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Implementing Proficiency-Based Learning: Perspectives Of Three Vermont High School Social Studies Teachers

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IMPLEMENTING PROFICIENCY-BASED LEARNING: PERSPECTIVES OF THREE VERMONT HIGH SCHOOL SOCIAL STUDIES TEACHERS

A Dissertation Presented

by

Catherine Toland

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ABSTRACT

The passage of Act 77 in June 2013 and the Educational Quality Standards passed in April 2014 are significantly changing the way education is being conceptualized in Vermont. These two policy mandates called for all Vermont high schools to shift to proficiency-based learning (PBL), also known as standards-based, competency-based or mastery-based learning, by 2020. Yet scant research exists on how to implement PBL. This qualitative study addresses this need by examining the perspectives of three exemplary high school social studies teachers who were early adopters of proficiency-based instruction and learning in their classrooms. The research centered on questions about the teachers’ perspectives on the curricular, instructional, and assessment shifts accompanying and supporting the implementation of PBL. The theoretical framework that informed this study was constructivist theory and the notion that knowledge is socially constructed through the learner’s interaction with the world (Brooks & Brooks, 1999). The study focused on teachers’ perspectives on and understandings of these shifts in order to capture innovative tools, strategies, and instructional approaches they developed as they implemented PBL. The findings may inform the thinking of social studies educators, administrators, policy makers, students, and other stakeholders interested in implementing PBL.

The major findings that emerged in this study included several key components the teachers identified as vital to PBL implementation in a classroom including the need to: 1) identify key skills and concepts required to meet proficiencies, 2) use targeted and ongoing feedback with learners, 3) enact a curricular design that situates proficiencies in authentic experiences that provide multiple opportunities for practice, 4) support the emergence of new structures in high schools such as larger chunks of time with students, high school teaming, and flexible grouping of students, and 5) teach students explicitly about the learning process.

The study also identified several broader policy considerations related to the implementation of PBL including a need for: 1) targeted professional development, 2) restructured school schedules to accommodate collaborative learning conversations among educators, administrators, and students, 3) collaboratively designed (including student voice) learning proficiencies that create a coherent experience from grades 9 to 12 (Fullan, 2016), and 4) redesigned preservice teacher training so that newly credentialed teachers are prepared to teach in proficiency-based centered learning environments.
DEDICATION

This is dedicated to the students who have so patiently and generously shared their learning with me. Thank you for inspiring me with your insight, ideas, wonder, effort and humor.
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First, I’d like to thank the participants in this study. They taught me so much about proficiency-based learning, teaching, and always striving to improve student learning.

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I would like to thank Alan Tinkler for his valuable feedback at the proposal defense. I listened to the recording of the defense proposal several times and there were so many pieces of advice you gave that helped me organize my research. Thank you.

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CHAPTER ONE
INTRODUCTION

This chapter introduces the conceptualization of the research study discussed in this dissertation that examines the implementation of Proficiency-Based Learning in Vermont high schools. The chapter begins with an overview of the problem that shapes the study, and then places the study in context, clarifying the purpose of the study including the rationale and significance. The chapter then follows with a description of the theoretical framework, and lays out the organization of the dissertation.

Statement of the Problem

As the United States entered the 21st century there is a strong public perception that as the century changes so must organizations, and particularly schools, if they are to meet future trends and needs. There is a nexus of thought in education combining the need for new ways of learning, new levels of equity for all students, a shift from a focus on teaching to a focus on learning and the use of evidence-based teaching practices.

Fullan and Langworthy (2014) wrote, “Three new forces—new pedagogies, new change leadership and new system economics—are converging with broader social, economic, technological, and organizational contexts in a manner that presents the most favorable conditions for transformation in over a century” (p. 87). In 2000, in Schools that Learn, Senge, Cambron-McCabe, Lucas, Smith, Dutton, and Kleiner wrote:

The assembly-line education system is under stress. Its products are no longer judged adequate by society. Its productivity is questioned. And it is responding in the only way the system knows how to respond: by doing what it has always done
but harder. Workloads increase. Standardized testing is intensified…Whether they espouse it or not, educators are responding to the extraordinary anxiety and stress they are experiencing by turning up the speed of the assembly line. While this might produce a bit more output, all of us—students, teachers and parents—should be asking whether it produces more learning. (p. 32)

The increasing pressure and stress on education suggests that the narrative about 21st century learning needs to change (Pink, 2011; Robinson, 2016; Wagner, 2008). The factory model is untenable and the old model in which schools were created to serve the industrial economy had a need for unskilled workers.

In the 21st century, there is an increasing recognition that students need to graduate from high school with the skills needed to manage problem solving, critical thinking, collaboration, and creativity (Fullan & Langworthy, 2014; Robinson, 2016; Wagner, 2008), and communication (Framework for 21st Century Learning) if they are prepared to compete in the emerging labor market and to be successful in an environment that is constantly changing. Tony Wagner (2008) summarized this shift when discussing America’s low ranking on international test scores:

Schools haven’t changed; the world has. And so our schools, then, are not failing. They are obsolete—even the ones that score the best on standardized tests—which is a very different problem requiring an altogether different solution. (p. 6)

Ken Robinson (2016) added that 21st century schools must honor and reflect, “The real principle on which human life is based which is organic growth and development” (Keynote Address, Big Bang Conference). He continued to argue for a change in schools
because “there is not a path for all of us to follow”. Robinson challenged how schools currently characterize success and argued that it needs to be expanded. He noted that 25% of high school students that start 9th grade do not complete 12th grade in the US and that “failure is endemic because of the way that we’ve characterized success and if you change the characterization of success suddenly people achieve things you never expected, they probably didn’t expect either” (Keynote address, Big Bang Conference, 2016). Daniel Pink (2011) claimed that human motivation has changed as human society has grown increasingly complex and with larger numbers of jobs that require high-level, novel, and innovative thinking. He put forth in his book *Drive* that human motivation to create at high levels is driven not by “carrots and sticks” but by the meaningful, intrinsic goals of “our innate need to direct our own lives, to learn and create new things, and to do better by ourselves and our world” (p. 10).

Teachers, schools, and stakeholders are asked to consider a paradigmatic shift. Fullan and Langworthy (2012) suggested that the new pedagogies should be,

Premised on the unique powers of human inquiry, creativity, and purpose, new pedagogies are unleashing students and teachers’ energy and excitement in new learning partnerships that find, activate and cultivate the deep learning potential in all of us.” (p. i)

This paradigm shift they explained would be a pedagogy model that had as its foundation a notion of teacher quality that would include a “repertoire of teaching strategies and… [the] ability to form partnerships with students in mastering the process of learning” (p. 3).
Toshalis and Nakkula (2012) highlight another body of literature and research that informs the new way of thinking about teaching and learning which links student motivation, engagement, and voice. They embrace the notion that learning must be centered on a human approach with all of its complexity. In the introduction they asked their readers to:

Please think with us about the contributions that motivation, engagement, and student voice make to the experience of human agency. If education is, at least in part, intended to help students effectively act upon their strongest interests and deepest desires, then we need a clearer understanding of how to cultivate that sense of agency. (p. 2)

The increasing awareness of the need for student engagement and agency intersected with the ever-present desire to improve educational results. This coupling has created another wave of reform within the U.S. public high school that moves away from traditional notions of how high school is structured around coursework, grades, and test scores and instead is focused on teaching in a way that deeply engages students in their own learning in order to meet proficiencies needed for future success.

**Context of the Study**

As a result of Act 77 and the Educational Quality Standards (EQS) in the fall of 2016, all 9th graders in Vermont public schools were expected to work toward progress to graduation via a proficiency-based system. Beginning with 9th graders in the fall of 2016, students are required to demonstrate that they have met their school’s graduation proficiency requirements in order to graduate high school in 2020. This proficiency-based
system is a contrast to the current system, which uses standard units, or Carnegie Units, to measure student progress based on seat time, typically 120 hours per course. Since the early 1900s, the Carnegie Unit has been used as a common way across the US to measure high school and higher education student progress toward graduation (Silva, White, & Toch, 2015). By 2020, all Vermont students will graduate from high school based on their ability to demonstrate proficiency rather than showing they have met the requisite number of required credits. All Vermont high schools will utilize proficiency-based systems for the graduating class of 2020 if they are to comply with Act 77 (passed by the Vermont State Legislature in June of 2013) and the EQS. In its Introduction to the EQS, The Vermont Agency of Education (AOE) (2014) described the relationship between the two mandates: “The intentional alignment between the two implies the expectation that personalization and proficiency will complement and reinforce each other” (p. 1). The AOE (2014) described a proficiency-based system as one in which, “Students can only advance when they demonstrate the attainment of skills and knowledge, irrelevant of time spent in a classroom” (p. 1).

While Act 77, also referred to as the Flexible Pathways bill, mandates every student have a Personalized Learning Plan (PLP) and access to multiple pathways to high school graduation, the EQS mandate that all students demonstrate proficiency of the Supervisory Unions standards in order to graduate. Act 77 and EQS allow each Supervisory Union (SU) to develop, implement, measure and track its own proficiency-based graduation requirements (PBGRs). Local implementation honors the Vermont value of local control (Vermont Council on Rural Development, 2009) as all 62 SUs in
Vermont are working to create their own PBGRs. This shift is a major shift in measuring
learning and Vermont high schools are working to implement proficiency-based systems
and are in a range of stages in relation to implementation.

In its *Introduction to the Educational Quality Standards* (2014), the AOE stated
how dramatic this shift to proficiency-based learning (PBL) is and will be for all
stakeholders in Vermont high schools. They described the shift as an “intentional shift
from inputs to outcomes; from a focus on courses and Carnegie Units to a focus on
proficiency” (p. 1). Thus, the focus of school becomes on the process of student *learning*
rather than on the *teaching* process. As Rinkema and Williams (2014) wrote, “What we
teach and what students learn are potentially completely different, and it wasn’t until we
realized that the first is virtually irrelevant that we began to make significant changes in
our instruction” (para. 4). The Vermont AOE is working in partnership with the nonprofit
organization Up For Learning to help “build public understanding of school redesign in
Vermont” (Shaping our Future Together, 2014, p. 1) and in their resource publication
they describe:

> A number of key features that one can look for in a student-centered, proficiency-
> based environment:

- The environment is welcoming, caring and safe because learning
  involves taking risks and making mistakes.
- Students share responsibility for their own learning, rather than the
  teacher or the parent taking responsibility for them.
• Students have a voice in determining how they will learn and demonstrate their learning.

• Assessments are customized for students.

• “Rubrics” or scoring guides are used to assess whether students have met the standards. These keep performance levels high even though the specific demonstrations of learning may vary.

• Students are allowed to move at different paces through the learning process.

• Students understand the learning goals and the level of thinking required to demonstrate proficiency.

• Students are grouped and regrouped as needed, depending on what they need to learn next. (p. 8)

As evidenced by this list of “key features” of PBL, these mandates, implied and stated, in Act 77 and the EQS are not small shifts. And the stakeholders that will be most dramatically impacted in their day-to-day lives will be teachers and students. SUs are currently constructing proficiency-based systems and many educators have engaged in implementing PBL.

Since the adoption of the Vermont Framework of Standards in 2000, the Vermont AOE worked to clarify mandates with supports that would facilitate the shift to standards-based or proficiency-based learning. Since the passage of Act 77 and the EQS, the AOE has been working to provide help and guidance to SUs around the state as they work to implement PBL and PBG. The context of Vermont is smaller class sizes, a
citizen legislature that meets from January until the end of the session, usually in May or June, when legislators return to their job and life in their own communities, and one of the highest high school graduation rates in the country.

**Purpose**

This qualitative study explores the perspectives of three Vermont high school social studies teachers as they implemented PBL. The goal of this study was to collect data from teachers who have already considered the shift to PBL and who are implementing it in their classroom to examine what their perspectives are on the shifts in curriculum, instruction and assessment. The study sought to capture the study participants’ perceptions of what is working well with PBL implementation and what has been helpful to them in the transition. Specifically, this study will use a case study design (Stake, 1995) including interviews, observations, and document review to the perceptions of three social studies educators concerning their shift to PBL in terms of curricular, instructional and assessment shifts.

**Why Social Studies?**

The rationale for PBL is varied. In social studies much of the case for PBL has been generated within the discipline’s literature. The National Council for the Social Studies and 14 other professional organizations published a framework called the College, Career & Civic Life C3 Framework for Social Studies State Standards (National Council for the Social Studies, 2013). This document supports the shift to PBL and focuses on student learning outcomes organized around proficiencies. The organization of the C3 framework for social studies education is around an “inquiry arc” which
encourages teachers to start with helping students craft questions which in turn drive their learning. This signals a national shift from a traditional approach to a more constructivist and active approach to teaching social studies. As the document notes,

Many of the same skills that are needed for active and responsible citizenship—working effectively with other people, deliberating and reasoning quantitatively about issues, following the news, and forming and sustaining groups—are also crucial to success in the 21st century workplace and in college. Individual mastery of content often no longer suffices; students should also develop the capacity to work together to apply knowledge to real problems. (p. 19)

This description does not reflect common teaching practices in high school social studies classrooms (Byrnes, 1997; Wiersma, 2008). As Russell (2010) noted, “Passive learning dominates social studies curriculum preK-12 despite the abundance of research calling for engaged learning” (p. 65). Focusing on social studies teachers, in particular, provides a way to examine a discipline-based teaching approach that has traditionally not focused on student centered learning and engagement. Examining how social studies teachers in particular are implementing PBL provides a way to potentially to provide examples of how the social studies curriculum could be transformed which would be more in keeping with the goal of social studies curricula, as Russell (2010) noted, “Because the goal of social studies teachers is to develop students into effective 21st-century citizens through the use of a diverse curriculum and instructional practices, one can conclude that social studies teachers are not maximizing their potential to meet this goal” (p. 70). Secondarily,
focusing in on one area of study provides a way to more deeply examine PBL within a disciplinary context.

Theoretical Framework

The theoretical framework that guides this study is constructivism. It assumes that knowledge is socially constructed through a learner’s interaction with the world (Brooks & Brooks, 1999) and assumes that the learning brings his or her own knowledge, skills, and beliefs to the process of learning (Doll, 1993; Duckworth, 2001; Sousa & Tomlinson, 2011; Zull, 2002). This study posits teachers as constructivist learners as they seek to implement proficiency-based curriculum design, instruction, and assessment in their classrooms. The goal of this study is to uncover teachers’ perceptions of how they are constructing PBL in their classrooms in terms of how they will guide learning and support students in meeting proficiencies.

This study examines the intersections between Act 77, Constructivist Learning Theory, and Social Studies Teacher’s Implementation of PBL.
Figure 1: PBL Implementation

**Significance**

This study sought to contribute to the understanding of PBL and how it can be implemented in a social studies high school classroom. Additionally, the study sought to inform the implementation of PBL for other Vermont high school social studies teachers and contribute to and enhance current literature on PBL nationally. While there is a growing body of literature on how to implement PBL, there is a lack of literature on the exact process used by teachers to adapt their instruction, assessment, and curriculum to a PBL system.

**Research Questions**

This study explored the larger question of, “What can be learned from three teachers who have implemented PBL in their classrooms?” The specific sub questions are
related to perceived instructional, curricular, and assessment shifts that accompany or comprise of the implementation of PBL. The desired outcomes are made for storytelling to illuminate and illustrate particular strategies, tools, and thinking the teachers used and what challenges they identified and possibly for which they found solutions.

In addition, the findings may inform the implementation of PBL in other disciplines and school wide and contribute to our understanding of how PBL can operate in a classroom. The findings of this research also have the potential to inform our knowledge base on PBL and inform the work of administrators, professional development, teachers, policymakers related to PBL.

**Chapter Summary**

This chapter provided an introduction to the study’s focus on how three social studies teachers implemented PBL in their classrooms including the problem the study sought to inform, the context of the study, how the study was conceptualized, and its potential significance. The dissertation is organized into four additional chapters. The next chapter, Chapter Two outlines the literature review used to frame the study design. Chapter Three outlines the study design and then Chapter Four reports on the findings. The dissertation concludes with Chapter Five which provides a summary of the findings and implications for future research.
CHAPTER TWO

REVIEW OF THE LITERATURE

This chapter provides an overview of literature related to the study including PBL, current social studies pedagogy and its relation to PBL implementation, and teacher learning and why generating models and examples of implementation for them to study are essential for effective implementation of PBL. This chapter also provides an overview of the national standards movement in Vermont and discusses the role of the school districts in implementing Act 77, PBL, and PBGRs. In addition, the implications of proficiency based grading on high school social studies teachers will be examined, and concludes with a discussion of how PBL could pose a challenge for history teachers in particular. The chapter ends with a discussion of the need for research that examines the implementation on PBL for social studies teachers in particular.

Overview of Standards Movement

Fifty years ago, Norman Hamilton, a superintendent in Portland, OR wrote, “The Units of credit earned describes very little about educational experiences for any particular individual” (Harris, 1966, p. 270). He went on to write about how he was sure “the Unit” has seen its time come to an end and, with all of the new technology in 1966, that a shift to a new system of determining learning progress was bound to happen soon. The conversation about shifting from a system of accruing credits to considering what and how to accurately measure student learning, especially in high school, have been happening at the national level for a long time. A common response has been to create standard after standard and to also create measure after measure to assess those standards.
This conversation and its continued evolution are referred to as the standards movement in the US.

The current U.S. Standards Movement can trace its origins to the “Recommendations B: Standards and Expectations” section from the report issued by the National Commission on Excellence in Education issued in April 1983 entitled *A Nation at Risk: The Imperative for Educational Reform*. The report caused fear that without national education standards in the US, the economic prosperity of the US was in danger. The report had a significant impact on educational policymaking and as Amrein and Berliner (2002) argued:

Despite its lack of scholarly credibility, *A Nation at Risk* produced massive effects. In international rankings such as PISA and TIMMS, students in the United States do not perform as well as students in other developed countries (citation). This is often cited as why national standards are vital for the US. The National Commission on Education called for more rigorous standards and accountability mechanisms to bring the United States out of its purported educational recession…as a result…state policymakers in every state but Iowa developed educational standards and every state but Nebraska implemented assessment policies to check those standards. (p. 4)

Educators, policy makers, administrators, business leaders, and school reformers have long expressed concern about the proper inputs, defined as what students should learn in schools coupled with a deep desire to effectively quantify those outputs, defined as how students demonstrate their learning, determined worthwhile. Inputs mean what is
studied and taught including curriculum, content, dispositions and skills. Outputs are quantifiable and qualitatively measurable results. A continued lack of satisfaction with outputs in the form of standardized test scores both nationally and internationally has been repeatedly revisited and expressed.

The national standards movement gained significant traction in shifting the focus from inputs to outputs with the passage of No Child Left Behind Act of 2001. The law required that states not only develop and implement standards but also systems of assessments by which to measure student learning in relation to those standards:

The centerpiece of the bill is the requirement that states develop and implement ‘challenging’ academic standards in reading and math, set annual statewide progress objectives to ensure that all groups of students reach proficiency within 12 years, and then test children annually in grades 3 through 8, in reading and math, to measure their progress. (PBS.org, 2002)

In response to No Child Left Behind, states were required to create their own standards and assessments of those standards. In a speech in 2002, George Bush outlined the shift in thinking attached to standards. “America’s schools will be on a new path of reform, and a new path of results” (whitehouse.gov).

In 1996, in Vermont, the Vermont DOE and the Vermont Board of Education adopted the *Vermont Framework of Standards and Learning Opportunities*. The creation of the standards was explained in the document in the question and answer appendix as follows: “Standards raise expectations for all learners. Vermont’s Framework affects virtually everyone involved in Vermont public education, from prekindergarten through
grade 12.” In addition, the document states that the purpose of the standards is to “improve student learning” and that the standards will be used in three ways:

1. To provide a structure from which standards-based district, school, and classroom curriculum can be developed, organized, implemented, and assessed.

2. To provide the basis for the development of a state, local, and classroom comprehensive assessment system.

3. To make explicit what may be included in statewide assessments of student Learning.

In 2009, another nationwide effort to articulate standards took shape in the form of the Common Core State Standards Initiative which was started, according to the Common Core website, through a collaboration between the National Governors Association Center for Best Practices (NGA Center) and the Council of Chief State School Officers (CCSSO) to identify national standards that states could choose to adopt. These standards have been adopted by 42 States, including Vermont, as of May 2016 (Common Core State Standards Initiative, 2016).

**From National Standards to Student Centered Learning in Vermont**

The search for similar clarity around learning goals continued in 2002 when the Vermont High School Task Force, convened by the Vermont DOE to identify a path to improving high school education, published a document called High Schools on the Move. In this document the Task Force identified Twelve Principles for high school renewal. High Schools on the Move communicates a very similar focus as the one found in Act 77 and the EQS as evidenced by the document’s tenor and focus. “We believe that
a high school education should help students use their learning to manage and direct their own lives, inspiring them as well to join others to improve life within their communities” (Vermont High School Task Force, High Schools on the Move, 2002, p. 2). Identified in this document are Twelve Principles, such Flexible Structures, Personalized Learning, Multiple Pathways, and Challenging Standards, that the committee believed would, “encourage wide ranging exploration of the many ways to explore personalized learning, fulfilling individual goals while meeting common standards” (p. 3).

The latest iteration of this work in Vermont was with the passage of Act 77 by the Vermont Legislature in 2013 and the adoption of the EQS (Vermont AOE, 2015). Collectively these mandates require the implementation of a variety of initiatives focused on personalizing learning for Vermont youth. These initiatives include progress toward graduation being measured through PBGRs using PBL, which is also referred to as Standards Based Learning (SBL). While the literature is expanding on practices associated with PBL (DiMartino & Clark, 2008; Guskey & Bailey, 2010; Marzano, 2010; Moss & Brookhart, 2012; Vatterott, 2015), there is very little evidence concerning how best PBL or SBL should be implemented within the classroom, especially in Vermont in response to the mandate for PBGRs. “Educators are unlikely to find an abundant amount of research on ‘proficiency-based learning,’ per se, because the term comprises educational models and instructional approaches that share many important commonalities, but that may also vary significantly in design, application, and results” (Great Schools Partnership, 2016). Act 77 mandates what seems like concrete and straightforward steps; however, the changes that high schools need to undergo in order to
fully realize Act 77 and EQS require no less than a dramatic systems-level philosophical overhaul. As DiMartino and Clark (2008) asserted, “Although the image of the new high school is simply stated, the change has been extremely difficult to achieve, because it begins to transform all the facets of high schools that stabilize a large organization” (p. 10).

The Vermont AOE anticipated this and wrote in their *Introduction to Act 77* (2016), “This new way of looking at learning and its demonstration implies a new role for schools and educators. Understanding how to value all learning experiences against the Standards to which all students are held will demand a significant practice shift” (p. 2). To undertake something this large, educators and educational leaders will need to see models of how teachers in Vermont who are already doing this work have taken their first steps. This research project seeks to address this issue through interviewing and observing high school history teachers who are engaged in implementing PBL.

In June 2013 with the passage of Act 77, also referred to as the Flexible Pathways Initiative, Vermont advanced the standards movement in the state but operationalized standards as graduate competencies that would be attained through PLPs. Personalization refers to additional mandates which accompany the use of standards in this Act and related EQS. The purpose of the legislation according to the text in Act 77 (AOE, 2013) was:

1. To encourage and support the creativity of school districts as they develop and expand high-quality educational experiences that are an integral part of secondary education in the evolving 21st century classroom;
2. To promote opportunities for Vermont students to achieve postsecondary readiness through high-quality educational experiences that acknowledge individual goals, learning styles, and abilities; and

3. To increase the rates of secondary school completion and postsecondary continuation in Vermont.

Act 77 and the EQS pair the concepts of PLPs and PBL. Another intended key concept, not as clearly articulated in the legislation, is student as key stakeholder and agent in his or her education (Great Schools Partnership, 2014; Up for Learning, 2016). Act 77 identifies multiple pathways students can take to demonstrate proficiency and progress toward graduation. Act 77, coupled with the EQS, is another effort, in a series of efforts, to establish learning standards in Vermont.

It is easy to trace the trajectory that accelerated a desire for increasing clarity of an articulation of these standards. Act 77 and the EQS call for this articulation of standards in the language of “proficiencies”. The AOE has created sample graduation proficiencies with performance indicators for elementary, middle and high school that any supervisory can adopt; however, the AOE has left the SU the flexibility to create their own language and performance indicators for the proficiencies that determine graduation in their SU. Act 77 and the EQS have a distinctly Vermont character which is sometimes referred to as the desire for local control. In 2009 the Vermont Council on Rural Development completed an 18-month study during which they interviewed Vermonters across the state. In the report’s first chapter on Vermont culture, the nature of local control is described well: “Vermonters are passionate about the state identity, but
they are even more connected with their local community” (p. 40). A few lines down it reads, “The issues on the table in a small town are close to the hearts of the residents there” (p. 40). It is in this spirit that the EQS allows the flexibility for the development of proficiencies to take place at the SU level. This honors a desire for local control yet could add complexity to statewide implementation as interest, ability, and interpretation of legislation may vary statewide. In addition, the AOE has compiled resources for educators and leaders in school districts.

In addition to Act 77, this education reform is bolstered and complemented by the EQS developed by the EQS Commission, which went into effect in April 2014. EQS replaced the School Quality Standards. The AOE published a document called, “Introduction to the Educational Quality Standards” in June 2014. In this document the AOE links Act 77 and the EQS.

The Role of the School Districts in Implementing PBL and PBGRs

Implementation of PBL and PBGRs will happen at the SU level at each of the 62 SUs in Vermont. The personalization of education will be facilitated through the mandated development of PLPs for all students in grades 7-12 by the year 2020. The 7th graders and 9th graders in 2016 will be the first classes to have PLPs all the way through their later middle and high school years and will graduate in 2020 when the requirement expands to all students in grades 7-12. The PLP that each student will have is to be developed with students, parents, guidance counselors, teachers, and possibly special educators, physical therapists, speech therapists, occupational therapists, or persons in other roles that would benefit students’ PLP development. In 2014 the Vermont State
School Board, which works in conjunction with the AOE to determine education policy, revised its School Quality Standards (SQS) and replaced them with EQS that align with Act 77. The relationship between the legislative bill and the new EQS are described by the Agency as follows:

Essentially, this revised document articulates the intentional shift from inputs to outcomes; from a focus on courses and Carnegie units to a focus on proficiency. There is...intentional alignment between EQS and Act 77. It could be argued that while Act 77 is primarily about the shift to personalization in the educational experience, EQS is primarily about the shift to the demonstration of proficiency in the educational experience. The intentional alignment between the two implies the expectation that personalization and proficiency will complement and reinforce each other. (2014, p. 1)

The change is articulated as a shift away from inputs toward outcomes, and a shift away from Carnegie Units toward proficiencies. The Carnegie Unit, which translates to 120 hours of seat or contact time, has been used since the early 20th century to determine college readiness and to quantify the high school diploma. The EQS state:

Proficiency-based learning” and “proficiency-based graduation” refers to systems of instruction, assessment, grading and academic reporting that are based on students demonstrating mastery of the knowledge and skills they are expected to learn before they progress to the next lesson, get promoted to the next grade level, or receive a diploma. (AOE, 2014, pp. 5-6)
In place of these hours, SUs are charged with creating a set of standards that students have to meet or exceed in order to graduate. As mandated by Act 77 and the EQS, students will have learning opportunities (including classes, virtual and blended learning, work experiences, internships, college courses, and other flexible pathways) through which they will develop, practice, and show mastery or proficiency of the standards in order to meet the requirements for graduation.

One of the most significant shifts from previous policy is that the proficiencies are not a list generated for students but skills that students will have to show evidence of having been able to demonstrate with increasing cognitive complexity throughout their high school experience. Act 77 requires that each SU develop proficiency-based graduation requirements. The PBGRs must clearly articulate student outcomes and how they will be measured. In addition, each SU must develop a process for implementing PLPs and for schools and students to track this proficiency and progress toward graduation. This will require complex adaptations on the part of the school. The language in Act 77 encourages new thinking about the high school experience. According to the Vermont AOE (2016) *Introduction to Act 77* in a section on Flexible Pathways to Graduation, the AOE emphasized that the idea of flexible pathways is:

*At the heart of Act 77 and is defined as ‘any combination of high-quality academic and experiential components leading to secondary school completion and postsecondary readiness’…this does not refer to a finite menu of pre-selected pathways from which a student must choose. Rather, it implies that there may be as many unique pathways as there are students.* (p. 1)
By 2020, each student must demonstrate proficiency in the standards developed by their SU. This will become the “sole means for determining progress and graduation” (Vermont State Board of Education, 2014, p. 9). SUs will concurrently have to create a system for PLP implementation for each student. In the PLP students will document how they have attained proficiency toward graduation requirements. The traditional use of credit accumulation for graduation may remain in place; however, according to the EQS “credits must specify the proficiencies demonstrated in order to attain a credit and shall not be based on time spent in learning” (AOE, 2014, p. 12). Graduation progress no longer has a sole focus on temporal commitment; the outcomes are now to be evidence based. There needs to be evidence of the proficiency after a class is over.

While there is a growing body of research that supports the philosophical foundations of PBL, because it is such a new field there is remarkably little research on its implementation. While there is a lack of research on implementation of PBL, especially teacher perspective on how to implement PBL, there is a growing body of research focused on the link between evidence-based practices and the implementation of PBL and an emerging number of resources related to implementing PBL.

A proficiency-based system requires that teachers develop learning targets and scales related to proficiencies so they can track students progress toward graduation and so they can “convey to students the destination for the lesson—what to learn, how deeply to learn it, and exactly how to demonstrate their new learning” (Moss, Brookhart, & Long, 2011, p. 66). Moss et al. describe one of the key attributes of a proficiency-based system, learning targets, as follows:
Teachers share the target with their students by telling, showing, and—most important—engaging students in a performance of understanding, an activity that simultaneously shows students what the target is, develops their understanding of the concepts and skills that make up the target, and produces evidence of their progress toward the target. Together, teachers and students use that evidence to make decisions about further learning. (p. 16)

Why Focus on PBL Implementation in Social Studies?

As a teaching discipline, social studies has remained relatively untouched in terms of high stakes testing. Kenna and Russell (2014) note, “Today, all 50 states have developed or adopted standards for social studies, which include history, geography, economics, and civics/government; yet, without the high-stakes tests associated with the standards” (p. 78). According to a study done on time spent on social studies in elementary classrooms in South Carolina, standards movements have had the opposite impact on social studies by lessening teacher attention to it as a subject because of the focus on testing remaining in other disciplines, namely reading and math (Vogler & Virtue, 2007). The authors concluded, “Clearly, research indicates that social studies have been given less instructional time in elementary schools in part due to the testing requirements in the NCLB legislation” (p. 21).

Social studies teachers have often been on the outside looking in during much of the era billed as the standards-based educational reform (SBER), but with the adoption and implementation of the Common Core State Standards (CCSS),
social studies teachers seem to have been invited back inside. (Kenna & Russell, 2014, p. 75)

The Common Core State Standards do not include social studies or history standards yet there is a new role for social studies and history in the Common Core era. There are literacy standards students should learn and practice in their social studies and history classes (CCSSO/NGA, 2010). These standards could be integrated into the standards that social studies and history teachers currently utilize in their teaching. The current standards can come from a variety of state and national standards that have been created in response to the national standards movement. The existing standards that teachers are using could include National Curriculum Standards for the Social Studies, the National Geography Standards, the United States History Content Standards, the National Geography Standards and Skills, the National Content Standards in Economics Geography, and more. The spirit of the Common Core literacy standards for subjects outside of English are described well in the following passage:

It is important to note that the grade 6-12 literacy standards in history/social studies, science, and technical subjects are meant to supplement content standards in those areas, not replace them. (Read the Standards, p. 1)

These literacy standards, coupled with PBL systems related to developing targets and scales will help history teachers move away from a curriculum that is disjointed and focuses on facts instead of concepts. Caron (2005) described the problem of the traditional framework for organizing history curriculum.
Typically, history units are framed around the chapter or unit titles presented in the textbook—“The Jacksonian Era” or “The Great Depression” in U.S. history or “Ancient Greece” or “The Age of Exploration” in world history. Units designed that way often lack coherence, as historical events, figures, and topics are taught in isolation from any larger theme or issue. (p. 52)

The Common Core standards encourage teachers to create learning opportunities for literacy across content areas “because students must learn to read, write, speak, listen, and use language effectively in a variety of content areas, the standards promote the literacy skills and concept required for college and career readiness in multiple disciplines” (Common Core, 2016, p. 1). The authors raise the question, “Yet, how will the standards impact social studies teachers’ instructional practices?” (p. 75).

**Challenging Traditional Methods of Teaching History**

Proficiencies require a shift in the way history, which is a core discipline in the social studies curriculum. The practice of identifying skills arranged in increasing cognitive complexity is not the way a typical history teacher designs curriculum. Designing learning opportunities for students to gain continued practice and expertise at skills is not common in history and social studies pedagogy. Social studies has typically been a discipline in which teachers lecture and students take notes.

This dismal track record stems from a teaching method that relies primarily on the memorization of names and dates. To limit the study and assessment of history to a student's ability to regurgitate these facts hides the true nature of the discipline. History, at its core, is the study of questions and the analysis of evidence in an
effort to develop and defend thoughtful responses. For students to truly be engaged with the past, they must be taught thinking skills that mirror those employed by historians (Lesh, 2011, p. 46)

According to Russell (2010), after conducting a nationwide study of the survey results of 281 secondary social studies teachers’ methodologies, “Students are inundated with pedagogy in which exposure of factual information is the paramount means to successful learning. Students are encouraged to regurgitate facts as a means to demonstrate academic understanding” (p. 66). He went on to write:

These results demonstrate that the participants use a more traditional style of teaching, by incorporating passive learning methods. Although these methods and practices promote passive learning and are considered inferior to the more authentic methods and practices that encourage active participation, teachers are still using them. (p. 69)

This study was done in 2007. The results might be very similar in 2016. There are, however, several leading scholars in the field of history who articulate and model a social studies pedagogy that goes well beyond “regurgitation.” The social studies are rich content for deep thinking and proficiency-based learning. “Asking questions about causality, chronology, continuity and change over time, multiple perspectives, contingency, empathy, significance, and motivation enable students to use the substantive information to address essential historical issues.” Hearing from social studies teachers how they are already doing this and in what new ways they are doing this to facilitate the shift in Vermont to create a road map for others is essential. There are many leaders in
the history and social studies teaching who are paving the way. Wineberg (2001) challenged the notion that the focus of history is on memorizing facts and described the limitation of history textbooks:

In addition, traces of how the text came to be are hidden or erased: Textbooks rarely cite the documentary record; if primary material appears, it is typically set off in “sidebars” so as not to interfere with the main text. Finally, the textbook speaks in the omniscient third-person. No visible author confronts the reader; instead, a corporate author speaks from a position of transcendence, a position of knowing from on high. (p. 13)

Wineberg (2001) encouraged history teachers to lead their students into suspending assumptions about what we know and how we think we know it. He writes about a workshop that he taught for teachers during which he had them explore primary sources beyond the textbook. “From correcting and expanding the initial textbook account, we ventured on to question the rarely articulated assumptions that guide the writing of textbooks. Such questions were thrown into relief we placed the textbook alongside Ulrich’s narrative” (p. 14).

Bruce Lesh (2011) asserted, “For a course in history to be a useful and thought-provoking learning experience, it must engage students in the application of evidence to make reasoned arguments about the past…history becomes something students can “do” while learning the required material” (p. 3). He encouraged educators and learners to “see history as a discipline driven by questions, understand the nature of historical evidence and be able to analyze a variety of sources and apply them to historical questions” and to
“develop and defend evidence-based interpretations of the past” (p. 4). This is a strong framework from which to create a system based on proficiencies yet the shift is complicated and teachers will need practice, guides, and models. The call for Vermont social studies teachers to create cognitive progressions in relation to these targets challenges the traditional method of teaching through telling. This creates a need for teachers to see each other’s work and engage in dialogue with their peers around development of proficiencies, targets, and scales. The AOE intended for this mandate to be one that schools learn into together:

We also realize…that we have a lot to learn from each other, statewide, as colleagues…the AOE will link, through the PBGR pages of the Agency website, to PBGR and PBL resources that have been developed by Vermont schools…our real work is less about developing and adopting local-level PBGRs, and more about defining and supporting the shift in teaching and assessment that effective PBL models will require. (2014, p. 4)

The Need to Redesign Social Studies Teaching

McLaughlin and Talbert (2001), in their study of high school teachers and their work, articulated the tension between policy and practice and how it can potentially be a barrier to innovation related to student learning. “Change at the top that is based on considerations of policy coherence and fit with a culture of teacher learning and inquiry seems essential to teachers’ effective use of new resources like subject area networks. More likely than not, this fit is missing” (p. 137). One problem they point out is, “Teachers’ efforts to rethink instruction in ways consistent with advances in cognitive
science have been trumped by high-stakes accountability systems rooted in norm-referenced tests” (p. 137). They caution that this leads to a breakdown in potential which can easily apply to Act 77 and the EQS if teachers are not provided with “policy and leadership…[that] builds around the core of teaching and learning and focuses on the quality of teachers’ professional relationships” (p. 137). They call for policy and leadership that “center on teaching practice—decisions about the connections within the classroom triangle of content-students-teacher—and around teacher learning opportunities and careers” (p. 138).

In Reflective Practice to Improve Schools (2001), York-Barr, Sommers, Ghere, and Montie ask, “What learning designs promote [teacher] reflection?” They found that “to learn about instructional strategies and classroom management, teachers viewed collaborating with peers as most beneficial. To learn more about a content or discipline area, individual inquiry and access to outside expertise…was viewed as most helpful” (p. 39). Also found was that “promoting schoolwide reflection and learning requires an organizational perspective on facilitating change for improvement…facilitators…emphasize that adopting change is a learning process” (p. 127). The authors also referenced the Concerns Based Adoption Model conceived by Hord et al. (1987): “The model indicates that individuals are concerned first about how the change will affect them personally…finally, concerns shift to considering the impact of the change” (p. 127). This includes asking, “How can I improve implementation? I wonder how others are working with this new program and what they are learning?” This study seeks to address that and make the findings accessible for history educators in Vermont.
The AOE offered year-long trainings to every school district in Vermont during the 2014-2015 school year with two meeting locations: one in southern Vermont and one in northern Vermont. They hired the Great Schools Partnership which is located in Maine and has led many of the efforts in schools to create PBL systems based on PBGRs. The Great Schools Partnership site is an extensive resource from rationale for PBL and PBGRs to sample performance indicators and many other how-to essays, webinars, and graphic organizers on understanding PBL and PBGR implementation. Their trainings had limits, however. Only small teams of people could go from each district. The trainings in no way touched every educator. In addition, even the people that did get the training may have been exposed to the concepts and directions but did not get a chance to practice how to implement these concepts. More work needs to be done to share how teachers, specifically history teachers, are implementing PBL and PBGRs. Professional development surrounding PBL is all about “how to” right now and teachers are not hearing from other teachers how to actually shift their thinking to new practices. This study will use qualitative methods to interview teachers about what is working and what challenges they are experiencing with implementation of PBL.

In sum, research suggests that organizing PBL requires new steps for teachers as they plan their curriculum, instruction, and assessment. Because Vermont SUs must develop standards or proficiencies and learning targets at a variety of levels, classroom teachers need to generate and link their classroom level learning targets and learning scales to the larger district-wide proficiencies. The scales are what the teachers create to describe to the learner what progress, and evidence of learning, toward and beyond each
of the targets looks like. All of these proficiencies, related targets and scales, or progressions need to be articulated clearly to students. This means teachers and schools need agreed-upon performance indicators with learning progressions for each standard and a set of strategies for generating targets and scales at the classroom level. Each class curriculum design must also be very clear to students which proficiencies they are being asked to practice, learn, grow, and make progress toward.

Teachers need to define clear learning targets, proficiencies, performance indicators, and learning progressions/learning scales for each, so that students can use them to assess themselves and teachers can use them to guide students. They will use them to guide students in their instruction and feedback and also to help them understand what constitutes evidence of growth and progress toward particular class and district proficiencies. According to Mark Kostin from the Great Schools Partnership, the organization hired to train Vermont educators and administrators on PBL and PBGRs, “When it comes to providing feedback for students because that’s where this whole system is going to either succeed or fail depending on the assessment literacy of teachers” (personal communication, May, 2015). There needs to be a great emphasis placed on supporting teacher learning and assessment literacy in order for PBL to move beyond being a policy mandate to implementation.

Chapter Summary

There is a lack of research focused on not only how high schools are designing the opportunities that will allow students to become proficient, but also on how students will demonstrate proficiency, and how schools will monitor and report on those
proficiencies. There is also a lack of research exploring exactly how teachers are implementing PBL in their classrooms through shifts in curriculum, instruction, and assessment. The findings in this study can be taken into consideration as a variety of stakeholders work to develop policy and practice to support a fully implemented proficiency based system throughout Vermont by 2020. Although legislation mandates that all students in grades 7-12 will be in a proficiency-based system by 2020, as this literature review has suggested, scant research exists on how teachers are responding to the mandate. Research into these considerable shifts in teacher practice has the potential to inform classroom, school and statewide change as the components of Act 77 and the EQS are implemented over the next few years. This study will collect and examine the processes, ideas, and products social studies teachers have used, created, and found useful as a result of their implementation of PBL. In addition, this study will seek to identify the supports needed by administrators, curriculum coordinators, and AOE stakeholders during this implementation process.
CHAPTER THREE

METHODOLOGY

This chapter provides an overview of the research design utilized in the study. Given the exploratory nature of the research questions, this study used a naturalistic inquiry design strategy (Patton, 2002). “Qualitative inquiry is particularly oriented toward exploration, discovery, and inductive logic” (p. 39). Qualitative research assumes the study “has no predetermined course established by and for the researcher” and “observations take place in real-world settings and people are interviewed with open-ended questions in places and under conditions that are comfortable for and familiar to them” (p. 39). This approach to inquiry guided this study. Data collection included observing teachers as they worked with their students, interviewing them on their own and with their colleagues, and conducting document collection and review related their implementation of PBL. The interview questions were designed in advance, yet remained flexible to allow for investigation and probing questions throughout the interview. Observations were real time while teachers were interacting with students in learning environments.

Case Study Design

Case study design, specifically, was selected to frame the research design given that the research questions seek to understand three individual cases of high school social studies teachers’ implementation of PBL in their classrooms. Case study design allows the researcher to explore in-depth several cases, or units, of analysis. The specific approach to case study utilized in this study was instrumental case study (Stake, 1995);
the teachers selected were chosen not so the researcher could examine the teachers themselves but because they were “instrumental” (p.3) in understanding the implementation of proficiency-based learning. Because there were three teachers chosen to explore this phenomenon the design this is also a collective case study.

Case study was an appropriate method for this study because the findings pursued were generated from the teachers’ perceptions of how they have transitioned their teaching to PBL. The cases for study were three teachers who were considered information rich because they were identified by criteria related to the study and illuminated findings related to the implementation of proficiency-based learning. The phenomenon of interest in this study was how teachers perceive how they design curriculum, instruction, and assessment in a PBL setting.

**Purposeful Sampling and Site Selection**

“While one cannot generalize from single cases or very small samples, one can learn from them—and learn a great deal, often opening up new territory for further research” (Patton, 2002, p. 46). The research design was geared toward attaining a deep understanding of the implementation of PBL which is why the sample was limited to three teachers. This makes the sample size small and not representative; however, it will provide a deeper understanding of the process of PBL within the implementation. The sampling strategy for this research project was purposeful intensity sampling. “An intensity sample consists of information-rich cases that manifest the phenomenon of interest intensely” (Patton, 2002, p. 234). The researcher consulted a variety of educational leaders in Vermont to identify the participants of the study. She consulted
three leaders at the AOE who are involved with assisting in the implementation of PBL, the Associate Director from Great Schools Partnership which is the organization hired by the AOE to train teachers and administrators in the transition to PBL, a consultant who leads PBL work in Vermont schools, and a professor who is researching the transition to PBL in Vermont. The question they were asked was, “What high school social studies teachers or what high schools are effectively implementing proficiency based learning in their classrooms?” and the answers given were used as a starting point to identify participants to study. If a school was identified as being skilled at, or significantly involved in, implementing PBL, the researcher asked leaders at the school to identify social studies teachers who were actively implementing PBL. Additionally, state leaders, educators, and others involved in PBL who work in Vermont were also asked to identify specific high school social studies teachers that were embracing and actively working on the implementation of PBL and PBGRS. Through this two-pronged approach three teachers were identified. “Qualitative inquiry typically focuses on relatively small samples...selected purposefully to permit inquiry into and understanding of phenomenon in depth.” The researcher will use “this approach for locating information-rich key informants or critical cases” through asking “well-situated people” (Patton, 2002, p. 237). “Purposeful sampling focuses on selecting information-rich cases whose study will illuminate the questions under study” (p. 230).

The three teachers were selected from different high schools. Selecting teachers from different settings provided a way to potentially tease out what was common to the teachers and not just the setting in which they are practicing and implementing PBL. As
Merriam (2016) suggested, “Including a variety of participants and/or sites in your study will enable more readers to apply your findings to their situation” (p. 497). The participants have all been teaching for at least 15 years and have reputations as strong teachers. In fact, almost every time I observed or visited, the teachers were hosting student teachers, interns from pre-service teaching programs, or other colleagues from their own schools who were observing them or meeting with them in order to improve their own practices. Two of the teachers are female and one is male. Two of the three lead professional development in their schools related to PBL.

**Data Collection Techniques**

*Open-ended interview design.* A general interview guide approach was used to shape the interview questions to as to facilitate and an informal conversational interview approach (Patton, 2002). The rationale for this is that the guide will serve the purpose of ensuring the interviewee covers the interview questions that address the research questions but does so in an informal conversation approach to allow “flexibility to pursue information in whatever direction appears appropriate” (p. 342) to allow for flexibility and the generation of knowledge. Notes were taken during each interview and they were tape recorded and transcribed. See Appendix B for the interview guide interview protocol used with participants.

Patton (2002) suggested that analysis happens in unique ways for each researcher and that, if given the chance to tell the story, data will tell a story. As Patton suggested, notes during the interview can be extremely helpful (p. 383). Patton explained that the use of the tape recorder frees the researcher up from having to attend to every detail of
the interviews and to take, “strategic and focused notes” (p. 383). The researcher will take notes like this during the interview using an interview form in Appendix C that helps focus the notes on the overarching themes in the research questions of instruction, curriculum, and assessment. In addition, below the form there will be spaces to write ideas for future questions and ideas for documents to collect related to what the interviewees are saying. In addition, the researcher will write up field notes and transcribe each interview as soon as possible after the interview takes place.

Interviews took place between August 2015 and October 2016. Two of the teachers were interviewed two times and one teacher was interviewed three times. Teachers were interviewed in their classrooms and one teacher was interviewed in her home. The goal was originally to interview all three teachers three times but scheduling proved difficult and the two interviews provided sufficient data; there was not a need for the third. The data collected during the first interview were analyzed and subsequent follow up questions were created to form the tailored questions after an analysis of the initial interview both for clarifying each individual teacher’s approach to PBL and to check themes across the three interviews. The follow up interviews served to help triangulate early emerging themes and answer questions that came up in the first round of interview transcriptions and analyses.

In addition to the three teachers selected for case study, other interviews with key informants were conducted. Key informants are individuals knowledgeable about the topic who could aid in the researcher’s understanding of the topic but who were not directly involved as the key participants in this case social studies teachers (Patton,
Key informants interviewed during the study included people who have been hired by the Vermont AOE and individual schools to support the implementation of PBL. Detailed notes and in some cases audio-taped transcriptions were taken of these interviews. The data collected from these informant interviews assisted in context building, verification, and triangulation of information collected from study participants.

**Observations.** “Observations work the researcher toward greater understanding of the case” (Stake, 1995, p. 60). In addition to interviews, the researcher observed teachers in action in class working with students, in meetings with one another or students as they plan, or in other settings in which they are practicing or reflecting on proficiency based learning. The observations in class or in meetings may reveal explicitly or implicitly potential shifts related to PBL. The main product for analysis that will be generated from the observations will be thick description of the settings and of the participants’ actions, words, and materials. The thick description generated from observations will serve to triangulate interviews and documents (Patton, 2002).

The researcher used two field guide forms, to guide field notes taken during observations. The forms listed in Appendices D and E focused the observations around the research questions and reminded the researcher of the categories to be observed: Curriculum, Instruction, and Assessment. Stake (1995) advised, “What one does in the field, from gaining access to triangulating data, needs to be guided by the research questions. Sometimes it is useful to make a data-gathering form that not only has space for information to be recorded but that draws attention to the issues of immediate concern” (p. 50). The first form was used to help organize note-taking and to keep the
focus of the data collection related to each of the categories inherent in research questions. The second form, Appendix E, was used to help guide “highly descriptive” (Merriam, 2016, p. 284) field note taking. Appendix E prompted the researcher to include the “six elements likely to be present in any setting” as described by Merriam. These six elements were listed at the top of the observation form and helped the researcher focus on those items in case they could have informed note taking. The observation forms aided the observation; however, it remained true during each observation that “where to focus or stop action cannot be determined ahead of time. The focus must be allowed to emerge and in fact may change over the course of the study” (pp. 265-266). The charts reminded the researcher what to pay attention to and to also left room for the unexpected.

Below the table in the observation guide (Appendix D) there will be room for the researcher to write additional questions and ideas for document requests. In addition to the chart the researcher used the field notebook to write thick description and other notes during the observation.

The role of the researcher in observations was as described by Merriam (2016) as, “Observer as Participant” (p. 217). The researcher sought to be as unobtrusive as possible in the setting with the teachers and the students. In each case the teacher introduced the researcher and gave a brief description about why the visit occurred. Depending on the activity and direction from the teachers, the researcher was more or less of a participant. The goal was for the teacher and students to be comfortable and for the researcher to see what, as best she could, what would normally happen in the classroom.
After each observation the researcher recorded field notes as soon as possible to try to leave as little time as possible between observing and recording. In addition, the researcher strove to write notes that followed Merriam’s (2016) instructions that notes should be taken in formats conducive to retrieving information easily. The field notes were also organized by the same three categories to match the categories in the field guide forms.

**Document review.** Documents were collected in order to triangulate interviews and observations (Patton, 2002). A key aspect of implementing proficiency-based learning is creating learning targets and scales, or progressions, to use with learners. The teachers had materials that they have been using with their students and shared their forms easily and freely. Most of the forms were shared digitally while some were accessed on the teachers’ school or class websites. The materials were abundant in some cases, so as not to collect too much information, the researcher will focus collection on three types of documents: teacher learning targets and scales, student work, and teacher feedback or dialogue with student related to the learning scales. The targets and scales are central to a PBL (Great Schools Partnership, 2016; Marzano, 2010; Moss & Brookhart, 2007) classroom as they are the documents used to design curriculum, instruction and assessment.

These two documents, learning targets and learning scales, illustrate one of the cornerstones of PBL. In a PBL system, proficiencies are articulated through targets and scales and through dialogue with learners about their work in relation to those scales. These documents will serve to triangulate information teachers share in their interviews.
about instruction, assessment, and curriculum in a PBL setting. The documents provided evidence of what teachers give to students so the researcher could clarify what teachers meant when they described their work in their interviews. Other documents were collected and explored and served as verification and substantiation for the targets and scales and the student work with teacher feedback, which was collected. Document review strengthened the findings by creating another source of data with which to triangulate the interview transcriptions and observation notes.

**Field notebook documentation.** All data was transcribed by the researcher and organized into what Merriam and Tisdell (2016) called the “case record” (p. 428). A field notebook was utilized to organize all interview transcripts, documents, and observation notes. Stake (1995) wrote, “There is no particular moment when data gathering begins” (p.49). This means that when a researcher begins to consider the topic of study there is already thinking going on about the topic. Stake was right. At some point the notebook began to grow even before the researcher had scheduled the first interview. Collections of information related to the topic began as the researcher started to read about PBL and talked to colleagues about the topic. The organized field notebook was essential to collecting all of the information related to the study and keeping it organized throughout the study.

The field notebook also included field notes and follow up notes from interviews and observations which were labeled by case name, date, and any other important information to determine what was happening at the time of the field work. All documents shared with participants was also dated and stored with the field work notes
from that day. All interviews were recorded, transcribed and stored in the researcher’s Google Drive. Everything was dated and identified clearly with pseudonyms for confidentiality yet was a good system that made clear where data was collected. In addition to the field notebook, the researcher kept a digital journal solely dedicated to reflexive and interpretative notes, which was labeled as clearly.

Below is an overview of the data that was collected during the study.

Table 1

Data Collection Overview Table

<table>
<thead>
<tr>
<th>Name</th>
<th>Observations</th>
<th>Interviews</th>
<th>Documents</th>
</tr>
</thead>
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<td>Learning Targets and Scales,</td>
</tr>
<tr>
<td>Addy (F)</td>
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<td>2</td>
<td>Course Overview, Assignments, Student Work,</td>
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<td>Teacher #2</td>
<td></td>
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</tr>
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<td>Walter (M)</td>
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<td>3</td>
<td>Student Work, Curriculum Overview and Units, Assignments, Student Work</td>
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<td>Teacher #3</td>
<td></td>
<td></td>
<td>Learning Targets and Scales,</td>
</tr>
<tr>
<td>Katrina (F)</td>
<td>3</td>
<td>2</td>
<td>Course overview,</td>
</tr>
</tbody>
</table>

The Reflexive Journal

The emerging themes and stories were captured in the researcher’s field notes and in a separate digital research journal. Entries in the field notes were separated into three general categories: Descriptive, Interpretive, and Reflexive. Entries in the digital journal were labeled in the same way. The reason for the separation was to use the computer to
help record emerging ideas, links to concept maps, researcher-generated documents related to findings, themes, findings, questions, and further descriptive notes.

Table 2

*Category Labels Defined*

<table>
<thead>
<tr>
<th>Category</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Descriptive</td>
<td>This section was for thick description during interviews, observations, document collection, and any other fieldwork.</td>
</tr>
<tr>
<td>Interpretive</td>
<td>This section was for ongoing researcher analysis. For example, emerging themes or ideas for codes or classification.</td>
</tr>
<tr>
<td>Reflexive</td>
<td>This section was for the researcher to reflect on subjective thoughts, the way the information impacted the researcher’s own practice as a social studies teacher, or other reflections related to maintaining or examining the “balance [between] understanding and depicting the world authentically and being self analytical, politically aware, and reflexive in consciousness” Anything labeled with a ‘R’ in the fieldwork notes was representative of the researcher considering “What I know and how I know it”? (Patton, 64)</td>
</tr>
</tbody>
</table>

**Quality Criteria and Data Analysis**

“Most researchers find they do their best work by being thoroughly prepared to concentrate on a few things, yet ready for unanticipated happenings that reveal the nature of the case” (Stake, p. 55). Data analysis in qualitative research begins the moment the researcher starts to consider the questions under study. Data collection and data analysis are considered simultaneous process in qualitative research, especially in case study when the main instrument of analysis is the researcher (Merriam, 2016; Patton, 2002; Stake, 1995). This analysis was documented in field notes and in the research journal throughout the study. The researcher sought to capture and record, “hunches, working hypotheses, and educated guesses” (Merriam, 2016, p. 359) from the outset of the research.
“Case analysis involves organizing the data by specific cases for in-depth study and comparison…the case study approach constitutes a specific way of collecting, organizing, and analyzing data” (Patton, 2002, p. 447).

Throughout the study the case records were kept in three separate sections. Each teacher was his or her own case. The first step in data analysis was to analyze each case separately. The interviewer transcribed each interview to make sure there were no parts of the transcription that got lost in translation from audio to text. This was very helpful to note when the participants were looking through something and the researcher could note that in the transcription or if a participant was laughing or pausing for a long period of time that was noted in the transcription as well.

To begin the analysis of each case the interview transcriptions were read and coded for themes. The researcher followed Merriam and Tisdell’s advice (2016) to begin a “conversation” (p. 375) with the data by reading it and using the process of open coding to identify “data that strike you as interesting, potentially relevant, or important to your study” (p. 375). Then the transcriptions were reread and themes were modified and sometimes collapsed. Raw data was placed in each of the categories to make sure the theme had significant data to reflect the themes. Next the documents were reviewed and coded for themes. The themes from the documents were then compared and contrasted to the themes from the interview transcriptions. If themes from the document review negated or contradicted themes from the transcriptions, the researcher either revised them based on new information or used the document review to triangulate previously identified themes. Specifically, data triangulation included several data sources including
open-ended interviews, school and classroom observations, document review, and a reflective journal. In addition to all of the observation notes, transcriptions and documents, the reflexive journal also served to document the triangulation of data, verifying, member checking, and searching for researcher bias and assumption. I did my “very best with my full intellect to fairly represent the data and communicate what the data reveal given the purpose of the study” (Patton, p. 433).

This process of analyzing the individual case study was repeated three times. For the second and third case records, the researcher added a star when she began to see themes that might be emerging “cross case”. Those stars were the starting point for the cross case analysis. For the cross case analysis, the themes from each case were compared and contrasted using a table format. When questions arose about whether a theme was valid or not, the researcher used document review and observation notes to help answer questions. Stake (1995) asserted, “We need certain protocols or procedures which researchers and readers alike come to expect, efforts that go beyond simple repetition of data gathering to deliberative effort to find the validity of data observed” (p. 109). The trustworthiness of the findings were strengthened by triangulating data during the data collection and analysis process across different data points including interviews, observations, and document review.

The second step was to compare and contrast those findings across each of the three cases. The themes reported in this section reflect the themes that emerged from the cross-case analysis that compared and contrasted each of the individual case studies.
The final themes reported in this study took many forms on their way to their final state. There was so much rich, varied, new, and exciting information to report that the patterning and linking of themes took shape in several iterations. To identify the final themes, the researcher reworked them in a variety of ways until the themes and subthemes represented were as inclusive of the findings as possible. The final themes and subthemes are presented the best way the researcher believed the data would be well represented.

This study explored the larger question of, “What can be learned from three teachers who have implemented PBL that may be of use to other teachers who seek to understand and implement PBL?” The specific questions were related to perceived instructional, curricular, and assessment shifts that accompany or comprise of the implementation of PBL.

Triangulation provided a way to increase the quality and credibility of the study (Patton, 2002). Stake’s (1995) table relating data situations to the level of need for triangulation was utilized to guide the triangulation process. The table ranges from “Uncontestable description” which warrants “little effort toward confirmation” and adds increasing need for confirmation with each entry. This table teaches the researcher that “Key interpretations” and “Data critical to assertion” require “extra effort toward confirmation” (p. 112).

Member checking was also used as a strategy to help verify the trustworthiness of the data (Patton, 2002). Member checking provided a way to determine if the researcher is accurately depicting participants’ intended responses (Patton, 2002). The researcher
used the first round of interviews to generate questions for the second round of interviews and third in one case. The themes that were generated in the first round of interviews were used to inform some of the questions for further exploration in the second round and to verify if the researcher’s analysis of the interview was accurate. The second round of interviews held after the majority of the first round of interviews, document review, and observations were analyzed which was a very successful strategy because it allowed for lingering questions to be addressed. It also allowed the researcher to “test out” themes and findings with the participants in person. The researcher had the opportunity to ask the participants if the emergent findings along the way fit with the participants’ thinking and original intent of responses. In addition to the final round of interviews, the researcher followed up with one more round of e-mail questions to confirm and clarify. All three participants confirmed and clarified in their e-mail responses. In some cases, the participants sent information to follow up their interviews independently of the researcher’s prompting. The back and forth and free flowing nature of the information left the researcher feeling like the participant’s perspectives’ were represented well. Stake (1995) described the spirit the researcher’s approach tried to foster to member checking.

Actors play a major role directing as well as acting in case study. Although it is they who: Are studied, they regularly provide critical observations and interpretations, sometimes making suggestions as to sources of data. They also help triangulate the researcher’s observations and interpretations. (p. 115)

Other types of triangulation used throughout this study will include “comparing observations with interviews, checking for the consistency of what people say about the
same thing over time, and checking interviews against program documents and other written evidence that can corroborate what interview respondents report” (Patton, 2010, p. 559). Thick description will also be used throughout the research to describe the words and actions of the participants and the setting when helpful to the study.

There is a possibility that the findings may inform the implementation of PBL in other disciplines. The audience for the findings of this research are administrators responsible for planning and organizing PBL professional learning for teachers, trainers and teachers who carry out PBL professional development, history and social studies teachers, other high school teachers and policy makers who determine time tables and supports for the implementation of PBL.

**Researcher Subjectivity**

Patton (2002) describes the importance of reflexivity in qualitative research and analysis:

The qualitative analyst owns and is reflective about her or his own voice and perspective; a credible voice conveys authenticity and trustworthiness; complete objectivity being impossible and pure subjectivity undermining credibility, the researcher’s focus becomes balance—understanding and depicting the world authentically in all its complexity while being self-analytical, politically aware, and reflexive in consciousness. (p. 41)

The researcher is in her 16th year of teaching social studies with experiences in three American public high schools, two in Vermont and one in New Hampshire. She believes in the deep capacity of all human beings and their desire to improve the world if
given opportunity and respect. She believes that many American public high schools need to improve their engagement with youth, with families, and with communities and that we need to work together to redefine the role of school in American society. She believes the current model reproduces social inequity by dominantly elevating students who come to school equipped with skills, supports, and a strong desire to learn. The system works best for students who see themselves reflected in the curriculum and the power structure. American public high schools need to work for everyone for a variety of reasons, the most important ones being that everyone deserves to graduate from high school with skills, knowledge and dispositions that give them agency, dignity, and an ability to contribute to the world. This leads her to be hopeful, engaged, excited, and optimistic. This, of course, impacts the entire study because the researcher sees hope around most corners and in most ideas. This will lead the researcher to find themes, patterns, and findings in almost any person she interviewed, observed, or in any documents she reviewed. This makes the findings particularly applicable to those searching for new ideas. It makes the examples, categories, charts, and anecdotes most helpful to those who are seeking and who continue to seek ideas about what could be. A key goal in this study for me was to seek to be helpful to those who have a sense of agency and who actively construct meaning and look for answers; it is ultimately those who this study will potentially provide guidance. This study will help those with a strong desire to learn about how social studies teachers are implementing PBL.

The researcher is a high school teacher currently implementing PBL in her own practice. Her subjectivity was part of the study because she has already been engaged in
this work and has many opinions about what is working and what challenges still need to be untangled. With this in mind she worked hard to tease out her thinking about her own practice from her research notes which included her interpretation of what the data was saying. The researcher’s Reflexive Journal kept throughout this study allowed her to continually revisit her own thinking and how it might have impacted the interpretation of the data. The researcher continually asked herself what other ways might the data be interpreted? She worked to identify areas in which she may have made assumptions and leaps that the data did not support. Maintaining detailed notes and records contributed to trustworthiness in this study. In addition, the advisor and committee members cautioned several times along the way to consult the data and to remain close to the inquiry generated by my research questions.

**Limitations of the Study**

The researcher lives and works in northern Vermont. This is a bias because her professional networks are mainly in northern Vermont. All of the teachers referred work in central or northern Vermont. This limits even further the generalizability of an already limited study. However, the focus is not on generalizability; it is on illuminating the phenomenon under study. This research will focus on three high schools and three teachers in Vermont so some of the resources, demographics, and other organizational components may not be recognizable in other schools as resources or challenges. The sample selection of teachers was deliberate in favor of teachers who have been in the field for a long time and because they were identified as “doing this work well”; they have all been teaching for at least 10 years. This means that the findings represent the
thinking of teachers were identified as both effective experienced teachers. In addition, they were selected because they had reputations as teachers who are already doing this work well. So the findings are potentially biased in that the sample only included teachers who were extremely motivated, who already felt agency as evidenced by their embracement of this new way of teaching and did not see PBL as risky or scary. Time was also a limiting factor because the data will be collected over one year and not multi years. Also the data will be collected while implementation was newer so the picture of what teachers are doing will remain in the earlier stages of this work in Vermont

**Chapter Summary**

This chapter provided an overview of the case study design utilized to examine the question of how three social studies teachers are implementing PBL in their classrooms including attention to sampling, credibility, research subjectivity, and the process of data analysis. The next chapter provides an overview of the research findings including themes and subthemes that emerged in the process of data analysis.
CHAPTER FOUR

FINDINGS

Introduction

This chapter provides an overview of the findings that emerged during the case study data analysis of the lived experiences of three high school social studies teachers as they implemented Proficiency-Based Learning (PBL) in their classrooms. The chapter is divided into two sections. The first section provides detailed case overviews of the three participating social studies teachers. The second section discusses each of the major themes and subthemes that emerged from the cross-case analysis of the individual cases. The findings are organized into four major themes: 1) distilling learning goals and outcomes, 2) shifting formative assessment to the center, 3) deep learning, and 4) emerging classroom structures and new teaching roles. Each theme section broadly addresses the theme and then examines the subthemes in detail.

Adelaide (Addy) Croft

Addy Croft teaches social studies at Eastview High School. She is a member of the 9th grade interdisciplinary team and also teaches a course called Age of Legality, which is a course required to graduate. She also teaches psychology or sociology depending on student enrollment. When describing her early teaching career, Addy explained, “I got into teaching really because I wanted to make a difference in the world.” After a moment she added that her passion was helping students understand “the issues in our world and how can you feel empowered to work with others to make a

1 Pseudonyms are used for participant and school names to protect their identities.
difference.” When I later asked Addy if one of her central missions was teaching global citizenship and civic engagement, she wrote,

Probably my biggest goal is to ensure each student knows they have a voice that needs to be heard in order for our world to continue. One’s life and one’s voice intertwine with everyone else’s in a particular time and place and then ripple out to impact the entire world.

Addy’s senior required civics class was observed for an hour during two separate weeks in the fall. Each time, Addy’s students sat around what looked like café tables with four students at each table. The room hummed with noise and conversation whenever Addy prompted students to share at their tables. Students helped her turn on the projector as it was out of her reach and by early September they already had an easy familiarity with one another and with her. Students seemed relaxed and pleased to be there as evidenced by their smiling, easy participation, and remarkably high level of student conversation in comparison to teacher talk.

Addy’s classroom was similarly alive with student voice even though she was interviewed one morning during a study hall that had been moved to her room. As students entered Addy’s room she greeted them with warmth and two questions: “Do you have things you are considering working on and do you need my support?” When students said yes, she jumped right in and facilitated getting them what they needed to start working. Addy has been teaching since 1970 in a variety of settings. Like each of the participants of this study, Addy described feeling awed by what her students can achieve and demonstrated profound respect for them, their ideas, and their growth. In the
final interview, Addy leaned in as she described the projects her students had conducted two springs earlier. “On that performance day the teachers are as anxious as they [the students] are, as excited, because that’s the best thing about teaching is when your students excel, when your students bring a better idea to the world.” She continued, “What you want is for them to get beyond you, like the Vygotsky idea of what is creativity. What you really want is, you want them to add to the discipline in ways you never even thought of. That’s why you come to school.”

Walter Gibson

Walter Gibson teaches social studies at Southview High School. During the first year of this study, Walter’s position was divided evenly between teaching in his classroom and serving as a PBL instructional coach, supporting teachers in their transition to PBG/PBL. During the second year, Walter moved into a team teaching position, collaborating closely with a colleague, to teach on the 9th grade integrated team and on a 10th grade humanities team, as well as to serve as instructional coaches for teachers in the wider school district.

Walter is a boys’ soccer coach. He is kind, easy to interact with, and has a ready greeting for most of the students. As he was observed walking through the halls, he appeared to know most students. Walter explained that his teaching was framed by a larger desire to give students authentic opportunities to study and interact with real world experiences and challenges. This is evident in his 10th grade culminating innovation projects that include, among other things, a public speech related to the students’ work in the large foyer of the school. Walter emphasized that he believed that, “School should be
providing kids with real skills to deal with real problems.” His mission statement rang true several times last year when his students were featured on local area TV news shows explaining their work and how it could potentially make a difference in the world. His students do not only practice for engaging the real world but they also actively engage with it.

**Katrina Arneson**

Katrina Arneson co-teaches 9th grade social studies as part of a humanities team at Northview High School. She also plans and supports the expansion of the advisory program at NHS, which will be instrumental in supporting PBL as the school transitions to PBL over the next four years. She expressed excitement about the curriculum changes taking place. Katrina described Northview High School as “undergoing substantial efforts at changing the way kids experience school.” Katrina began her teaching career at the Parker School with Ted and Nancy Sizer. The Parker School is a member of the Coalition for Essential Schools, which identifies personalization and demonstration of mastery, another way to describe proficiency based learning, as two of its dearly held principles (Coalition of Essential Schools, 2016). PBL and personalization, therefore, played central roles in her formative teaching years.

Katrina and her co-teacher, Molly, were one of the first teams to implement PBL at Northview High School. This fall Molly transitioned into the role of PBL coach for the school and Katrina partnered with a different teacher. Katrina describes the foundation of her practice as the themes of civic engagement, equity, and social justice. This approach to examining the world through a variety of social justice lenses is evidenced by the
social justice projects her 9th graders undertake each year at Northview High School. For example, one student began a public petition to install lights on the Northview bike path to make the path safer for all. Katrina asserted, “All young people deserve access to rigorous learning opportunities and positive relationships with their peers and teachers and we owe it to all students to unveil the myth of the meritocracy.” Creating equity in the classroom, she reflected, is what drives her as a teacher and the reason she comes to school every day.

**Themes Resulting from Cross-Case Analysis**

Although the research questions guiding this study outline three distinct concepts—curriculum, instruction, and assessment—these concepts intersect with one another in many ways. Doll (1993) illustrated this in his description of the contrast between modern and post-modern perspectives on curriculum:

In the modernist paradigm, the concept of curriculum as autonomous but interconnected units is ubiquitous. From first grade on, curriculum is considered in terms of units arranged in linear order. Learning, itself, is defined in terms of the number of units covered, mastered, accumulated. Such a view does not facilitate considering curriculum as a transformative process, one composed of complex and spontaneous interactions.

Doll conceptualized curriculum as, “more then a series of contingent units—to see it as a mixed and multivariate integration of rich, open-ended experiences; as a complex mosaic ever shifting its center of attraction as we shift ours” (p. 38).
Indeed, this study revealed that the interplay of assessment, curriculum, and instruction is central to instruction and learning in a PBL classroom. Assessment and instruction have an overlapping and non-linear relationship in learning processes. The themes and subthemes explored in this chapter cross the traditional boundaries between curriculum, instruction, and assessment and instead viewed these as interrelated components of the learning process. This interplay emerged throughout the four key themes that emerged—distilling learning goals and outcomes, shifting formative assessment to the center, deep learning, and emerging structures and new roles—which will be outlined in the following sections.

**Distilling Learning Goals and Outcomes**

The challenge of distilling learning goals and outcomes into a clear curriculum is a theme that ran through the observations, interviews, student work, and documents examined in this research. Distilling refers to the close studying required by teachers of what they teach in order to identify the skills and concepts they want students to learn. In a PBL system, these identified skills are used to develop the proficiencies, also referred to in this study as standards or competencies, and the concepts are the context in which the proficiencies are taught. In some cases the proficiencies are articulated at the classroom level so that the teacher uses the word proficiency interchangeably with learning target. The learning target is what students see and are working toward while the word proficiency is used interchangeably; it is also used at the SU level to represent skills that are more general. For example, an SU level graduation proficiency might be “effective communication” and on the classroom level that would be articulated more clearly to
describe exactly what it was students are going to do to show their communication skills: is it writing an essay? It is giving an oral presentation? The word proficiency was used during this study at a variety of levels. Context and explanation should clarify the level of use in this study.

The process of identifying what matters most in learning is complex. Even veteran teachers may struggle to distill what it is students should know, be able to do, and understand by the end of a unit of study, despite having national standards to inform this task. Teachers face difficult choices about outcomes and then must design learning around those outcomes. This requires discipline and courage, as ultimately the year ends, the unit of study ends, and students cannot learn everything. Teachers in this study used collaborative and close examination to identify the content, cognitive skills, and affective skills around which they wanted to design learning. It became clear almost immediately that each of the participants in this study was courageous about making decisions about what to teach. The participants in this study provided significant evidence of what Moss and Brookhart (2012) called “mining the instruction objective.” Through mining, or distilling, the most essential elements are exposed. For example, Addy has determined in her class that students will learn concepts related to participating in democratic processes, understanding human rights, understanding one’s own rights and responsibilities as global and U.S. citizens, considering one’s own future, one’s own voice, and one’s own place in the world, among others. The skills emphasized in the class include collaborative dialogue, writing, reading, and analyzing. She has distilled these elements to build the curriculum around these concepts and skills.
The theme of *distilling learning goals and outcomes* comprised three subthemes that emerged through analysis of the interviews, documents, and observations that described how the interplay of curriculum, instruction, and assessment are built in a PBL system. The first subtheme is that *it takes a long time* to make the shift to PBL. The second subtheme highlights how the study participants needed to *narrow, specify, and clarify* the content and skills within the curriculum. While the third subtheme suggests that serving students well requires the *unmasking of skills*.

**Implementing PBL takes a long time.** PBL implementation occurs at a rate that mirrors teachers’ deepening understanding of the implications of PBL, in that it takes a substantial time to shift to this new way of teaching. The Vermont AOE, in its Introduction to the EQS (2014), recognized the significance and complexity of PBL implementation with its statement that, “This shift will be phased in over several years, with technical and financial assistance from the AOE. Policy and practice at the local level will have to adjust” (p. 2). The participants in this study supported the assertion that PBL requires a different approach to learning than might be common in many schools and that this shift will require years for teachers and schools to adjust. Walter, for example, discussed the significance and complexity of the PBL implementation process. He said, “People think, oh, I’ll just shift how I grade” but it goes well beyond shifting grading. Walter explained that even teachers who have been teaching for a long time may need time to work on this shift. “It’s hard for any of us to think of this is a process; it’s like I’ve been teaching for 10 years, of course I can make this shift and that’s not [it] at all.” He elaborated, “We were trying to explain to our principal the other day, it’s 3, 5, 7...
[years to make the shift].” Walter continued to explain how important it is to understand that the shift might seem simple, but that it is not.

Those people who’ve been doing it for years, they get to a point where, yes that’s what makes sense [to implement PBL practices] but they understand how they got there and how their practices got there. But if you don’t have the practices and the instruction and the set up in class done, to jump there right away would be a mistake. They can’t just jump to the end, there are steps to take, people need to come to some realizations and eventually we will get there.

One of the reasons Walter can explain this process so well is because he and his co-teacher recently experienced it. He illustrated this in detail as he shared his evolving understanding of how to use grading categories in a proficiency-based system. He described how they played with new categories and finally decided on habits of work, summative, and formative as the three main categories and how the percentage that each one counted changed as their thinking about grading changed. Walter said that they needed to be able to learn their way through this process. He said, “If you have just started us by saying just go with what you came to at the end it would have been a disaster…and the reason we felt so good about this was because we were so intentional about [it].”

This presents a challenge for this change initiative because changing a system while at the same time allowing people time to process and shift their implementation based on their understanding requires a high level of tolerance for ambiguity for
educators, students and community members. It also requires ongoing training, support and high quality communication.

Walter’s description of the length of the shift is echoed in the interviews and learning documents collected during this study. Every participant made changes to their learning targets and scales during the course of this study. Addy’s team shifted the number of proficiencies, also known as learning targets, that they decided to use in a year from 30 to 18. The reduced number emerged from implementing the targets and scales they thought they could design learning around using the original number and then reflecting and adjusting. In our first interview Addy was showing me her gradebook in JumpRope, a digital tool for tracking proficiency based assessment. As she scrolled through grades and the proficiencies on which they were based, she said, “This one I did only one on, this one I don’t think I did any, or two, but I can just take out any I didn’t teach.” She continued, “A reasonable number in a year has to be under 20 and that has to include your skills, your writing, the things that everybody is teaching, from my perspective anyway.” Addy expressed an understanding about a number of proficiencies that are reasonable to address in a year. Addy illustrated that for a target to be taught, it needed to be practiced and assessed, which are two cornerstone ideas of PBL. The participants in this study underscored that it takes practice with PBL to deepen one’s understanding of it; once teachers deepen their understanding based on practice and reflection they will make increasingly informed instructional, curricular and assessment shifts.
Implementation of PBL requires decision-making, trial and error, reflection, and potential pivots in application based on new understandings, all of which take time. Another example of why PBL implementation takes time is that understanding the rationale behind PBL in part is related to new findings in cognitive science that have emerged over the last two decades. Understanding that research takes time and consideration before it can be acted upon.

Katrina explained how her understanding of cognitive science has deepened and grown over the last few years.

I think three years ago I went to Chris Jernstedt’s day-long [conference] and that blew my mind and so we started after that…we started really intentionally teaching it [how people learn] so you figure any practice to really integrate it into not just what you’re teaching but how you teach and the things you say those one liners that you always say. I feel like that took a couple of years.

She described another area in which her thinking about application of PBL was a work-in-progress and required trial and error; and then, with reflection, resulted in adjusting initial implementation.

Last year we did a lot of reporting to students…we tried the whole sticker chart thing, you get a sticker for proficiency and then we did a lot of reporting growth so we would create a chart that showed this is how many kids got it on the first try and by the second try look how many more kids had done it, we were trying to use that as sort of motivating but we didn't do any of that this year.

The sticker chart approach was not a system that worked for their team. They
Another area that changed for Katrina and her co-teacher after initial implementation and reflection was grading. They met over the summer before this study began, between their first and second year of PBL, to figure out shifts in their approach to grading. She described the meeting: “We put a whole chunk of our time last summer on how do we make peace with this grades thing because we were ready to do away with grades.”

Walter indicated several times throughout his interviews that he and his colleagues have been working on developing targets and scales for more than five years. Despite doing this work for six years, he and his colleague still reworked their targets and scales over the last year. When he described how SHS came up with their “big blue head as we so affectionately refer to it,” which is the graphic they use to illustrate the learning process that informs instruction, assessment, and curriculum at the school, it is clear that the process required time, decision making, and complex thinking and talking. They distilled big ideas about learning and teaching to create a new model of learning. He explained how they came up with the new model of learning. They worked, to figure out is … what is thinking? That was three or four years ago when we did this. We had one or two representatives from each core and each discipline and they started with [the question] what do you want kids to do at the end of your class and they each had 30; they each had thinking critically, problem solve, so then we put them all together and sorted them and put them into categories. [We asked] what does it mean to think about information? And what does it mean to output.
The conversation is representative of the philosophical and pedagogical assumptions that need to be unearthed during the shift to PBL which is why implementation takes a while to do well.

The idea that the shift to PBL will take a long time can also be seen in the school’s public language. The school captures its learning digitally; teachers, students, parents and the public have access to most of what is developed. On its website Southview has many resources people can access about standards based grading, standards based learning, and standards based reporting. On the site the products of these complex learning conversations are evidenced. There is one section focused on Proficiency Based Graduation Requirements (PBGRs), or the SU standards. On the school website the school addresses the complexity by explaining that the goal is for all students to graduate using PBGRs instead of Carnegie Units. The school also acknowledges that the implementation will be complex but that they believe the results will be worth the effort of the implementation.

The school names the complexity required in this work for all stakeholders to see. This is evidence that PBL implementation will take time. The process includes learning about and then using PBL theories and practices.

Teachers reported a high degree of shifting still needs to occur as implementation continues, particularly at a systemic level. Walter explained that, “Yes, teachers are all designing their own targets and scales but at some point we are going to have to figure out what this looks like as a system.” At Walter’s high school he explained that they were in the process of working on this. “We are really using JumpRope to figure out which
grade standards get used and this one [standard] is [demonstrated] way too much or maybe it is too broad or nobody tagged this one, [we will ask] why aren’t we using it?”

Addy reflected that her school was in a similar place in terms of laying out a system-wide overview of PBL. “We’re in the process of determining what everybody already is teaching for the C3 and for our Eastview competencies.” She continued to identify questions that need to be addressed as implementation occurs reflecting the complexity of this process and also the time required to answer questions well. She wondered, “Who is going to put together that huge map [of proficiencies] and are they going to use our social studies model for global citizenship rubric or are we going to have to change that because right now we don’t have the endgame defined.”

PBL requires educators to consider what they believe about learning and how they enact learning in the classroom. It requires teachers to consider exactly what they are teaching and why they are teaching it and to articulate their outcomes and learning progressions clearly which inevitably will take time.

**Narrow, specify, and clarify.** The teachers in this study emphasized that, to develop a PBL classroom, teachers need to narrow down, specify and clearly articulate learning targets, proficiencies, and scales. This requires difficult decision-making because curriculum needs to be narrowed and focused in order to develop clear proficiencies. To narrow means to choose some things and not others; this can prove difficult. To identify proficiencies teachers need to specify what matters most for students to learn and then design learning progressions that articulate clearly where students are at each level. This
requires narrowing down and making specific what it is teachers want students to learn and what they will assess.

The specificity and clarifying required in the thinking needed to design clear scales, and clear instruction linked to the scales was evident in the teacher interviews, documents, and observations. When Walter described their work on a graphic representation learning target, he described how specific they needed to be about what the “four looked like” in order to clarify the expectation to students:

Generally the point where people get stuck is with where the four should be. The two and the three [levels on the scale] is a little easier to grasp below than above, or to articulate it but we had a graphic representation target that we really struggled with getting at. We could, in our minds, we could kind of see it but we couldn’t get that across so at first we practiced it during our unit, our first big unit…and we got to the summative and we were like we can’t add it because nobody’s even coming close to the three, the class was at an average of about a two so we were like we’ve done a bad job of getting them where we want them. So this year that’s the one in particular where we spent a lot of time thinking about and finally that clicked in and so we created that four for that one [refers to the document with the learning target and scale of graphic representation that has a hyperlink to an example of what a four would look like] and that’s what we decided to do for all of them.

He pointed out the necessity of the complex learning conversations required to facilitate this clarification. Walter said when they were teaching the learning target that
“forced us to explain the difference [between the levels on the scale], which was hard but it was important because we were like if we can’t explain the difference then they sure as hell aren’t going to get the difference.”

Katrina also described the deliberate use of clarifying as a necessary part of the development and decision-making required to arrive at the four learning targets used by the 9th grade humanities team. She noted,

So we talked, we went back and forth and about ok, so we do a ton of anti-bias work and we call it our social justice curriculum but it really is anti-bias and seeing the world through a race lens, a gender lens, a sexual orientation lens and really questioning and noticing stereotypes that we are making and we do a ton of stuff around that. It is hugely important to our work. We don’t have a proficiency for it…we asked ourselves should there be a proficiency for that and what would that look like and we toyed around with it the two of us together and ultimately we decided that everything that is important doesn’t have to be a proficiency. This issue arose months later in the study as well, illustrating that Katrina spent time thinking about and continuing to discuss the proficiencies with colleagues. As she explained,

We have this graduation expectation that is cultural understanding and civic engagement and it’s directly linked to all of the anti-bias, power, and privilege work that we do threaded throughout our ninth grade curriculum and so one of the questions that we discussed do we want to make a proficiency around perspective? I want us to avoid thinking we have to assess everything that we
think is important…at the same time there is something really valuable about making a proficiency around something you really value…I would think I would see us moving in this direction, especially since we have this graduation expectation…four proficiencies is a lot but I could see us going to five, in the future.

The thought processes required in identifying the four proficiencies the humanities team deliberately chose required narrowing down, specifying and clarifying what it was they wanted students to learn. This required time talking and deciding together what mattered most to them and to student learning outcomes.

Katrina also described a shift in the name and focus of one of their learning targets as they reflected on it at the end of the school year. Katrina explained that teachers did “a lot of focused proficiency work at the end of last year and the beginning of this year in departments.” This facilitated the ability of teachers to clarify, specify and narrow. Katrina went on to explain that the English teachers reexamined the proficiency and changed the name from annotation to close reading. She said “that dialogue led to [the answer that] really what the proficiency is, is close reading, it’s not just annotation, annotation is a vehicle.” A conversation like this requires people to focus, think, and have tolerance for reconsidering something that has already been considered. The focus in proficiencies on language, cognitive complexity, and coherence is challenging and requires complex learning conversations that take time in order to clarify, specify, and narrow.
Addy described the process her team used to choose standards to develop proficiencies. It required implementing a first version of what they should teach and then evolved through conversation and reflection over two years. She recounted,

Our first year of doing it [proficiency based learning] we had all those [pointing to list of standards] and then we also had our writing, presentation, collaboration, etc. so we had up to 36 last year so then we decided this is what we are doing this year, these are the ones that we really were able to use to build all assignments toward and these are the ones that we added and made sure, so we ended up 18 including 5 communication ones and a problem solving, we condensed our problem solving and our collaboration to one that we consistently do.

One key to being able to narrow, specify, and clarify is a thorough understanding of the standards toward which students will be working. Addy knows the standards well and was an engaged participant in the process used to distill them, explaining clearly how the team used them to design targets, scales and instruction. They drew from the C3 Framework created for the National Social Studies Standards. She explained,

This is our target [pointing to the document listing her target on the computer screen]. This is the D2 which is primarily what our content is from the C3s so dimension two is geography, economics, civics, and human interaction and we aligned to those standards so we [at Northview High School] have a global citizenship standard which we base our social studies content on in terms of a rubric, global citizenship rubric. It’s a major you must be a global citizen to leave and it has four dimensions environment, economics, citizenship, and human
interaction and we aligned that to the history ones, human interaction with history, civics with citizenship, economics with economics and environment with geography so we chose each of those. It’s analyze, compare, identify, compare, past present causes and consequences [referring to the document].

At the bottom of their year-long planning document each target has a summative assessment listed beneath it. (See Figure 4.1) This excerpt from their planning document shows that this work requires specificity and narrowing.

**Global Citizenship - Human Interaction:**
#7. I can explain my actions and the forces that determine other people’s actions and moral judgments.

*D2.His.5. 9-12 Analyze how historical contexts shaped and continue to shape people’s perspectives.*

*Summative: “Real Lives” paragraphs on Cause and Effect of Personal Actions and on Comparison between Vermont and “My” chosen country of study.*

*Figure 4.1:* Excerpt from Addy’s Year-Long Planning Document Showing Clear Targets

Walter explained one of the main benefits of PBL emerged as he and his co-teacher worked to identify proficiencies to guide student learning. Whereas previously they would differentiate based on their perceptions of students’ struggles and successes, now they were able to link assessment to a clear standard, of proficiency, making it incredibly clear where students struggled and where they were succeeding. This clarity led to an ability to design instructional next steps. He said, “Suddenly differentiation made sense. It made differentiation, not easy, but very straightforward because you could
see very clearly…we’ve got a bunch of kids that are [at] 2s. We have to do some serious work before giving the summative.” He went on to explain, “In hindsight, what was making differentiation so difficult was the lack of standards.”

**Unmasking skills.** Disentangling skills from one another emerged as an important task in PBL, as Walter and his co-teacher regularly faced the challenge of identifying the grain size of target and the skill inherent in the target that they were designing instruction around. When they looked closely sometimes it “forced us to shrink the grain size when we found that certain skills were masking other skills.” Walter explained they had to make sure the grain size was specific enough that it was not two competing skills and that was a big learning curve.” He emphasized that he needed to be clear that the target was about the skills that were being taught and assessed and that there were no other skills masking the student’s ability to demonstrate it. This “unmasking of skills” was evident when he added,

That’s where we found that there are skills that mask other skills so for instance, this one student maybe he’s good at figuring out evidence and piecing pieces together that support something but in the past we would have asked him to come up with a thesis and then with evidence but he’s not at thinking level yet to come up with a good thesis so he comes up with a bad thesis and therefore you’re going to come up with bad evidence and you’re going to have a bad paper, you know, because the ability to not have a good lead was keeping him from demonstrating his ability to use evidence. As we’ve split that up we’ve been able to really diagnose no, he gets evidence and how to support something, he just doesn't yet
have the skill on how to create a good complex claim. We often judge a person’s thinking and everything based on how they write and there’s multiple things that can get in the way. As we’ve narrowed it down we’ve been able to see, oh so and so can read fine but they need a note-taking sheet that’s structured differently so they can organize their thoughts.

Unmasking of skills is figuring out if there are more than one skill students are being asked to perform and analyzing if this is the case if instruction and assessment are lined up with all of the skills. If there are several skills within a target and students are assessed on all of them, yet only practicing some of them in class then instruction, assessment, or the target need to change. Skills need to be separated out so that students are assessed on the skills they are being taught and being asked to practice. This unmasking of skills was also evident as Walter explained, “The evidence (proficiency) is not about writing. It’s about understanding how evidence would work, how it is good, better, and best in a thesis.” He described further how they separated out the idea of evidence into parts and taught students about a variety of skills associated with the use of evidence. He was looking through his targets and scales as he talked about the evidence targets. He explained that there are a variety of steps students need to learn in order to work with evidence. “(In) the next unit we will start to deal with evidence and we’ll start to deal with the writing of evidence and setting it up. The second part of the evidence target is about when writing or speaking how do you set it up to give it context and how do you transition out of it.” He added later, “It’s just evidence two because it’s about the use of evidence. [It’s about] so now that I have my pieces how do I actually use a piece of
evidence...so we practice a ton of finding the best piece of evidence and why pieces of evidence go together.” He and his co-teacher developed and unmasked the skill found in this proficiency over a few years of reflecting and revising. This allowed students to learn skills in a clear way so they could practice each of the skills that make up the larger skill of writing an essay and supporting the thesis with logical and effective evidence. Walter and his teaching partner were able to disentangle skills that went into “writing” from one another to “unmask” them.

In this way, Walter’s students could focus on practicing one skill at a time and getting feedback on it to improve. He illustrated this in his explanation of how they teach, We’ll spend a week, maybe longer, prepping an essay but that will include kids spending all this time with tiles trying to come up with looking at just all the relationships [among evidence] and then trying to come up with a thesis, and then really working on it, testing a thesis, looking for evidence. By the time they sit down to write an essay then it’s actually about writing because they’ve done all the thinking, they have all their evidence, they have their leads. Now it’s about how do I craft, how do I transition, how do I use grammar, how do I use word choice. In the past it was about the thinking and obviously because we asked them to do it at the same time the thinking would be pretty limited, so that was a huge, huge change for us.

Katrina also identified the importance of “unmasking skills” although she did not use the same term. She and her co-teacher studied where their learners were in relation to the learning targets to disentangle skills that may have masked student ability to
demonstrate the learning target. Creating proficiencies, she described, “did force us to be really precise in what and how we were assessing what. The summarizing one [proficiency] is a great example of that.” Along with this precision they had to explore if skills were being what Walter referred to as “masked.” She explained that with summarizing they had to consider if the expectation was for a student to be able to summarize using grade level reading or if it was okay to summarize using below grade level reading sources. They decided that because the skill they were assessing was summarizing, not reading, a student could be considered proficient in summarizing without reading at grade level. Katrina explained another question they explored in relation to the summarizing proficiency.

It’s just a series of questions like does this matter or doesn’t it? The next thing we had to figure out was does it matter that the kid is getting totally tripped up by writing? When you ask them to put it [the summary] in paragraph form, could they put it in a graphic organizer and was it still summarizing? We decided yes. We didn’t want writing to get in the way of the skill of summarizing because it’s the skills of summarizing that we want them to demonstrate, so if the writing is an obstacle, take the writing out.

She and her co-teacher conversed about what supports could be included for someone to be considered proficient at a skill. When she discussed the skill of using details to support a main idea Katrina explained that they had to answer the question, “If I have to fish for it [the details], does it still count?” She ended the part of this conversation by adding:
That whole process of deciding what mattered and what didn’t in assessment, I feel like that gave us a lot of clarity. When we presented to the school board we got a little bit of push back on that. Like, you’re making it easier. And we said no, we’re making it more precise.

Each of the teachers described their desire to clearly unmask skills so students could learn a skill well without it being obscured by another skill. The precision allows students to learn skills and to learn more deeply.

**Deep Learning**

The teachers in the study spent a lot of time designing instruction that facilitated deep learning experiences for students. Fullan and Langworthy (2014) wrote that deep learning is characteristic of “new pedagogies” in which “the explicit aim is deep learning that goes beyond the mastery of existing content knowledge. Here, deep learning is defined as ‘creation of and use of new knowledge in the world’ (p. ii). Senge et al. (2000) similarly posited that, in schools that learn, learners would be exposed to learning experiences that “fired your imagination with new knowledge or touched a chord in you that opened doorways you didn’t know existed” (p. 4). Each of the teachers in this study designed learning experiences and opportunities that fit these definitions. It was evident from their interviews and observations that the teachers were doing as much learning as the students. Their classrooms were busy places filled with learning for all learners, including the adults. “What if all communities were dedicated, first and foremost, to fostering this connection between living and learning?” (Senge et al., 2000, p. 4) The participants in this study designed learning opportunities that offered deep learning
opportunities to foster this connection. They described this deep learning in four specific ways: a new relationship to content, multiple opportunities for students to engage with concepts and skills, teaching students about learning, and providing learning opportunities designed for students to surpass where the world currently is.

**A new relationship to content.** Addy, Katrina, and Walter all teach content. Content has not gone anywhere; the shift is that content now is organized around targets, scales, and concepts and is almost always used to practice toward the learning target. Another notable reported difference in the approach to content that is named and formalized in all three teachers’ practices and programs. The approach focuses on depth over breadth. Students learn less widely and more deeply.

Walter shared his perspective on the before PBL and after PBL relationship to content. “There is less of a breadth covered meaning I used to teach a class that was supposed to start in the Stone Age and it was supposed to end today. I can’t count the number of times [people would say] I haven’t done the French Revolution and we’d be like alright well we’ll do forty minutes with the French Revolution this afternoon.”

Katrina spoke about this when she was talking about balancing proficiencies with content. In their second year she said, “We balanced more…and we also took another step back from the required list of content”. The findings ask teachers to mine and distill what needs to be taught so the content that is taught is taught deeply and well. Wormeli (2003) describes a significant shift in how we will use the content as a way for students to practice and learn skills,
the goal is not for students to read every word of the chapter…the goal is for students to learn the similarities and differences between Douglas and Lincoln in the areas listed. It requires repeated visits to what we consider essential and enduring in our lessons in conjunction with solid understanding of cognitive theory. (para. 14)

As Walter explained, “The content isn’t driving what we do, it’s the skills we want and the understanding and then we can find the content to help support it or they can find the content to help support it.” By “help support it” he means support the thesis of their argument on a given topic. For example, students were given reading material and a video on the Mongols, a content area which they had never explored before. They had just finished practice using the content of the Black Death. Students were practicing the skills of the learning targets which were finding evidence to prove a thesis and also finding an effective way to best organize and use the evidence supported by a rationale that explained why this way was effective. Students approached Walter during the assessment and said things like, “I got these two pieces of evidence and feel like this one should go here but I found another one in this article here” and Walter added to make the point, “they are grappling with content at a much higher level than they ever were.” Walter recognized the significance in the alternative approach. “Our summative was one hundred percent brand new content, which as a social studies teacher would have floored me until last year.”

Walter and his co-teacher worked with students on developing a thesis and finding evidence to support the thesis. While thesis and evidence are the skills they are
working on Walter noted, “You can’t come up with a good complex thesis about the relationship between Macbeth and Machiavelli unless you know Macbeth and Machiavelli.” He also identified another relationship to content, which is to facilitate differentiated learning. “We would use Machiavelli for instance to work on [reading] strategies like chunking and pruning and different ways to get at different things, we would use Macbeth for different input types of things.” Walter clarified that content may be organized to reflect that students may be in different places on a learning scale so different students may be using the content in different ways.

We’ve got a different group of kids here [on the scale] so suddenly in class we’d be using the same content but you might be working on evidence with it, you might be working on analysis or cause and effect so suddenly we used the content to practice the skills that were necessary. So you were still grappling with Lord of the Flies and Locke and the Enlightenment but you might be doing some different things with it [than other students].

Walter described class in a PBL paradigm and in his description he focused more student driven work and engagement rather than on the teacher driving the focus of the class or discussion:

There is a lot of messing around, I mean class is messy in that regard. There is a lot of grappling but we step out of the way. I mean there might be five instances this year where Jessica or I spoke for more than five minutes at the start of a class, or ten minutes at the start of a class. It’s much more, I mean it may be start go, and part, but so much less of us. The whole group is very minimal.
Katrina addressed a slightly different new approach to the use of content in learning when students are learning they have choice of how to access the content.

In the spring my history content gets deeper and harder and so one of the things I do I feel like I can do a lot…is here’s some content you have four choices for how you get the content and I’m relying on the fact that they know to summarize, the fact that they know how to annotate because I’ve taught and assessed and made sure that my students are proficient with those skills. I will say here are three different levels of text, summarize or annotate and chose the things that work for you of if you’re feeling like text is not where you’re at here’s a video with slides, you’ll need headphones.

Content is still a significant part of the learner’s experience in a PBL system. Where PBL represents a shift is in the use of content to learn more deeply and as a vehicle for students to practice and demonstrate mastery of concepts and skills.

**Multiple opportunities to practice engaging with concepts and skills.** The teachers in this study helped to illuminate that PBL instruction is designed around multiple opportunities to practice toward proficiencies, which are designed around concepts and skills. In a PBL classroom the time is designed specifically to provide students with practice working to develop a deeper understanding of concepts and skills.

In Addy’s class, students were working on the proficiencies, or learning targets, of evaluating sources and facilitating collaborative dialogue. Each student was expected to provide a news story, with sources representing the variety of perspectives on the topic, to the whole class and to facilitate a collaborative and democratic dialogue about
the topic. Two times I observed the class practicing for this together, to prepare for when students would do this on their own, which would represent their summative grade. Students had several opportunities to practice all the skills required of the summative and then to “bring it to the class and have the class enter a learning dialogue on it” and then students were “actually graded on your summative assessment.”

During the observation Addy reminded the students more than once, “This is just practice,” as they worked. Students had already submitted responses to the assignment and she had given them feedback on their documents digitally. At least five students called her over at the beginning of class to ask her about feedback she had given them. Addy explained that practice was worth a small amount toward the student’s grade and grows in importance over time. The second time I observed the class I heard the feedback that she was giving orally to the entire class. She asked the individual students questions that were also part of their learning targets about evaluating sources, identifying bias, and identifying lingering questions. Practice was evident in assignments, student work, observations, and in her interviews.

When asked about the “biggest shifts in assessment,” Addy replied, “The build up to the summative and that the summative. We want to make sure that everyone’s ready so there’s enough practice ahead of time.” Addy felt like her 9th graders picked up the idea of practice, and multiple opportunities to practice, toward the target right away. She said,

they learned right at the beginning that if they didn’t get an A on the first one it wasn’t going to determine that they didn’t get an A on their report card or an
exceptional on their report card. They learned the first one could be the one they felt good about but they also could rework and get it to the level; they learned that they are going to be over this multiple times and so what they see is not the end. What they see every day is not the end result, that it’s going to spiral up, it’s going to count more.

At the end of the year the idea of multiple opportunities has an added piece to it. If students have not achieved proficiency by the end of a unit of study in a PBL system, students are given opportunities to keep practicing. Addy talked about end of the year activities when some students are outside and others “stay in here and retake your geography to make sure you get enough practice” and if students are not ready for a summative assessment during the year they “must go back and do the practices before you can retake it.” The options of practice are provided and students have the opportunity to continue to learn toward the target.

Walter shared a similar approach to end of year opportunities. He said, “We are done with direct instruction and it’s only May so now it’s time for continued practice.” While I was observing, a student called Walter’s co-teacher over because she was ready to demonstrate an attempt at proficiency of a skill. Right there in that moment the student demonstrated it and received feedback. This contrasts with what Walter described as his former teaching practice of addressing the need to teach the French Revolution with a 40-minute lecture. PBL is a very different approach to designing learning.

Multiple opportunities to practice are what instruction and assessment in the PBL classroom are designed around. Throughout the study, instruction was designed to
provide opportunities to practice. Assessment took the form of feedback given on the practice in order to help students know where they were in relation to the target and how to move forward.

**Learning about learning.** Another commonality shared by the teachers in this study was a belief in the importance of teaching students about the cognitive process of learning. Brown, Roediger, and McDaniel (2014) wrote,

> How we teach and study is largely a mix of theory, lore, and intuition. But over the last forty years and more, cognitive psychologists have been working to build a body of evidence to clarify what works and to discover the strategies that get results. (p. 8)

These teachers recognized the importance of teaching students how to learn so that they could transfer this knowledge, awareness, and skill to new settings.

Learning how the brain works was foundational in each teacher’s teaching. For example, in Katrina’s classroom early in the school year, the focus of the class was on learning and the brain. On the whiteboard where the agenda was listed, there was written, “You will be able to describe three ways people learn.” At the start of class Katrina had students pair up and introduce themselves to make sure they all knew each other’s name. She told them to make eye contact with one another, say your name, and to “make those pathways strong.” She told the students not to “let shrubs grow in our pathways.” This was an indication that students had already been introduced to the concept of learning as “growing pathways” and the idea that pathways that are repeated grow stronger. Building
an understanding of how the brain learns was used as a foundation for learning in all three classes.

Katrina elaborated, describing how teaching students about their brain, learning, and how to learn yielded results that learners themselves expressed at the end of the year. The feedback that we’ve gotten from students both intentional feedback for us and unintentional feedback where we’ve asked kids what are your big takeaways this year, that piece about learning and understanding and keep trying and brain function, that really stuck with our kids this year more than other years

Katrina often referred in class to the fact that a strategy they were using was “based in brain science” and that the strategy would “create pathways in our brain.” Katrina explained that teaching using principles of cognitive neuroscience was “not just what you’re teaching but how you teach and the one liners that you always say.” She acknowledge that it took “a couple of years” to integrate that into her teaching.

When I observed in Katrina’s room, it was evident that this was part of her practice. Students read and discussed an article about growth mindset and watched a video about how learning really happens. Students were prompted to discuss both the video and the article in small groups which forces students to practice retrieval, a strategy based on cognitive science that supports learning, while they were talking about learning.

Katrina demonstrated teaching students about learning while using a strategy, retrieval that cognitive science shows supports learning (Brown et al., 2014; Dunlosky, 2013). Judy Willis (2010), a neurologist and middle school teacher, wrote about how
essential it is to teach learners of all ages about their own brain and how it learns so they can take active control of their own learning.

Teaching students the mechanism behind how the brain operates and teaching them approaches they can use to work that mechanism more effectively helps students believe they can create a more intelligent, creative, and powerful brain. It also shows them that striving for emotional awareness and physical health is part of keeping an optimally functioning brain. Thus, instruction in brain function will lead to healthier learners as well as wiser ones (p. 3)

Walter reflected a similar outcome for his students at the end of the year about learning about learning:

I think we would have more kids [that said] at the end of class that they learned how to learn…we’re spending much more time on how do I think, how do I organize this…how do I come up with a claim, how do I come up with a thought?

One of Walter’s classes I observed was a guest lesson that he and his co-teacher presented for students in another class in the school. The teachers of this class had invited Walter and Jessica to come in and explain learning, interest, and skill. Walter’s co-teacher drew an image of learning on the board including three categories with his representation the brain in the center. The image explained the process of learning using the word input to represent what the student interacts with to learn such as a reading, image, or a presentation. The second image of the brain represented the student thinking, and the third image represented student output as they communicate their learning. These three categories were used as a way to describe the learning process.
Walter then asked the students to create a mind map and apply and overlay their thinking about their projects using the categories of the input, thinking, and output. Students were asked to consider how they were going to learn what they were planning on learning, how they were going to think about and process it, and to describe clearly some ideas they had about how they may want to communicate or represent their learning. The goal was to have students consider how they might go about learning; they were teaching metacognition through having students articulate how they would learn about their proposed projects. They are striving to create a model that links personalization and standards-based learning.

In Addy’s classroom practices related to learning and the brain were utilized as well. She described,

In ninth grade we stress the importance of knowing YOURSELF and being able to share that information with us so that we can understand what is happening in each student's brain and body as they learn… Food, stress, cellphone, addictions, distractions, amygdalae and hippocampus as well as the developing teenage frontal cortex all are mentioned repeatedly as we ask students to create goals for their success. Our student goal setting is STILL in its infancy as we tackle the adults' goals toward proficiency based learning… I especially stress students’ responsibilities and rights. I believe in Personalized Learning because it teaches that rights and responsibilities go hand in hand AND emphasize the need for students to take responsibility for their own learning.
Walter and his teaching partner teacher did an introductory unit on the brain. On their course website they explicitly identified “Learning and the Brain” as a key piece of curricular content with an extensive list of resources that they use with students. They wrote a letter to their students explaining why they were going to be learning about learning. They explained that knowing how the brain works is crucial to learning. Dunlosky (2013) emphasized “…teaching students how to learn is as important as teaching them content, because acquiring both the right learning strategies and background knowledge is important—if not essential—for promoting lifelong learning” (pp. 12-13). Walter and his co-teacher made this the foundation of their class for the year.

**Surpassing.** The teachers in this study all worked with students toward instructional arcs that end beyond their classroom and beyond themselves. The teachers designed learning in the way Duckworth (2009) described, with the goal being to design learning so that teachers are “putting learners in direct contact with the subject matter” (p. 186). She explained,

> In so doing, we find that contributing our own ideas and thoughts about the subject matter almost always short-circuits the students’ thoughts, and decreases their interest. But when we help them to take charge of their own explorations of subject matter, they do remarkable work (p. 186).

Each of the teachers in this study put students in direct contact with the subject matter and put them in charge of their own explorations, expecting them to engage fully with the material and to think about how they would genuinely use it in the world in a way that, as Addy articulated, “to get them beyond … the Vygotsky idea of… creativity”
to “add to the discipline in ways that you never even thought of” and to “bring a better idea to the world.”

Addy spoke to this during her description of her students’ final Model UN work. With reverence she spoke of the resolutions they wrote at the end of their examination of global issues:

The students…solved the refugee problem before it happened; I mean literally they had ideas that would have saved us if we put them into effect. They [the ideas] were to set up an international group that brings in money and is going to support the building up this so we can support the countries who agree to take in refugees and build a network of countries that can do it and make sure they get the supplies they need and then figure out where the needs are and put it in place right away.

She stopped for a moment and added, “but we didn’t; we had to do it reactively.”

Katrina also designed the student learning trajectory to go beyond where the world is currently. She described, “the most important thing” her students learn as their “social justice curriculum or what is really anti-bias” work in which students study the world of privilege and power through a variety of lens and are asked to create a project that improves the world.

Walter’s class ended the year working similarly toward improving the world. Students worked in teams and partnered with community experts on innovation projects for several weeks at the end of the school year. The class was about world history and the last portion was dedicated to students innovating to contribute to the world. The students’
projects were innovative and all took a modern day problem and worked to solve it. Many of the students had realistic and applicable designs that they worked on with local business people and experts that could benefit the world if put into use. He credited a fellow educator and school consultant with the idea that students need to work beyond where the world is. He said,

It was Rick Wormeli, we saw him a couple of years ago and he was talking about if your goal for the kids is to know as much as you know, we’re never going to go anywhere, let ‘em play. You gotta get them set up so they can surpass you.

This “surpassing” is represented in PBL as the last column on the scale. The criteria in this column describe what it looks like to go beyond proficient. On Walter’s scales the column was labeled with a four or simply had an arrow at the top moving toward the higher levels so the “top” of the arrow hovered over the highest value column, Addy’s highest column was labeled “extending,” and Katrina’s highest column was labeled “exceeding.”

**Shifting Formative Assessment to the Center**

A major theme that emerged across all teachers in relation to assessment shifts that accompany the implementation of proficiency-based was the use of formative assessment. Formative assessment is a cornerstone of the PBL classroom, much more so than in a more traditional classroom. This is a shift away from a singular conception of assessment as mainly summative, or taking place after learning happens to measure the learning (Marzano, 2010, p. 8) rather than as part of the learning process. The subthemes that emerged include viewing assessment as feedback rather than judgment, the design of
assessment around proficiencies, and alignment between instruction, practice, and assessment.

**Feedback not judgment; we are in this together.** Assessment in the PBL setting is a significant shift from the typical approach to assessment in which the feedback cycle encompasses teacher assessment of student work and teacher report back to students. The feedback loop in a PBL classroom is a continuous loop that goes back and forth between learner and teacher until students demonstrate proficiency. The role of assessment in a proficiency-based system is to provide information to teachers about where the student is so the teacher can provide feedback and instruction to move the student forward.

Walter uses a GPS analogy when talking about PBL assessment. He said, “We do this big GPS thing, the target is wherever you drop the pin. That’s where we’re trying to get you to…and our job as a teacher is to get them to the pin and not just to say here’s the pin.” Walter acknowledged about teachers, “We’re good at saying here’s the pin and you got there, you didn’t get there.” He explained that the approach to assessment is a shift from “grades as compensation to grades as communication.” Grades as communication and not as a tool for compliance, rewards, or as compensation is a significant shift.

Vatterott (2015) wrote, “Standards based grading requires us to let go of our grip on control and to trust the students’ intrinsic desire to learn” (p. 37). She continued, “to implement the standards-based grading paradigm, we must move from a demand model, in which we use grades to control and coerce learners, to a support model” (p. 37). The teacher must become more of an advocate and less of a judge (Guskey & Bailey, 2001, p. 37).
When Walter described how he and Jessica use the learning scales he said, “We could see, oh look, we’ve got a bunch of kids that are at 2s; well, we’ve got to do some serious work with them prior to giving the summative.” In a proficiency-based system the focus is assessment on learning in order to measure it, yes, but also assessment as a significant part of the learning process. Walter reflected,

My feedback went from saying here’s where you are to here’s what we’re going to do and I think that changed class culture a ton. That’s the whole, who is it [who says] when I give feedback I am your advocate, when I grade I am your judge…but the idea that ok we’re going to get there. Here’s what I’m going to do, here’s what you’re going to do, we’re in this like our job is to get there. That to me changed the class dynamic more than anything…I think it really changed the concept of learning the tension and nervousness of kids. I think it released some kids to stop actually worrying about a score and just look at it as learning and feedback and improving which in turn usually let them improve more.

This will be a significant shift in how assessment is used. However, Wormeli (2011) implored,

The recursive nature of successful learning shouldn’t be discarded because it’s inconvenient or we haven’t figured out how to do it logistically…it’s too important to our society: We must improve with practice, descriptive feedback, and revising our practices in light of that feedback, followed by more practice, feedback, and revision. (p. 24)

This shift can be detected in nuanced but telling language. When Katrina reflected
on her curriculum in the spring being focused on deepening content knowledge, she said, “I’m relying on the fact that they [students] know how to summarize, the fact that they know how to annotate because I’ve taught, assessed and made sure that my students are proficient with those skills.” The phrase “made sure that my students are proficient” means students have had multiple attempts. When Katrina talked about her organization of assessment as and for learning she explained that she tries to,

Make it really clear to students that it is practice for the thing [whatever the proficiency is] so I started doing that really religiously. We call it proficiency race day. This is practice, practice, practice, we’re training and the race is this day. And then we use the language of what happens if you have a bad race, where are my cross country runners in the room, do you stop racing? And they’re like, no, you still have to race…you get better at it by doing it.

To extend her metaphor, this approach contrasts with the singular use of assessment, summative, to measure how far or how fast students went in the race, as opposed to examining how students performed to inform the next training steps or formative.

Vatterott (2015) contributed to a clear vision of this shift in the use of feedback and grades:

Only the end stage of learning matters—we test for mastery of what students can demonstrate at the end of a learning sequence. Grades are deferred until the student has mastered the material. This practice makes it safe for students who do not understand concepts in the beginning of a learning cycle to continue to learn without penalty. (p. 37)
Katrina built in a second race day after she examined her results of the initial race day and saw that only about 60% of the students demonstrated proficiency on summarization. The first assessment was built as more formal practice with feedback designed to help prepare for the second assessment, which was still “well before the end of the quarter” so students could still have opportunities to employ feedback to improve. Classes are typically not designed this way however.

The teachers in this study all used assessment as feedback and not as judgment. They designed learning around practice so students and teachers had multiple opportunities to develop evidence that would help teachers move them forward. This theme leads to the idea that all assessment is clearly designed around proficiencies.

**Designing assessment around proficiencies.** Walter described the shift to PBL as “a 180.” His shift began early on when a math teacher told him how she was changing the grade book to reflect standards or proficiencies. She was working on organizing her grade book based on skills or targets. He said, “She was keeping score based on not the assignment but what the assignment gave her information on.” Walter reported as he and his teaching partner began to mimic this with their own grade book that this was their “aha moment.” They said to each other, “We’ve been doing this wrong for 15 years and our focus on and what we’re giving feedback on and how we were arranging things…all of a sudden made so much more sense.”

The shift he described is toward the use of grades to reflect not where a learner is on just one assignment, but rather where that assignment reveals the learner to be in relation to a standard or a target. This was described by all of the participants as the
central goal of assessment: to determine where learners are and what they still need to learn in relation to the proficiency.

Walter, Katrina, and Addy all shared their assessment practices in this study through interviews. And the observations and document review all confirmed the assessment products, performances, and reporting were all designed around proficiencies.

**Targets; alignment between instruction, practice, and assessment.** All three participants use clearly identified targets and scales in their PBL classrooms. The language differs slightly from school to school. Targets are referred to as proficiencies by Katrina and Addy’s schools, for example, and as standards by Walter’s school. In each case however, these targets and scales guide instruction. The learning target is what students will be able to do when they are proficient. Statements start with “I can” and describe clearly what the students can do. Along the scale criteria specifically explain what the skill will look like when students can demonstrate it at each level (see Figure 4.2).

<table>
<thead>
<tr>
<th>Output: Using Media: Blogging</th>
<th>I am working towards the next level.</th>
<th>I use text, visuals, and/or links in my blog; my choices relate to my topic.</th>
<th>I can use a combination of text, visuals, and links to express my ideas clearly to a chosen audience; my choices support my purpose.</th>
<th>I intentionally use layout, organization, and other graphic and aesthetic elements to enhance my purpose and communicate to my audience.</th>
</tr>
</thead>
</table>

**Figure 4.2: Learning Target and Scale**

For example, Walter and Jessica create targets for each unit and paste them into their unit overview that they share with students. At each level the language describes exactly what the students will be able to do. At the first level Walter and Jessica write in “I am working towards the next level.” At the second level students can use texts visuals,
and/or links in my blog and their choices related to their topic. At the third level students use a combination of visuals, texts, and links to express their ideas clearly to a chosen audience and their choices not only relate to the purpose of the blog entry but they support the purpose. At the highest level of the scale, students intentionally use strategies to enhance their purpose and communicate to their audience. These scales guide instruction. So in this class Walter and his co-teacher provided students with learning opportunities that helped them (to do what?). In a PBL classroom, teachers design instruction around where students are on the scale when they begin, which is identified through pre-assessments. Teachers then provide students with instruction and practice to move them toward the highest level of the scale.

Walter’s assignments and targets are listed at the top with the scales so students can see the language of each as they work. Walter explained, “We’ll always put the scale and there might be two [targets]…on whatever the assignment is, let’s say you would hand this in, we’ll put the scale right on it so we can give the feedback [right on the paper].”

Figure 4.3: Targets Listed on Assignments
Walter described the shift from a traditional rubric that described the target in the proficient column and then in the box below the target it would say “not at the target yet.” He described the “not yet” language as “not very motivating,” especially when students continue to struggle and the message continues to be that they are “still not there.” Teachers clearly articulating the learning progression helped design instruction so students could make progress toward the target through practice. Walter recognized that this was a significant instructional shift.

By making those statements it has really helped guide instruction because I know now that I’ve articulated I’ve got to be able to move you from this to this or whatever it may be. And that is the biggest challenge is that changing the instruction. More and more teachers are using the scales to assess. Using the scales to instruct and differentiate is the challenge.

He also described that having students “practice them [the targets] at all levels has been essential.” He meant that students actually work to create what they think the work might look like at a variety of levels. He described what they asked the students to do:

Based on the scale, put together pieces of evidence that would score you a two, three, four. So (we) actually have them try to do it at all levels and it’s been great because it has also helped us have to articulate the difference and that’s been a huge breakthrough for us.

Walter explained how feedback improved when it was aligned and targeted. The alignment of instruction to assessment allows for clear feedback. Walter explained,
Our feedback got better when we gave less of it. What I mean by that is the targets made it become much more specific and so we weren’t just writing a bunch of stuff to make it feel like we were doing our job. It was also feedback became class structure [for the following day] so realizing that I’ve got 45 kids here between our classes, 12 that are struggling here, 12 are here and that we can structure class so I can take 15 minutes with that 12 and it was targeted.

For the teachers in this study, this is the desired outcome of aligning instruction to assessment. Assessment informs the next differentiated instructional steps because it becomes clear where students are in the learning progression.

Another example of this alignment of instruction, practice, and assessment can be found in Addy’s 9th grade class, where students were writing a LEAF (which stands for lead sentence, evidence, analysis, finisher) about being a Global Citizen. The learning targets and scales were on the back of the assignment. The front of the paper was organized so students could use a graphic organizer that was directly linked to the expectation of the target. On Katrina’s close reading rubric, she included instructions for how students should color code their markup of the text to correspond with the scale. The teachers and students were using the scale and working toward the target during class and on assignments.

In a document called, “Global Studies Learning Goals,” Addy and her colleagues with whom she teaches 9th grade organized their yearlong targets with summative assignments attached to each target. The document is a curricular map that is not organized by topics but by skills that students will practice during the unit. Students in
Addy’s class were working toward the proficiency or target of “civic action to inform” and decided that they were going to bring the elections to school for their “civic action to inform.” In class they organized the details to bring the election to the school, including informing students about the election. Addy said,

They have chosen roles. One student is making our ballot boxes, others are making banners and getting the publicity out there. We have the head of the education committee in the legislature coming in to explain Act 46 because we’re voting on it and students have to decide what they’re actually going to put on the ballot whether they know enough to teach others.

The town clerk had come to class previously to explain the ballot to the students. The target was what the students were practicing in class. All that the students were practicing lined up with the target of “civic action to inform”. The target informed instruction, practice, and assessment. All of the teachers in this study used the target to design and align instruction, practice, and assessment. They could all be traced to the target and learning progressions described in the target.

**Emerging Structures and New Roles**

The implementation of PBL as described by the teachers in this study created ripple effects that impacted the whole system. Each of the teachers described how their implementation of PBL practices was causing new structures to emerge, including new roles for students and for teachers. The shift created a need to redesign some aspects of the current system, including the use of time, the role of grades, teacher teaming, technology integration and student-teacher partnerships.
**How time is used.** Throughout the study it was clear that teachers were using time in new ways. The themes of “new relationship to content” and “designing learning around practice” contained much of the rationale for why time was being used in new ways. Additional evidence also suggested that this was an emerging theme in the implementation of PBL. For example, Teacher Advisories (TAs) emerged as a helpful structure for student advisement. Katrina described the important role that she believed advisors and TAs would play over time, as a school transitions to PBL. She described TAs as the place where advisors are “helping students in the future. When we’re really there, they will be the ones to help students document and reflect and assemble and curate their evidence of their personal learning plan.”

Teachers in this study also reported scheduling larger chunks of time with students in order to use that time flexibly to meet evolving, emerging, and identifying needs. This included more practice toward a particular target, even if other students have already reached the target. Addy described their 9th grade, end-of-year Model UN project, in which students were given time to work on their individual proficiencies.

That we have chosen [and] are all demonstrated and assessed through the final projects which are completing the research paper, working collaboratively, presenting the treaty at a Model United Nations in the auditorium on the stage, voting and explaining your vote for your country on every treaty proposed, and then writing a position paper on one just a 250-word strong paragraph their choice to a five paragraph five hundred word on a topic that they sincerely believe in.
The crisis committees have tie to put their papers together, they have time to present at the Model United Nations, they have time to vote and reflect.

In this case, students arrive to class knowing their proficiencies and knowing they will have time to practice, or work, on them.

Addy explained how their team used time in other ways as well; they can use time to, “have all three classes or those classes could all be doing something together or practicing your goals making sure you get what you didn’t get, you know that type of thing.” She continued to explain about the flexible use of class time, “We can [use that chunk of time for] content, content, content or separate classes which we have tended to do with each class having a piece of the pie as how it gets to the final project”

Addy identified time as a key element moving forward with effective PBL implementation. She explained that they need “the support time for kids, the call back time for kids who need more practice. We don’t have a decent summer school. I’d love to see nine weeks on, three weeks off to catch up.”

Walter also described the flexible use of time that he and his co-teacher had with students. They had a big block of time that they could arrange in any way they needed. In response to students needing work toward a specific proficiency, they designed class to be a series of workshops that provided instruction and clarification toward a certain proficiency. Students could attend whichever workshops they felt they needed to improve, except in a few cases when they would specifically tell a student that she or he needed to attend one first and then could attend whichever one they wanted for the second session.
Similarly, Katrina described the flexible use of time as one of their earliest shifts to facilitate PBL.

The other thing I think helped us was we have these three hours. We were already moving toward a very flexible approach to time and groupings so we would often change our approach for specific purposes or change our groupings...and I feel like because we already had that in place that kind of helped us.

Additionally, Katrina explained another shift in the use of time, as they responded to students’ identified needs. They created a system they named “call back” time. On Katrina’s course syllabus, there was a section dedicated to “call back.” It explained how call back worked including details and how students could be both assigned to call back or drop in by choice during call back. In class observations, during interviews, and in the documents generated for students Katrina and her co-teacher worked to create a safe and positive association with call back. Katrina explained the importance of creating an environment that embraces call back and develops a “no shame” feeling toward the practice.

When introducing the concept of call back to students, Katrina described it as “part of our culture, it’s part of what we do.” She normalized the additional time added on to class. She also reported,

Kids did say in the feedback that they really appreciated the culture that we established and that we really strongly put that message out there that if you’re in call back there’s no shame in that, people come to call back for all kinds of reasons and call back is for everyone. We actually had one student who said in her
feedback that made a big impact on them. It made a safe place to go and maybe there’s someone who’s a high flyer and wouldn’t necessarily feel like they could go to an afterschool help session without feeling like there was some kind of stigma to that.

In these ways, teacher autonomy to use time in a variety of ways clearly helped with the implementation of PBL.

What’s in a grade? In describing the shift to PBL, teachers identified a clear shift in the use of grades. With work habits counting separately from academic work, there could seem like there was less importance placed on work habits. However, teachers felt there was a new commitment to reporting them separately, clearly and well. They felt that the academic grades recorded in the PBL environment were a more accurate representation of students’ academic skills because they did not include a mix of tardies, late work, or other grades related to behavior, averaged in with the reflection of where student is in relation to an academic learning target.

When Katrina began the shift to PBL she realized that she was fine with eliminating grades. Grades, she found, actually got in the way of communicating about learning and they were ready to go to a place where communication was about learning and not about grades. They found tremendous anxiety and pushback when they tried to operate without grades. Katrina said, “We found that grades are kids’ currency.” She explained that one of the student mindsets related to grades was “tell me what to do and I will do it so I can get an A and that is part of my self-worth.”
Katrina, Walter and Addy all shared that they worked and reworked their grading practices in PBL and they all had systems that were just a little bit different; however, a major significance of how grades are reported was the notion of the “latest attempt.” One category was formative or practice, which was tracked but not graded or graded an insignificant amount. Another category was summative, which counted (how? toward a final grade?). This was the assessment that students had been practicing and working toward. Katrina called her summative days “proficiency race days” for which students train, or practice.

Each teacher’s school approached the names of the increasingly proficient columns in slightly different ways. The commonality was that all schools used four levels of performance indicators, or criteria, to explain the learning progression along the scale. The names of each of the columns varied by school. Katrina’s scales’ columns were labeled using the words from highest to lowest: exceeding, proficient, approaching, and beginning. Addy’s school used extending, proficient, developing and getting started. Walter’s scales, when labeled, were labeled 1, 2, 3, 4; however, the individual targets on the assignments reviewed as part of the document review did not have the numbers listed. There was only an arrow running across the top pointing toward and ending at the top of the level four box. The variety of names communicates the same thing to students; they all communicate clearly what evidence of progress and mastery toward proficiency is. The grade is a reflection of where a student is in relation to a target.

Each participant described the categories they have developed to track student grades. The grading categories teachers used did not all have the exact same name,
however, they did reflect major PBL assessment shifts such as separating cognitive and non-cognitive skills, setting clear standards for students, assessing growth and progress, and using assessment to inform instruction. (Guskey & Bailey, 2010; Vatterott, 2015).

**High school teaming.** Each of the participants in this study teamed with another teacher. In all three cases much of the time they spoke in “we” versus “I” language because their teams were so integrated in terms of decision making, reflection, and other collegial practices and responsibilities. There are several reasons evidenced in this study that explain why teaming was an important factor in implementing PBL.

Addy explained about the benefits of the structure of the teaming time. “That’s why we like the team structure because one day we can have all three classes or those classes could be something together or practicing your goals making sure you get what you didn’t get.” She also talked about distilling the content together to identify proficiencies. “We narrowed it down and we went down to nine, eight really.” Almost all of the language around decision making about proficiencies that the participants used was “we” language.

The power of teaming was echoed in the participants’ words but even more powerful was the way they interacted with their colleagues when I visited them at school. When I was interviewing Addy, one of her co-teachers came in and they easily and happily interacted; they exchanged brief sentences about student work for students in the room and it seemed to make sense to both of them and provide a strong structure of support to the students in the room. When Addy introduced me to the teammate she
talked about her degree she was working on with a smile and what seemed to be pride. From an observer’s perspective there was warmth and support in their interaction.

Walter and Jessica have been working together for over a decade. Most of the interviews took place in their meeting room and Jessica was there, too. Sometimes when Walter had a question he would pause, look over, and ask Jessica. Their interactions were so collegial; they seemed to share a brain as they helped each other think about the history of their work. Walter would ask a seemingly very complex question and Jessica knew immediately to what he was referring and would answer. When I observed a class of Walter’s, he and Jessica went back and forth between two rooms in which students were writing papers and doing research. They would cluster for a moment and share a success, an insight, a student’s words or ideas, all the while seeming to study the learners. They worked together to figure out where their students were and tried to anticipate what they might need next. They both coached the students as they were called over to share their work or ask a question. There was joy in their interactions centered around student learning and trying to understand how best to support it.

Katrina described working with Molly as a significant change in her teaching career. She explained that, as she was trying to find her place in the school, she “found some people, like Molly” who made her “positive and optimistic about the change efforts in this school.” She added of their early teaming and development of PBL curriculum, “We sat down and we were kind of like…let’s just do it [PBL]. I think that’s why we sort of gravitated toward teaching together because that’s just sort of our style and personality, we are risk takers.”
Senge et al. (2000) noted that, “Community building is difficult in many schools because teachers tend to teach in isolation from one another and their workday is scheduled tightly with little or no flexibility for conversation” (p. 320). The participants’ schools and the participants themselves broke out of this mode and created structures in which it was easier to innovate and learn together. The teams enabled each of these educators to try new things, take risks, potentially fail and try again because they were not working in isolation; the failure was a shared effort and responsibility that could be addressed together. Similarly, the successes were that much more satisfying because they could be recognized together. Senge and colleagues cautioned, “An innovative classroom without active links to the world around it is not sustainable” (p. 302). They elaborated,

The energy generated by one person who is willing to take risks and try something new needs to find a release, much like electricity seeking a ground. An innovator needs someone to talk with for encouragement and perspective—and someone to grow with as an innovator. (p. 302)

This was the case for each of the participants; the teaming structure enhanced their practice.

**Use of technology.** Technology was another structure that emerged as central to PBL. Katrina articulated that she has to live in a system that still uses quarters so she uses “incomplete” because the learning is incomplete. She explained the potential stress and confusion associated with living in the PBL world and the world of traditional grading. “I still have to live in a quarter system” and so reporting grades can be confusing when the learning is still ongoing and in process. Katrina reports the “not yet proficient” as
incomplete. She said, “The data people think I’m crazy because they’re like what do you mean you have 40% of your students with incompletes? And I’m like, well, they haven’t gotten the learning yet.”

Creating digital and physical platforms to help people anticipate these challenges could alleviate the feeling of “forget this” and help people problem solve when they approach an unforeseen challenge. When asked about the role of technology in PBL, Addy reported,

The role of technology is that it [the student work] doesn’t get lost; that is huge.

For years I [would say] I gave that to you, [and students would say] I completed that, and it is lost and all of us hunt through everything and here we know exactly where any documentation is and at this point we are beginning to use Lift as the ninth grade place to set goals to make sure that you are meeting goals.

She elaborated on the benefits of the use of technology to help organize learning.

“There’s a wonderful link between what you put in there [JumpRope], your assignment which you can attach right to the standards, the targets, and their grade so all those things are in [there].” Addy later reflected,

Technology allows for rapid feedback, easy student changes and updates,

AND technology keeps an historic record. As teacher, I can literally see the document emerge. The document becomes a living, changing dialogue over time and can include multiple voices!

Addy explained how technology allows work to become more visible and how it
keeps teachers closer to student learning with more access to evidence to assess student learning. This is incredibly important in PBL; students need to produce and curate their evidence of learning throughout high school and as they approach graduation so they can show they have demonstrated proficiency of the SU’s PBGRs.

Walter described technology as crucial to the evolution of PBL at his school. However, because PBL was not yet common practice for them trying to align the technology they had to PBL was a struggle that they had to negotiate before it matched their assessment needs. He explained the difficulty they experienced when first trying to represent PBL digitally.

We were at a point three or four years ago where the technology almost killed the whole thing [reporting proficiencies]. We had GradeQuick and GradeQuick didn’t work that way. And so one of the problems was you were doing something shifty the technology didn’t work with it, the gradebook the school tried didn’t work with it, so it felt like you were doing the wrong thing or that you were taking this big risk in doing something that was different so I think when it didn’t work it was easy to be like alright forget this.

He said of JumpRope, the company that created the technology they used as instrumental in helping them design a proficiency-based grading (PBG) system.

It supported and has now driven, supported, and pushed what we are doing. They [JumpRope employees] actually came up and did some training. They understand it more than we understand it. We actually have a grade book that we learned from the people that we are working with, [during the process of] the
setting up of the grade book there are 20 questions. [Answering the questions] is one of the most educational [experiences]. They won’t let you put in certain things and explain why it goes against standards based grading.

The technology in this case provides professional development for teachers in the philosophical underpinnings of PBL assessment as they set up their grade book. He continued to explain the role that technology was playing in facilitating conversations about PBL and allowing the school to explore the standards they were using and expected students to demonstrate.

Teachers can share targets, we can share data, look at data, we can really look at data along the ninth grade, as each [ninth grade team we can look at] how people are doing with evidence, the same targets, and eventually get to a same place”.

Walter connected technology to the ability of the whole school to be able to develop and track student progress toward graduation. “We put our new graduation standards in…all targets are getting tagged up to graduation standards to try to figure out how we will eventually use them.” This work needs to be done in order to figure out how students will demonstrate proficiency of their SUs graduation proficiencies, or standards. This is essential because without the Carnegie Unit to measure credits and seat time students will need ways to capture their own evidence that demonstrates their proficiency.

**Students and teachers as partners in learning.** Vatterott (2015) wrote, “Standards-based grading requires us to let go of our grip on control and to trust students’ intrinsic desire to learn” (p. 37). This was at the heart of how teachers in this study
approached their partnership with students. In the PBL system, teachers fueled learning with their learners, were transparent about the goals, and were in dialogue with learners about what was happening. Fullan and Langworthy (2014) also described the characteristics of the relationship between students and teachers when they are partners in learning.

Effective partnering is built on principles of equity, transparency, reciprocal accountability and mutual benefit. When you listen to the stories of how the new pedagogies unfold with teachers and students, you find a unique thread at the heart of most of them. These stories are animated by descriptions of teacher-student relationships where teachers are becoming partners in the learning with students. Let us stress, teachers as mere facilitators are poor pedagogues. The teachers we interviewed almost unanimously recognized the importance of proactively learning alongside students, in contexts where students are contributing their own ideas, experiences and expertise to the learning process.

In addition to mutual trust and transparency, these teachers were learning alongside their students. When asked how she became more clear about targets and scales, Katrina articulated what Vatterott (2015) and Fullan and Langworthy (2014) described; she emphasized that she was learning in partnership with her students. She said,

The first thing I am doing is experiencing doing it with kids, right? And so when you do it with kids you figure out how to do it better and what isn’t working and on our most basic level I think that’s a big piece of it…there’s a really simple
thing that comes across when you realize you’re trying to make it make more sense for students.

In a PBL system teachers work in partnership with their students and are capable of being in the role of learner along with students. Teachers study and learn about their students and they are also studying new events as they unfold related to their content and new areas students are discovering that the teacher may not have explored before; they use their new learning to inform instruction and assessment.

Chapter Summary

This section provided an overview and detailed discussion of each of the themes and subthemes in the findings. It is clear in this study that proficiencies drive instruction, assessment and curriculum design. It is also clear that identifying proficiencies takes a significant amount of time. Even though proficiencies are clear and detailed and could possibly be conceived as fixed and linear, teachers designed lessons around deep learning opportunities and fostered creativity and innovation in their students. Teachers partnered with their students in unique and meaningful ways and worked to move the locus of control for learning to students as they supported their exploration of the students’ own learning processes and made outcomes transparent yet still open enough for students to generate their own trajectories to go beyond what teachers have defined as proficient.
CHAPTER FIVE

IMPLICATIONS AND RECOMMENDATIONS FOR FURTHER STUDY

This study sought to learn from the lives experiences of three high school social studies teachers as they implemented PBL. The findings discussed how they shifted their approach to instruction, how they designed their curriculum, and how they choose to assess student learning. This final chapter discusses the study’s potential implications and offers recommendations for future studies that could build on these findings.

Timeline and Resources

The findings of this research suggest that educators should use the timeline and accompanying resources to carefully manage this transition to PBL. The Agency of Education passed Act 77 in June 2013 and published the new Educational Quality Standards in 2014. Schools are expected to implement PBL systems for students who graduate from high school in 2020. This timeline allows for a multi-phasic approach, which is necessary and responsive on the part of the AOE. Stakeholders need time to adjust their thinking about learning and to build practices to support this shift. Despite teachers’ readiness in this study to eliminate grades, for example, many students and their families may not be. Katrina identified that the shift was not reflecting the reality of students’ lives in the rest of school and that it caused panic for their students and families. Katrina explained that by eliminating grades so quickly they took away “kids’ currency” without any transition phase. They responded by backing up and matching what they were doing to fit the current grading system, without compromising the value of the PBL approach.
This idea of backing up when necessary or responding to the needs of learners and their families along the way is important for educators to learn. School leaders will need figure out how to phase proficiency based assessment in rather then removing a key foundation of what has been valued as central to schooling too quickly. The timeline created by the AOE allows teachers, students, families, and other stakeholders to consider the significant shift of the use of, and reason for, grades on a timeline that allows for understanding and processing. Students who are in 10th, 11th, and 12th grades right now have been in a system that has used grades to reward compliance and to sort students based on ability (Vatterott, 2015, p. 16) over their entire lives. Vatterott pointed out,

To students grades have come to represent how hard they worked and how well they followed the rules...Students have come to believe that effort (however weak), not learning, earns them an A. To parents, good grades reassure them that their child is a smart and successful student. (p. 17)

Students who are now in 9th grade will be the first students to graduate by the deadline of the PBL mandate. Hopefully they will have been exposed to PLPs and the use of grades as feedback and communication, rather than compensation and earning points.

Change theorist William Bridges wrote, “It isn’t the changes that do you in, it’s the transitions” (p. 3). Vermont education is in the middle of an enormous transition. How can stakeholders who embrace this change also support it, so schools, educators, students, and families receive the support they need during the transition? He identified the importance of acknowledging the transitions for all stakeholders and for handling the transition well. He emphasized the potential failure of a change initiative if the transition
is not managed well. “When a change happens without people going through a transition, it’s just a rearrangement of the chairs…It’s what has gone wrong when some highly touted change ends up costing a lot of money and producing disappointing results” (p. 3). Bridges warned, “Getting people through the transition is essential if the change is actually to work as planned” (p. 3).

There are deep philosophical and pedagogical shifts required in order for schools, teachers, curriculum coordinators, students, families, community members and policymakers to make the practical and concrete shifts and supports which will be needed. The AOE responded to an e-mail inquiring about the supports in place to manage the transitions. They responded,

The materials that we have produced are available on the Transferable Skills page on our website. The Proficiency-Based Learning page has our preliminary definition of PBL along with links to some valuable resources. We are actually refining that definition based on feedback from the field and will make it available as a pdf in the future. We are also working on a one-pager focused on why we are transitioning to PBL systems. We hope the materials on the Sample Graduation Requirements page are helpful to educators. Finally, the sample performance tasks provide examples of rich assessment opportunities. (Personal communication, November 2016)

Each of the underlined words was linked to a digital resource the AOE has created to support the public in this transition. The Agency is working to provide supports and continues to add more.
Other interested and capable stakeholders should consider how they also might support the transitions to PBL, including for those schools with fewer resources for professional development, collaborative capacity, and independent innovation. Creating physical and digital strategies for schools and other stakeholders to share information across SUs would enable people can learn from one another. Much of what will be designed moving forward will be new. Because this shift may take years to implement, educators, policymakers, and other vested stakeholders could develop a map of what the shift looks like at each stage, helping people to locate where they are, identify next steps, and predict barriers along the way. Essentially, this map could consist of learning targets for SUs to identify where they are in relation to the target and help them identify strategies to move forward. This could also help alleviate stress as SUs navigate uncharted territory.

Full implementation will require time because teachers first need to learn and understand PBL and then apply that learning to their own teaching and learning. Acknowledging the anticipation of an extended implementation timeline is necessary because it accurately reflects the reality of time required teachers make sense of and then apply PBL in their own classrooms; implementation might be also enhanced or slowed by other variables like community readiness, school readiness, and other factors.

**Educator skills and dispositions.** With new roles and expectations comes the need for new skills and dispositions on the part of educators. First, schools will need to identify, teach, and support the new dispositions that accompany a PBL system. Throughout the study there was evidence of teachers with “feet in both worlds”; teachers
were living in a proficiency-based model of teaching and learning in some instances and also in a traditional model of teaching and learning in other aspects of their school work. The tolerance for ambiguity on the part of these teachers was incredibly high as they continued to try to build new structures to fit in the new system. They demonstrated patience, curiosity, tenacity in the face of difficult thinking and problem solving that required putting testing a variety of new ideas out and then reworking them when ineffective. In addition, each of these teachers demonstrated incredible tenacity and agency as they worked to create the new world. They demonstrated tenacity for conversations about complex topics like cognitive science, learning progressions, examination of student work, differentiating instruction, mastery and progress, and more.

The consistent factor across all three settings was that these teachers lean forward in these learning conversations. They are concurrently thriving in, and designing, their conception and progressions of learning. This requires high levels thinking and a high degree of self-monitoring. These teachers were leaders on their faculty and participating in a variety of sense making work with a variety of stakeholders. Katrina is redesigning the TA at her school in addition to teaching, Walter is consulting district-wide on PBL, and Anne is actively working to figure out the 9-12 mapping of what graduation standards will look like at her school.

Tolerance for ambiguity and the messiness of learning will also rise in importance in educator dispositions as PBL continues to expand. The shift from teaching to learning that is central to PBL implementation is, as Act 77 articulated, “a shift from inputs to a focus on outcomes.” The question is not “have students learned?” but rather, “what will
we do when they learn? What will we do when they don’t?” This research suggests that school designs will need to reflect that they expect learning to be messy, hard, complex, recursive and incomplete and that educators know how to not only mitigate this complexity but honor it, celebrate it, anticipate it, and to design the structure, including assessment, around this complexity.

Educators may increasingly need to disrupt their mental models to design around what can be rather than what has been. Similar to the ideas behind design thinking and prototype thinking, educators and administrators need a variety of different ways to break out of current mental models of schooling. There is a need to free the structure of school from its conventions and that require thinking beyond what we currently know. Seeking opportunities to do this and then sharing the results of that thinking will help schools figure out new ways to design around learning.

In addition to dispositional shifts, new skills will be required of educators, placing new pressures on preservice teacher preparation. As schools increasingly adopt PBL, hiring practices will necessarily also shift to seek teachers with PBL experience and knowledge. Teacher education programs will need to highlight understanding of current cognitive science, of standards in content and transferable skills, and of PBL assessment practices. Preservice teacher settings should be designed to reflect PBL pedagogies. Preservice teaching needs to mirror what will be expected of teachers when they enter the profession. PBL, when done well, is set up so that targets and scales reflect increasing cognitively complexity and teachers stay in sync through assessment and feedback with their learners and ultimately work, using scaffolding and explicit teaching of
metacognition, to release more and more responsibility for monitoring of learning to the
learners. Similarly, this research underscores the importance of new teachers
understanding the relationship between learning and cognitive science. As cognitive
science progresses, teachers need to know the latest understandings that science is
uncovering about how learning actually happens. We need to design our schools and
classrooms around this understanding.

Each of the teachers demonstrated what could be considered new dispositions in
teaching. They are different from traditional teaching stances in many ways. One is of
risk taker. Katrina talked about this when she described how she and her co-teacher
“gravitated toward teaching together because that’s just our sort of style and personality, we are risk takers”. Walter expressed a new disposition into PBL. He said, “Learning is a
process and it’s not just, it’s that it’s us who have a much harder time [than the students]
with that. It’s not really how we have done it and it’s hard to feel uncomfortable in front
of 20 students. I am not a doctor working on a cadaver; I’m presenting in front of kids
and parents and I don’t want to screw up.”

PBL requires teachers to become learners. Educators and administrators and
policy makers can consider how they cultivate learning environments that allow for
teachers to be learners. The disposition of learner opens teachers up to the new learning
that will have to happen in order to study their students well so they can meet them where
they are and differentiate instruction based on where they are.

**Examine leadership structures to increase collaborative capacity.** The shift to
PBL requires an “all hands on deck” approach as evidenced by the myriad roles these
teachers played in their buildings to support this shift. The leadership structure needs to be examined to make sure it taps schools’ collaborative capacities. If teachers and students are partnering together in learning, so must administrators, teachers, and students collaborate to create a new paradigm of schooling. This requires less hierarchical communication and more horizontal communication and thinking. Many schools, especially in larger districts, are still designed around very hierarchical administrative structures. One implication of this study is that organizational leaders could examine the current leadership structures to increase their collaborative capacity.

**Adopt a learner-centered approach to PBL.** The adoption of PBL was meant to work in concert with Act 77, or the Flexible Pathways initiative. One of the goals of Act 77 is for schools to release responsibility of learning to the learner and to teach transferable skills that students can apply in other settings. Teaching students how to learn is an incredibly important skill to teach for transfer so students can learn on their own in any setting. Teaching students in partnership with teachers will facilitate this shift. PBL was meant to be set in the context of knowing learners well and designing learning around them and not on a predetermined course that is decided by teachers. Toshalis and Nakkula (2012) published a report on the links between student motivation, learning and voice. In the report they emphasize that proficiencies and personalization are not incompatible; however, they feared this could become the case. In the report they made a plea to the public,

Practically speaking, this may mean that those familiar with the research on motivation, engagement, and student voice use their own agency to ensure that
standardization does not preclude individualization. Indeed, strong student centered teaching demonstrates that the two are anything but mutually exclusive (p. 50)

Some researchers assert that educators must partner with students to ensure students understand the learning targets. As Moss and Brookhart (2012) cautioned,

Our theory of action rests on the crucial distinction that a target becomes a learning target only when students use it to aim for understanding throughout today’s lesson, and students can aim for a target only when they know what it is. Therefore, we use the term learning target to refer to a target that is shared and actively used by both halves of the classroom learning team—the teacher and the students. (p. 16)

Marzano (2010) underscored the need to include students in the process of creating and defining learning targets,

To make scales more useful to students, they should be written in student-friendly language. This should be done in cooperation with students. The teacher should introduce each scale to students as it is used in class; explain what it meant by the content placed at the score values 4.0, 3.0, and 2.0, and then have the entire class participate in rewriting the content at each score value in a manner that makes it easy for students to understand. (pp. 45-46)

However, this type of partnership does not go far enough. Students need to help
design learning goals in ways that move them beyond the receivers of all of the ideas related to curriculum and allowed to co-create and co-generate targets, scales and learning experiences with adults.

**Identify proficiencies within context of what matters.** A central feature of PBL is that teachers explore what really matters in teaching. This question can be misinterpreted to mean sets of knowledge that its use begins and ends in a classroom, in one class, and in one moment in time. Katrina talked about her early implementation efforts of PBL and trying to assess proficiencies on very small scales that were missing the whole. She described it as the “assessment pain train”. The central feature of PBL should be made clear to be what really matters beyond teaching. What matters for students to participate in a globalized world filled with possible choices about how to treat themselves, each other, and the planet? Proficiencies need to be set in contexts larger than “history” “science” or “English”; they need to be set in the context of students working and thinking about creating sustainable lives for themselves, each other, and the planet. The population is 7 billion and projections have it at 11 billion by 2100 (United Nations, 2015).

How will humans support a global population of 11 billion people and potentially mitigate the impacts of global inequity and climate change for these 11 billion people? The inequities that exist locally, nationally, and globally should fuel how educators situate, introduce, instruct, and practice toward proficiencies. Students need proficiencies to build their learning around that will help them to innovate, create, design, test, and interact with the real world. Proficiencies should fuel student learning and not constrict or
limit learning. PBL could be an initiative that redesigns the role of school as one that is useful to our communities in a way that it never has been before. Proficiencies should be designed around meeting the needs of all learners and around mitigating inequity and fostering hope in the future. This is a tall order if proficiencies are simply designed around textbook chapters or concepts that do not have lives outside of school walls. The challenges our current and future world hold for learners in school currently and in the future are varied and complex and require new ways of thinking. Proficiencies need to be designed around skills but situated in the context of what Henderson and Kesson (2004) call, “curriculum wisdom”.

**Recommendations for Future Research**

This study suggests several rich areas of potential research that could illuminate the way forward for PBL in Vermont and beyond. From an implementation standpoint, as the state moves forward with PBL in schools, much could be learned from studying effective community engagement models, as SUs work with communities to implement and communicate about PBL. Additionally, it would be useful to examine examples where PBL is limiting or expanding creative and innovative thinking. Further research on the shifting roles of the teacher, and in particular on implications for administrative structures and labor unions, would also be helpful. Finally, examining an approach to PBL that innovates with students at the center would provide ideas about what PBL looks like when it is merged with personalized learning.

From a higher education standpoint, research examining how institutions of higher education are interpreting and reacting to the shift to PBL would be essential to
informing community perception and action, policy making and practice. Relatedly, studies facilitating communication between and among secondary schools and colleges and universities could support students and families in this shift. Perhaps, most importantly, researchers can design studies around new ways of assessing what we care most about and share widely. PBL asks learners to learn more deeply and in ways that are not necessarily easily reflected through traditional assessment and standardized testing. If PBL reflects a post-modern approach to curriculum, new assessment systems will have to be designed to reflect this. Doll (1993) described this shift away from “the linear, sequential, easily quantifiable ordering system dominating education today—one focusing on clear beginnings and definite ending…to a more complex, pluralistic, unpredictable system or network” (p. 3). If standardized assessments were to reflect the practices and principles of PBL, how would they be designed? The exploration of what role of high stakes testing may have, if one at all, in a PBL context needs to be considered.
REFERENCES


National Council for the Social Studies (NCSS). (2013). *The college, career, and civic life (c3) framework for social studies state standards: Guidance for enhancing the rigor of k-12 civics, economics, geography, and history*. Silver Spring, MD: NCSS.


APPENDIX A

Research Information Sheet

**Title of Study:** Understanding How Vermont High School History Teachers Design Instruction and Assessment in a Proficiency-Based Context

**Principal Investigator (PI):** Catherine K. Toland

**Faculty Sponsor:** Cindy Gerstl-Pepin

**Introduction:** You are being invited to take part in this research study because you are a high school history teacher (or a coach working with high school history teachers) in Vermont at a school that is transitioning to proficiency-based graduation requirements. This study is being conducted by Catherine K. Toland at the University of Vermont.

**Purpose:** The purpose of this study is to learn how Vermont teachers design high school history instruction and assessment in order to transition to proficiency-based graduation requirements and proficiency based learning. The findings from the research may be published.

**Study Procedures:** If you take part in the study, you will be asked to participate in a 1-2 hour interview. The interview questions will focus on understanding your perspective on proficiency-based learning. Interviewees will be asked to bring any documents they think might be helpful to the focus of the research. For example, student work, curriculum templates, reflection prompts, etc. Participation is voluntary. The interview may be audiotaped, with your permission, in order to create a transcript of the interview. You may decide not to answer some of the questions and still remain in the study.

**Benefits:** As a participant in this research study, there may not be any direct benefit for you; however, information from this study may benefit other people now or in the future.

**Risks:** We will do our best to protect the information we collect from you during this study. We will not collect any information that will identify you to further protect your confidentiality and avoid any potential risk for an accidental breach of confidentiality.

**Costs:** There will be no costs to you for participation in this research study.

**Compensation:** You will not be paid for taking part in this study.

**Confidentiality:** All information collected about you during the course of this study will be stored without any identifiers (anonymous). No one will be able to match you to your answers.

**Voluntary Participation/Withdrawal:** Taking part in this study is voluntary. You are free to not answer any questions or withdraw at any time. You may choose not to take part in this study, or if you decide to take part, you can change your mind later and withdraw from the study.

**Questions:** If you have any questions about this study now or in the future, you may contact me Catherine Toland at the following phone number 802-238-8833. If you have questions or concerns about your rights as a research participant, then you may contact the Director of the Research Protections Office at (802) 656-5040.

**Participation:** Your participation is voluntary, and you may refuse to participate without penalty or discrimination at any time.
APPENDIX B

Interview Questions

Can you tell me about your role in the school?
What is your teaching schedule?
How long are your classes?
Do you have time to work on planning and assessment during school hours?
When and how do you plan and design instruction, assessment, and feedback for your classes? (clarify if necessary: Do you plan daily, weekly, etc.)
If I followed you through a typical planning and feedback session for the week or unit what would it look like?
What is your teaching schedule?
What do you see as the biggest difference between whatever it was you were doing before as a teacher and designing learning and feedback for students in a proficiency based classroom?
How do you start each class?
Do you have any instructional cues in your visual physical environment?
Do you have any ongoing structure in a digital environment?
If I observed a typical class of yours, what would you be doing (what would I hear? What would I see?)
If I observed a typical class, what would the students be doing (what would I hear? What would I see?)
How are the proficiencies or standards introduced?
How many different proficiencies are students working toward at a time?
How do they know what proficient is in a particular standard?
How do students become closer to proficient?
Do students assess themselves in the different proficiencies? Ask how or description of this.
How do you give feedback to individuals in relation to the proficiencies on which they are working?
How do students reflect on their work?
How do students document their ability in relation to a proficiency?
How do you document their ability in relation to a proficiency?
How do proficiencies translate into grades?
What do you think is the most important shift in a teacher’s practice or thinking is that should accompany a proficiency-based classroom?
What else do you think is essential for history teachers to do as they adopt a proficiency based curriculum and class format?
Can you describe any concerns or cautions about a proficiency based history class?
APPENDIX C

Interview Notes Form

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<tr>
<th>Instruction</th>
<th>Assessment</th>
<th>Curriculum</th>
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Questions for follow up:
Artifacts/Documents interested in:
APPENDIX D

Observation Form

<table>
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<th>Instruction</th>
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Questions for follow up:
Artifacts/Documents interested in:
APPENDIX E

Observation Field Form: What to Consider for Thick Description

“The physical setting:
What is the physical environment like? What is the context? What kinds of behavior is the setting designed for? How is space allocated? What objects, resources, technologies are in the setting? The principal’s office, the school bus, the cafeteria, and the classroom vary in physical attributes as well as in the anticipated behaviors.

The participants: Describe who is in the scene, how many people, and their roles. What brings these people together? Who is allowed here? Who is not here that you would expect to be here? What are the relevant characteristics of the participants? Further, what are the ways in which the people in this setting organize themselves? “Patterns and frequency of interactions, the direction of communication patterns…and changes in these patterns tell us things about the social environment” (Patton, 2015, p. 367).

Activities and interactions: What is going on? Is there a definable sequence of activities? How do the people interact with the activity and with one another? How are people and activities connected? What norms or rules structure the activities and interactions? When did the activity begin? How long does it last? Is it a typical activity, or unusual? Conversation: What is the content of conversations in this setting? Who speaks to whom? Who listens? Quote directly, paraphrase, and summarize conversations. If possible, use a tape recorder to back up your note-taking. Note silences and nonverbal behavior that add meaning to the exchange.

Subtle factors: Less obvious but perhaps as important to the observation are
Informal and unplanned activities
Symbolic and connotative meanings of words
Nonverbal communication such as dress and physical space
Unobtrusive measures such as physical clues
“What does not happen”…especially if “certain things ought to happen or are expected to happen” (Patton, 2015, p. 379, emphasis in original)

Your own behavior: You are as much a part of the scene as participants. How is your role, whether as an observer or an intimate participant, affecting the scene you are observing? What do you say and do? In addition, what thoughts are you having about what is going on? These become “observer comments,” an important part of[…]” (Merriam, 2016, p. 266-267)