to actively examine and deepen knowledge of their craft much more effectively than passive facilitator-led professional development sessions.

This study also adds to knowledge about PLC development. The structure of the PLC studied did not use a hierarchy or protocols. Collaborating within a democratically structured PLC facilitated teacher learning and curriculum design. Teachers were able to focus on the goal of student learning without social conflict among participants or fear of administrative oversight or reprisal. Instead, conflicts that occurred were academic in nature, allowing teachers to examine their beliefs and stances. Teachers' professional identities played a role in their participation in the PLC as they worked through conflicts and compromises. The teachers also revised their professional identities based on their experiences with each other and with their students. The community of practice established in the PLC was a culture of comfort with conflict because the teachers were focused on their professional responsibilities of student and teacher learning.

Appendix A: Initial Interview Questions

This interview was conducted by the researcher with each of the three other participants individually. The questions below were asked explicitly and, if necessary, participants were asked to elaborate on their answers.

1. What is your interest in designing integrated curriculum in the PLC?
2. How do you expect your participation in the PLC to change your knowledge of teaching integrated curriculum?
3. How do you expect your participation in the PLC to change your classroom practices?
4. What resources/curriculum have you used to teach ELA in the past?
5. What challenges have you experienced in teaching informational text in the past?

Appendix B: Member Check Interview Questions

This interview was conducted by the researcher with each of the three other participants. Each question was asked explicitly. As participants responded, the researcher interjected probing questions based on themes found in the open coding process to verify possible findings with the participants.

- 1) What challenges have you experienced in designing integrated curriculum?
- 2) What successes have you experienced in designing integrated curriculum?
- 3) In what ways has participating in the PLC changed your knowledge of ELA/social studies content?
- 4) In what ways has participating in the PLC changed your pedagogical knowledge?
- 5) In what ways has participating in the PLC changed your classroom practices?
- 6) Is there anything you have discovered about yourself as a learner through the process of creating curriculum in a PLC?

Appendix C: PLC Agenda Minutes

This general format demonstrates the activities pursued in the PLCs in which integrated curriculum was developed. It is not a protocol that was followed by the team, rather, it is a general outline of the PLC process based on the literature discussed in chapter two.

- Review norms, discuss previous PLC meeting
- Discuss outcomes of previously taught lessons including “four questions:” What did we want students to learn? How did we know they learned it? How did we respond when they didn’t learn? How did we respond when they already knew it?

Support with artifactual/anecdotal evidence

- Set goals for upcoming curriculum
 - Align to CCSS
 - Discuss expected student outcomes
 - Collect and analyze materials
- Design curriculum for future unit
 - Develop daily plans
 - Develop assessment/interventions
- Reflections
- Plan next meeting

Appendix D: Informed Consent

INFORMED CONSENT

Department of Teaching and Learning

TEACHER LEARNING AND CHANGE IN PRACTICE AS A RESULT OF PARTICIPATING IN A PLC THAT DESIGNS INTEGRATED CURRICULUM

INVESTIGATORS: Derek Jordan, Shaoan Zhang, Marilyn McKinney

For questions or concerns about the study, you may contact Derek Jordan at 702-238-9349.

For questions regarding the rights of research subjects, any complaints or comments regarding the manner in which the study is being conducted you may contact the UNLV Office of Research Integrity-Human Subjects at 702-895-2794, toll free at 877-895-2794, or via email at IRB@unlv.edu.

Purpose of the Study

You are invited to participate in a research study. The purpose of this study is to investigate teacher learning and change in teacher practice as a result of participating in a PLC that designs ELA curriculum integrated with social studies.

Participants

You are being asked to participate in the study because you fit these criteria:

You are a fifth grade teacher who participates in a PLC that designs curriculum that integrates ELA and social studies.

Procedures

If you volunteer to participate in this study, you will be asked to do the following:

- Participate in all PLC meetings in which integrated curriculum is discussed
- Participate in an initial formative interview
- Participate in monthly member-check interviews
- Participate in a final focus-group interview
- Submit lesson plans to the investigators
- Possibly submit artifactual data from your classroom (student work, grades)

Benefits of Participation

There may be direct benefits to you as a participant in this study. We hope to learn how participating in a PLC contributes to teacher knowledge and change in practice. Your knowledge and practice may benefit from participation in this study.

Risks of Participation

There are risks involved in all research studies. This study may include only minimal risks. Your practices as a teacher will be closely examined, which may be a source of discomfort.

Cost/Compensation

There will not be financial cost to you to participate in this study. The study will take approximately one hour of your time for each interview (totaling six hours) beyond your regular work day. You will not be compensated for your time.

Confidentiality

All information gathered in this study will be kept as confidential as possible. No reference will be made in written or oral materials that could link you to this study. All records will be stored in a locked facility at UNLV for three years after completion of the study. After the storage time, the information gathered will be destroyed. Confidentiality cannot be guaranteed within the group setting of the focus group interview.

Voluntary Participation

Your participation in this study is voluntary. You may refuse to participate in this study or in any part of this study. You may withdraw at any time without effect to your relations with UNLV. You are encouraged to ask questions about this study at the beginning or any time during the research study.

Participant Consent

I have read the above information and agree to participate in this study. I have been able to ask questions about the research study. I am at least 18 years of age. A copy of this form has been given to me.

Signature of Participant

Date

Participant Name (Please Print)

Appendix E: Focus Group Interview Questions

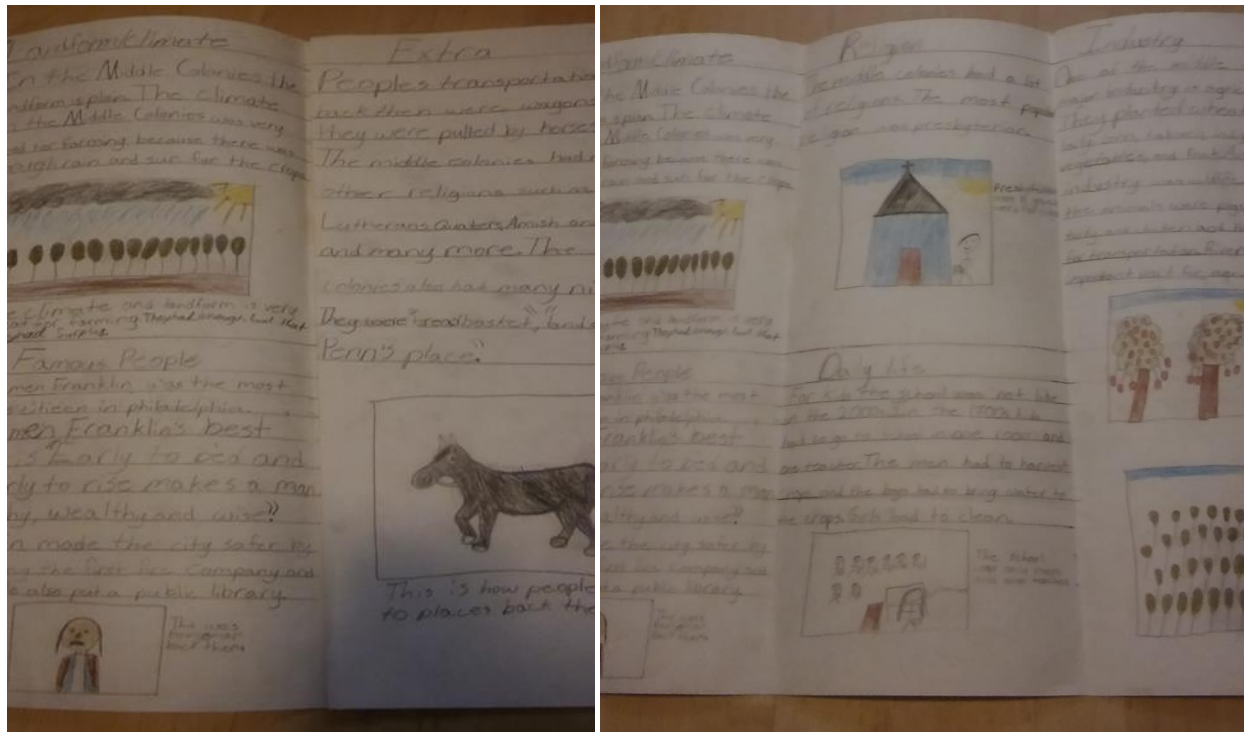
This interview was conducted by an outside co-researcher with all four participants. Questions were asked explicitly by the co-researcher. When necessary, the co-researcher also asked a participant to elaborate on a response.

Questions are listed as they were asked by the co-researcher

1. Can you describe in what ways you connected the ELA content with the social studies content?
2. Were there things that seemed more difficult to fit together, in bridging ELA and social studies content?
3. Did you notice that your students drew similar connections or different connections or none at all between the two [content areas]?
4. Was there anything about integrating any of the content areas that surprised you?
5. In what ways did your content knowledge of ELA change?
6. In what ways did your content knowledge of social studies change?
7. Did participating in the PLC cause you to change any routines that you relied upon in the past? Or did it alter your way of doing things?

Appendix F: Brochures

The following are examples of artifactual evidence, travel brochures for the thirteen British colonies, created by students.



Appendix G: Scoring Rubric

This is the rubric developed by the PLC to score presentations of research

| CATEGORY | 5 | 4 | 3 | 2 |
|---|---|---|--|---|
| Neatness and Organization | The work is presented in a neat, clear, organized fashion that is easy to read. | The work is presented in a neat and organized fashion that is usually easy to read. | The work is presented in an organized fashion but may be hard to read at times. | The work appears sloppy and unorganized. It is hard to know what information goes together. |
| Information, Research, and Content | There is an abundance of relevant information. | There is enough information, but there could be more. | There is little information or some of the information does not relate to the topic | There is no information or too much irrelevant information |
| Pictures/Illustrations | The pictures/illustrations relate to the topic and are accurately captioned | There are pictures related to the topic, but they are not well captioned | Some pictures or illustrations do not relate to the topic or are not captioned at all. | There are no pictures or illustrations that relate to the topic. |
| Contribution and timeliness | All group members contributed to the final product and it was turned in on time | Most of the work was shared, but there was a team member who worked more than others. | Project is late or one group member did more than his fair share of the work. | The work is late, or a group member did not contribute. |

Appendix I: Research Checklist

Social Studies Project: The Colonies

As you know, the thirteen colonies were under British rule until their separation and independence in 1776. You have been given a region from the era to research. Please use your resources (Social Studies textbook, library books, the internet) to complete a travel brochure that you can use to teach the class about your region. Below is a checklist to help guide your research.

- ☐ We have taken notes to use in producing our brochure
- ☐ Our information is on the region we were assigned and we researched
- ☐ We have written the sources of our information (Social Studies book, other book, website)
- ☐ We have told what present day states the colony was in
- ☐ We have found information about daily life in the region
- ☐ We have found information about major industry and/or agriculture in our region
- ☐ We have found information about any famous people from the region (remember this is COLONIAL times: Dan Marino, although he is from Pittsburgh, is NOT a famous person from the middle colonies!)
- ☐ We have told about the climate, landforms, housing, and wildlife of interest in our region.
- ☐ We have enough information to create a travel brochure and teach the class about our region.

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